

## Pedal Power – Bicycle Safety



As a long-time bicyclist, this author recently purchased an “around-town” bicycle for campus use. With mostly open-road experience, this is a good time to review and share bike safety tips for our urban environment, especially with the warmer weather allowing more people to bicycle-

commute, bike across town for a meeting or other event, or go for a fitness ride at lunch or at home. However there are, as with any activity, some inherent safety concerns that should be minimized.

EHS has always stressed wearing the appropriate Personal Protective Equipment (“PPE”) in the laboratory or on the job. The most important piece of PPE while bicycling is a proper helmet, which is the most effective way for avoiding or decreasing the severity of head injuries. Ensure a proper fit, wear the helmet flat on your head ensuring the helmet does not obstruct your field of vision, keep the strap buckled at all times while wearing it, and replace if involved in an accident. Helmets should meet ANSI standard Z90.40 1984, the Snell Memorial Foundation B90, B 90S, N 94, or B 95 Standards, ASTM standard F 1447 93 or F 1447 94, or Canadian standard CAN/CSA D113.2 M89.<sup>1</sup> Other PPE that can be worn are sneakers or riding shoes to protect your feet (riding with sandals or flip-flops are not recommended), and eye protection.

EHS uses the practice of ergonomics to design work stations and tasks around the worker. Use this principle when selecting and adjusting your bicycle. The bicycle should fit properly, with feet being able to touch the ground on both sides when you are stopped. The bicycle should be of sufficient size to allow handlebars to be easily turned. Before riding, take a few moments to check your bike for loose

wheels (especially the quick release style), check brakes, and ensure lights (if so equipped) are functioning and reflectors are properly in place.<sup>2</sup>

Another work-place safety technique stressed by our department is “engineering controls.” This is ensuring the proper equipment and tools are available to get the job done safely. Reflectors should be installed front and rear, on pedals, and if desired, on wheels for sideways visibility. Even in the daytime, a headlight and flashing rear light adds visibility. Consider wearing fluorescent bright colors, clothes with reflective strips, or even a reflective triangle on your back. A horn is a good way to remind motorists of your presence, and mirrors on the bike or your helmet can increase your awareness of hazards behind you.

While proper PPE, ergonomics, and engineering controls are essential, one of the most important techniques for getting the job done safely is “work practices,” which is the manner in how you perform your work tasks. A bicycle is considered a vehicle, and is subject to the rules-of-the-road, including traffic signals, stop signs, lane markings, and riding with (not against) traffic. Riding against traffic gives both driver and bicyclist less time to react, and increases collision velocities. Ride on the road, not on the sidewalk. It is illegal in New Haven to ride on the sidewalk, and dangerous as well to yourselves and pedestrians.

When stopped at an intersection, do not stop in the blind spot of vehicles, especially ones turning right. Stop either behind the vehicle or slightly in front, being ready to move as soon as the light turns. Do not pass vehicles on the right, as they may turn right unexpectedly. When turning right yourself, look for other cyclists who may be passing on the right. When turning left at an intersection, either move into the left lane if it is safe to do so, signal, and turn left, or ride across the intersection to the far-side crosswalk, dismount, and walk the bike across with the walk signal.<sup>3</sup>

Ride with both hands on the bars ready to brake, don’t ride with headphones, use hand signals to warn others of your intentions, and make eye contact with drivers before proceeding into their possible path. Ride to the right, but give yourself room to maneuver around curbs and parked cars, especially ones about to open doors. If you must ride at night, ensure you have a headlight and flashing rear light.

Drivers should provide a three foot clearance when passing bikes, check for bicyclists (even on the sidewalk) before pulling out onto the road, and when turning and parking. Do not rear-end bicyclists as they can stop much faster, and always signal so bicyclists know your intentions.

Enjoy your summer of safe and healthful biking!

