



Severe Weather, Part 3 by Dena Roth, Emergency Operations Coordinator

Emergency planning is typically done keeping two broad hazard categories in mind: 1) technological or man-made hazards, and 2) natural hazards. Natural hazards are naturally occurring events that are primarily weather related. In some cases, weather triggers other hazards, as is the case with heavy rains that trigger flooding or landslides and extreme heat that triggers prolonged droughts. In this final article on severe weather, the focus will be on winter storms, flooding, drought, and extreme heat.

Winter Storms

Although rare to the South, winter storms happen often enough that planning for such events should be done. Winter storms in the South are more often in the ice storm category and, due to the infrequency and the treacherous nature of ice, are greatly feared. Why does the South experience more ice storms than snow storms? Occasionally, cold air penetrates the South. Since cold air holds less moisture than warm air, any moisture that has accumulated prior to the arrival of the dome



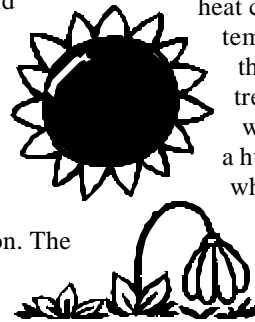
of cold air will fall to the ground as frozen precipitation and damaging ice accumulation can result. If the South experienced longer periods of cold air, we would probably have more snow than ice.

The hazards associated with winter storms and ice are dangerous traffic conditions, downed power lines, people trapped in their cars or home, and physical overexertion. The National Weather Service issues watches and warnings when conditions are right for winter storms.

Floods

Floods are caused by violent and destructive fast flowing water that can be from rivers, streams or along the coast from sea water over and above the normal tidal activity. Riverine flooding can be seasonal with winter snow thaws or heavy spring rains, but it is always the result of too much water, too fast. Coastal flooding results from hurricanes and tropical storms. Flash floods are caused from a short (minutes to less than six hours) burst of rain or other sudden release of water.

Hazards associated with flooding are fast moving water carrying debris, utility failures, people trapped in cars and homes, contaminated drinking water and disease outbreaks. The National Weather Service issues flood watches and warnings. Although flooding typically develops slowly, a flash flood warning needs to be acted upon immediately.



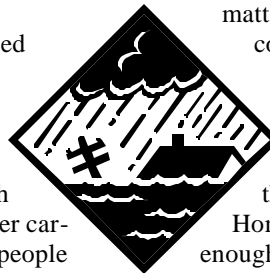
Droughts and Extreme Heat

Droughts and extreme heat or heat waves go hand-in-hand. Excessive heat combines high humidity with temperatures significantly above the norm. Drought is an extreme period of unusually dry weather. Georgia is located in a humid region of the country which typically experiences droughts of short duration. However, rainfall amounts in Georgia in the last three years would indicate otherwise.

Hazards associated with droughts and extreme heat are loss of crops and livestock, shortages of water, electrical outages and heat-related ailments. The combination of excessive heat and high humidity does not allow the human body to maintain its normal core temperature of 98.6° F. It is important to pace yourself and be able to recognize the symptoms of heat disorder (see table next page), drink plenty of water, and have an air-conditioned or shaded place to rest. All non-essential water use should be curtailed.

Always have a plan of action, no matter what the situation. No plan could be more valuable than an emergency plan for severe weather. Along with the plan, you should have the supplies to help get through the initial emergency phase.

Home supplies should include enough materials for three days for your entire family. Include the following items: water (one gallon per person/day), non-perishable food (don't forget a manual can opener), a first aid kit that includes any prescriptions, a flashlight, weather radio, regular radio, extra bat-