1. U.S. Consumer Product Safety Commission, Release # 97-138, June 5, 1997

2. ConnDOT, Just the Facts About Bicycle Safety, 10/17/2008.

3. BicycleSafe.Com

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## Director's Corner



In *Alice's Adventures in Wonderland*, Alice asks the Cheshire Cat to tell her, "which way I ought to go from here?" The Cat replies, "That depends a good deal on where you want to get to."

It's a hard question for Alice, or anyone else: Where do we want to get to? Over the past two years, Yale Environmental Health and Safety (EHS) staff have been asking that hard question. To help us, we've been reading, *Strategic Planning for Nonprofit Organizations* (2<sup>nd</sup> ed., M. Mallison and J. Kaye). One guidepost, it recommends, is to articulate EHS' mission—a statement of our purpose. A mission statement has two elements: a description of the ultimate result we are trying to achieve, and how we do it.

To create the statement, we asked ourselves more hard questions. After many conversations, several drafts and careful wordsmithing, every EHS employee has affirmed the following mission statement:

### Our Mission

***Yale Environmental Health and Safety is a resource of highly trained safety professionals who serve the Yale 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, emergency response, hazardous materials management from acquisition to disposal, and by managing regulatory information.***

We're fortunate to have so many talented and skilled employees. EHS employees have degrees, certifications and specialized training in environmental health and safety. Continuing education and professional development is part of every employee's annual work plan. We hold employee in-service training every year, and colloquiums every month. We stay on top of new risks and preventive measures.

We're proud of what we do. And we keep trying to get better. Please let us know how we can improve our training, inspections and services. It's true that compliance is a big part of our job—from federal safety rules to finding a safe place for hazardous waste. Note that the core of our mission is reducing injuries, accidents and environmental impact. It's where we want to get to.

## Waste Water Discharge

EHS has just made available new environmental training on Water Discharge requirements. This training covers the three main types of wastewater discharges, CT Department of Environmental Protection discharge and permitting requirements, and work practices and new equipment that may result in regulated wastewater discharges.

This training is recommended for project managers, facilities maintenance, custodial, grounds and utilities personnel, and other affected personnel. The training is available on the EHS website at: [www.yale.edu/ehs/onlinetraining/wastewater/wastewater.htm](http://www.yale.edu/ehs/onlinetraining/wastewater/wastewater.htm)



## New Shipping Trainings



New shipping trainings! EHS has revamped the shipping training for biological materials so that the information presented is geared more towards the materials being shipped. Additional information as well as the trainings are available at [www.yale.edu/ehs/hazmatshipbio.htm](http://www.yale.edu/ehs/hazmatshipbio.htm) and [www.yale.edu/ehs/Documents/training/shipchart.pdf](http://www.yale.edu/ehs/Documents/training/shipchart.pdf). Please determine which training you need and complete the training on-line. It would be helpful for EHS if you let us know which training you are taking so we can continue to try and improve the shipping training. If you have any questions please feel free to contact EHS at 785-3211 or via email at [ehshazmat@yale.edu](mailto:ehshazmat@yale.edu).

## What Not to Wear

As you shed the extra layer of clothing you wrapped yourself up in during the past winter months, remember not to shed too much when your job involves working in a laboratory during the upcoming months.

Maximize your protection by following a few simple rules to keep yourself protected while working in a lab.

Sandals and open-toes shoes are never appropriate footwear. And be sure the upper portion isn't made of loosely woven material. Always wear a shoe that completely covers the foot.

Shorts, mini-skirts, and shirts that don't completely cover your upper body such as tank tops or cropped shirts, are not appropriate attire for laboratories even when they are worn under lab coats because they leave skin exposed that can be harmed by a spill.

Oh, and one more thing. Don't wear lab coats in public places, such as offices, lunch rooms, lounge areas, or elsewhere outside the laboratory, as they can transfer hazardous materials and contaminate these areas.

We've got you covered; from your head to your toes!

Whether it's sitting, lifting, bending, pushing or carrying that keeps you busy during your work hours, EHS has the information and helpful tips to get you through your work day comfortably and safely.

The 'Ergonomics @ Yale' website focuses on ways of improving work habits to help you prevent ergonomic injuries and recommends ways of minimizing or controlling these risks so that you can continue to work productively and free of discomfort. Visit it today! [www.yale.edu/ergo](http://www.yale.edu/ergo)

Some things to look for in identifying workplace risks:

- Work that places the elbows above shoulder height, or the hands behind the body.
- Tasks that call for frequent bending or twisting of the neck.
- Work requiring frequent or prolonged grasping and holding objects, or frequent wrist movements.
- Work that requires frequent lifting of items from below knee height or above the shoulders.
- Work requiring frequent bending or twisting at the waist.
- Tasks that involve carrying, lifting, pushing or pulling heavy or awkward loads.
- Spending long periods with a body part held in any one position without movement.



must be placed in its own plastic bag (see picture).

These new regulations affect the way batteries are currently collected on campus. The current battery buckets are being discontinued to prevent long term storage of batteries. Because of this change, only batteries that meet the definition of Universal Waste are required to be called in for pick up. These batteries include, lead acid batteries, lithium batteries, all rechargeable batteries and nickel oxide and mercury button batteries. All other regular alkaline batteries can be disposed of in the normal trash, or if you wish to continue to recycle alkaline batteries, place each battery in its own bag and request a pick up. If you have universal waste batteries, please prepare them by either taping each end or putting each in its own bag prior to requesting a pick up. You may collect bagged batteries and other small electronics in any small bin or cardboard box. All batteries not properly packaged will not be removed from your area. You can complete a universal waste pick up request at <https://universalwaste.med.yale.edu/user>. Please help our office remove current buckets that are placed around campus. Please request a pick up of your battery bucket.



## Smart Streets Website – Keeping Students and the Community Safe

Almost a year to the day after the death of the beloved medical student, Mila Rainof MED '08, who died after being struck by a car while jogging across the street, Yale University launched a new website called Smart Streets on April 7, 2009. The website is found at [www.yale.edu/smartstreets](http://www.yale.edu/smartstreets). Mila was only weeks away from graduating and was slated to begin her residency in a highly competitive program in California. After her death, and the death of 11 year old Gabrielle Alexis Lee in a hit and run in New Haven in June 2008, many of Mila's friends, colleagues, and Yale community members felt compelled to act. There are many Pedestrian and Traffic Safety initiatives currently taking place on campus, the latest of which is the Smart Streets Website. The Smart Streets Website was designed to educate pedestrians, cyclists, and drivers, whether they are students, staff, or community members. It is also intended to reach a broader audience outside of the New Haven area, as this website has wide appeal, even being described as "sexy" by one student at a preview event.

The website is the result of a partnership between Yale University Police, Security Programs, and Security Awareness (Susan Daria Burhans), Transportation Options, (Holly Parker and Erin Sturgis-Pascale), and Environmental Health and Safety (Kim Main Heard). We reached out to partner with the City of New Haven's Department of Transportation, Traffic, and Parking, and worked together on their Street Smarts campaign so that the entire city of New Haven was getting the same message.

The Smart Streets Website shows active street scenes with animated figures, some showing what one should do, and some showing the consequences of choosing the wrong actions. Some of the favorite scenes show intoxicated pedestrians or bicyclists weaving down the sidewalk or road, and then choosing to call a taxi for a ride home, or drivers talking on a cell phone and being pulled over by the police and issued a ticket. There are specific scenes showing how cyclists and drivers should interact, since the cyclist is described on the website as a hybrid life form, neither pedestrian nor motorist, but a little bit of both. For graphic representation of the consequences of parking on a sidewalk and forcing pedestrians into the street, access the street scene "the Sidewalk" and click on the "Driver" icon. Additionally, there is a myriad of information contained in factoids accessed by mousing over a "Handsome Dan" bulldog icon. Visitors to the site can also take a fun quiz to assess their Smart Streets knowledge, and can find a full page of web resources.