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Severe Weather, cont'd

Ailment	Symptoms	Treatment
Sunburn	Redness and pain. In severe cases swelling, blisters, fever, headaches.	Ointments for mild cases, if blisters appear and do not break. If breaking occurs, apply sterile dressing. Serious, extensive cases should be seen by a physician.
Heat Cramps	Painful spasms usually in muscles or legs and abdomen; heavy sweating.	Firm pressure on cramping muscles or gentle massage to relieve spasm. Give sips of water. If nausea occurs, discontinue use.
Heat Exhaustion	Heavy sweating; weakness; skin cold, pale, and clammy; pulse thready; normal temperature possible; fainting and vomiting.	Get victim out of sun. Lay down and loosen clothing. Apply cool, wet cloths. Fan or move victim to air conditioned room. Give sips of water. If nausea occurs, discontinue use. If vomiting continues, seek immediate medical attention.
Heat Stroke (or sunstroke)	High body temperature (106°F or higher); hot dry skin; rapid and strong pulse; possible unconsciousness.	Heat stroke is a severe medical emergency—summon emergency medical assistance or get the victim to a hospital immediately—delay can be fatal. Move the victim to a cooler environment. Reduce body temperature with cold bath or sponging. Use extreme caution. Remove clothing, use fans and air conditioners. If temperature rises again, repeat process. Do not give fluids.

(Continued from page 1)

teries, sanitation supplies such as toilet paper, a bucket with a tight fitting lid and household bleach, one complete change of clothing per person, as well as other clothing and bedding appropriate for the season. When preparing the emergency supplies for home, don't forget to include your pets.

The following items should be included in an emergency car kit: ice scraper, battery-powered radio, extra batteries, a blanket, shovel, booster

(battery) cables, first aid kit, siphon hose, flashlight with extra batteries, an ABC fire extinguisher, maps, flares, food, and water.

Preparing for emergencies at work should include an emergency plan for your building with emergency phone numbers and identified areas of refuge. Every department should have a weather radio and a notification plan such as a phone tree. Other supplies should include a flashlight, an AM/FM radio, extra batteries, and a first aid kit.

Take these supplies with you to the refuge area.

If your department would like assistance in writing an emergency operations plan, please contact the emergency operations coordinator at (706) 369-5625 or via email: droth@esd.uga.edu. If you would like more information on emergency supplies for your home and car, pamphlets are available free at the American Red Cross office located on Milledge Avenue in Athens.

Upcoming Safety Courses at Training & Development

For online catalog and registration forms go to the Training & Development website: www.busfin.uga.edu/staff/

Chemical-Specific RTK Training

If you work with chemicals in a lab environment, you need Chemical-Specific Right to Know training as required by the State of Georgia. Attend the class listed below, or take the online course at www.esd.uga.edu/rtkcs. The online course will qualify as either initial RTK chemical-specific training or annual refresher training. Questions? Contact Maria Kuhn, right to know coordinator, at 706-542-3571 or mkuhn@esd.uga.edu

March 27, 9-10:30 am

Radiation Safety Training

If you have authorization to use radioactive materials, please attend these programs in the order listed below. Questions? Contact Dennis Widner, health physicist, at 706-542-0526 or dwidner@esd.uga.edu.

Module 5: Dosimetry
February 4, 1:30-3:30 pm
March 4, 1:30-3:30 pm

Module 6: Lab Safety Prog. Development
February 11, 1:30-3:30 pm
March 11, 1:30-3:30 pm

Module 7: Irradiators & Sealed Sources
February 25, 1:30-3:30 pm
March 25, 1:30-3:30 pm