For additional information: [www.yale.edu/smartstreets](http://www.yale.edu/smartstreets).

## EHS Web Training Links

- [info.med.yale.edu/bbp](http://info.med.yale.edu/bbp)
- [info.med.yale.edu/bbpclinical](http://info.med.yale.edu/bbpclinical)
- [www.yale.edu/ehs/onlinetraining/hazwaste/chemicalwaste.htm](http://www.yale.edu/ehs/onlinetraining/hazwaste/chemicalwaste.htm)
- [info.med.yale.edu/chemsafe](http://info.med.yale.edu/chemsafe)
- [www.yale.edu/ehs/onlinetraining/TB/TB.htm](http://www.yale.edu/ehs/onlinetraining/TB/TB.htm)
- [www.yale.edu/ehs/onlinetraining/RadiationSafety/RadiationSafety.htm](http://www.yale.edu/ehs/onlinetraining/RadiationSafety/RadiationSafety.htm)

Office of Environmental Health & Safety  
135 College Street, New Haven, CT 06510  
Telephone: 203-785-3550  
Fax: 203-785-7588  
<http://www.yale.edu\oehs>

Director: Peter Reinhardt

*How you work can have a major influence on others so always consider your actions in terms of potential impact and what steps are necessary to prevent harm or injury. Become familiar with and observe established safety requirements and procedures in your work area, use any required protective equipment, and report unsafe conditions to your supervisor or our office.*

### Safety Bulletin Committee and Contributors:

Whyndam Abrams  
George Andrews  
Brenda Armstrong  
Deborah Farat  
Kimberly Heard  
Cathleen King  
Robert Klein  
Tammy Stemen

## Incident Blotter

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

### June 2009:

#### Description: Radioactive spill and exposure

A clogged infusion line resulted in pressurization and the eventual spraying of radioactive material onto equipment, the floor and nearby personnel. One individual present did not have appropriate PPE on which directly contributed to a skin contamination issue.

**Resolution:** Surveys were performed by involved individuals, the procedure was suspended and EHS was notified. EHS surveys revealed personal contamination not initially detected by involved individuals. Contaminated clothing was identified and changed. Skin contamination was cleaned and doses were assessed. Facility and equipment contamination was cleaned and spaces were cleared for normal use.

**Lessons Learned:** Appropriate PPE must always be worn when working in a laboratory setting. Surveys for radioactive contamination must be performed slowly while paying particular attention to stay very close to the area being surveyed. Personal surveys should be performed in a low background area with the survey meter on the most sensitive scale. Always call EHS in the event of personal radioactive contamination.

### June 2009:

#### Description: Chemical splash to the eye

A lab researcher was working with Trizol in a fume hood with the sash fully open and no safety glasses on. A small amount of this chemical splashed into her eye when needle used for extraction popped off the syringe.

**Resolution:** Her eyes were rinsed at the eyewash for 15 minutes, and she followed up at YNHH.

**Lessons Learned:** Eye protection must always be worn when working in a laboratory. The fume hood sash needs to be set at or below the designated maximum open height as indicated on the hoods. Also, pipette tips instead of needles should be used to avoid the sharps hazard and the potential for pressure buildup. Staff were retrained.

### May 2009:

#### Description: Pyrophoric chemical fire

A researcher working in a chemistry laboratory alone over the weekend removed a small amount of lithium aluminum hydride from a glove box and disposed of it in a cardboard box containing glass trash, causing a small fire that damaged the wall, floor, and glove box pump.

**Resolution:** The individual extinguished the fire with a fire extinguisher and called 911. NHRFD responded. No one was injured.

**Lessons Learned:** A review of personal protective equipment requirement was made, and flame-resistant lab coats were determined to be required when working with pyrophoric chemicals. An SOP for working in the glove box was developed by the PI for the lab and this information was given to all lab staff. No one is allowed to work alone with highly hazardous materials, including pyrophoric chemicals. The researcher was re-trained before being allowed to resume work in the lab.

## EHS Welcomes New Staff Member Mark Pflug



EHS welcomes Senior Health Physicist Mark Pflug. Mark received his Masters degree in health physics from Purdue University where he was also employed as a Health Physicist in their radiation safety program.

Mark will be involved in all of our health physics programmatic areas, but will be most heavily involved in our radiation safety training program, the radioisotope use authorization program and the radiation safety survey program, as well as our EHS emergency response team.

# EHS Safety Training

## Biosafety Training

Mandatory for employees prior to initiating work with agents classified at Biosafety Levels 1 and 2. Classroom only.

## Biosafety Level 3 Initial Training

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 in 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 in classroom.

## Office Ergonomics

Call EHS to schedule a personal assessment with your Safety Advisor. Be sure to visit Yale's Ergonomic website at: [www.yale.edu/ergo](http://www.yale.edu/ergo) for more information.

## Powered Industrial Vehicles

This annual training is mandatory for personnel who operate a powered industrial vehicle or PIV. Call 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 and Transport of Biological Research Materials

Required for anyone that may be involved in any aspect of shipping research materials such as biological, chemical and radioactive materials. This includes administrative personnel working in departments or areas of campus using research materials. For more information please visit: [www.yale.edu/ehs/traininghazmat.htm](http://www.yale.edu/ehs/traininghazmat.htm)

## Tuberculosis Awareness Training

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

## EHS Web Trainings

### Bloodborne Pathogens for Lab Personnel

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

### Bloodborne Pathogens Clinical Personnel

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

### Laboratory Chemical Safety

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

### Chemical Hazardous Waste Training

[www.yale.edu/ehs/onlinetraining/hazwaste/chemicalwaste.htm](http://www.yale.edu/ehs/onlinetraining/hazwaste/chemicalwaste.htm)

### Dry Ice

[www.yale.edu/ehs/Documents/training/dryice.pdf](http://www.yale.edu/ehs/Documents/training/dryice.pdf)

### General Awareness: Research Materials Shipping and Export Controls

[www.yale.edu/ehs/powerpoint/GeneralAwareness.htm](http://www.yale.edu/ehs/powerpoint/GeneralAwareness.htm)

### Laser Safety Awareness

[www.yale.edu/ehs/onlinetraining/laser/lasersafety.htm](http://www.yale.edu/ehs/onlinetraining/laser/lasersafety.htm)

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

[www.yale.edu/ehs/onlinetraining/Biosafety/BioAdmin.htm](http://www.yale.edu/ehs/onlinetraining/Biosafety/BioAdmin.htm)

### Shipping Infectious Substances – Category A

[www.yale.edu/ehs/Documents/Bio/shipcategorya.pdf](http://www.yale.edu/ehs/Documents/Bio/shipcategorya.pdf)

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

[www.yale.edu/ehs/powerpoint/categoryB.htm](http://www.yale.edu/ehs/powerpoint/categoryB.htm)

### Radiation Safety Training

Radiation Safety Basics-Part I Web Training  
[www.yale.edu/ehs/onlinetraining/RadiationSafety/RadiationSafety.htm](http://www.yale.edu/ehs/onlinetraining/RadiationSafety/RadiationSafety.htm)

### Tuberculosis Awareness

[www.yale.edu/ehs/onlinetraining/TB/TB.htm](http://www.yale.edu/ehs/onlinetraining/TB/TB.htm)

### Universal Waste

[www.yale.edu/ehs/onlinetraining/universalwaste/universalwaste.htm](http://www.yale.edu/ehs/onlinetraining/universalwaste/universalwaste.htm)

### X-Ray Diffraction

[www.yale.edu/ehs/powerpoint/X-RayDiffraction.htm](http://www.yale.edu/ehs/powerpoint/X-RayDiffraction.htm)

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](http://www.yale.edu/training) to find out what type of training is required for your job duties.

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](http://www.yale.edu/training) or call EHS at 785-3211.