Solid and Hazardous Waste Management

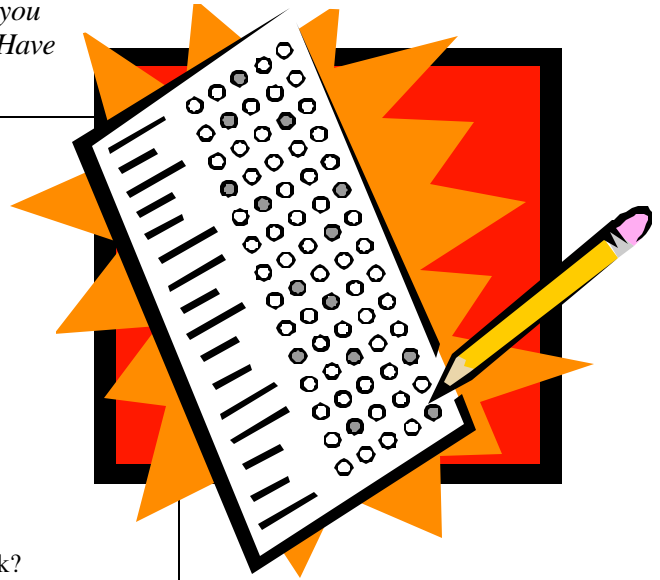
This course will cover the smart and legal way to identify, store, transport, and dispose of hazardous waste. It will also register you in UGA's Hazardous Materials Program and familiarize you with the steps involved in getting hazardous waste removed from your workplace. This class satisfies the initial and annual refresher training requirements mandated by the EPA and DOT. Questions? Contact Greg Bell, certified hazardous materials manager, at 369-5706 or gbell@esd.uga.edu.

February 19, 9-11:30 am
March 20, 9-11:30 am

The Injury Game by Bob Wentworth, Project Coordinator

Here's a little quiz. The prize is that, if you know the answers, you might save yourself a trip to the hospital! Answers are below. Have fun!

1. Which of the following is the most common cause of injuries at UGA?
 - a. lifting
 - b. cuts
 - c. slips, trips, and falls
 - d. animal bites
 - e. chemical exposures
2. What part of the body is most frequently injured at UGA?
 - a. back
 - b. hands/fingers
 - c. eye
 - d. arm
3. Who can do the most to keep someone safe while they're at work?
 - a. the person him/herself
 - b. the person's supervisor
 - c. the person's colleagues
 - d. UGA administration
4. How can you get a free safety survey of your work area and free training on a lot of safety topics?
 - a. call the Environmental Safety Division at 706-542-5801
 - b. email the Environmental Safety Division at aandrews@esd.uga.edu
 - c. write Environmental Safety Division (address on last page)
 - d. stop by the Environmental Safety Division on Riverbend Rd.
5. The best time to get a free safety survey and some free safety training is:
 - a. after you get carpal tunnel syndrome.
 - b. after you trip over the extension cord.
 - c. after you're flat on your back.
 - d. after the fire.
 - e. right now, by calling 706-542-5801 or emailing aandrews@esd.uga.edu



nobody else has as much to gain from it as I do. Another way to look at it: If I'm not doing everything I can to make sure that I get home in one piece every day, who will do it for me?

4. "a, b, c, d" The Environmental Safety Division can answer questions on topics from air quality to driver safety to chemical spills to ergonomics. Check out our safety videos at www.esd.uga.edu/info/pub/vlibrary.pdf. You can use them on your own, or we'll be glad to come over and lead a discussion of any of the video topics.

5. "e" Right now is the best time to get safety training. Too often, people think that it will never happen to them. Yet it does happen to us, right here at UGA, every day. Take a minute to look around your work place. Is there anything laying around that could trip someone? Is all of the electrical and mechanical equipment in good condition and safe to use? Do you have the right safety equipment? Do you know where the fire exits are? If you work near chemicals, do you have a good eyewash and safety shower? Are your chemicals stored safely? If you'd like some guidance or training on any of these topics, or if you simply have a question, please contact us at 706-542-5801. We're here to help!

Answers to Injury Game quiz:

1. "c" There were 113 slip, trip, or fall injuries at UGA during 2001. Many of these were due to objects left laying in the floor, such as backpacks, briefcases, and boxes. Keep the floor clear and save yourself from some pain!

2. "b" Hands and fingers are injured more often than any other body part at UGA. Back injuries are second, followed by arm injuries. Eye injuries rank fourth, and are one of the most easily prevented injuries—wear eye protection! In a recent analysis of on-

the-job eye injuries, it was found that less than 10% of eye-injury victims were wearing eye protection at the time of the injury. Your supervisor can provide you with the eye protection you need. Goggles and safety glasses are cheap; replacement eyes are hard to find!

3. "a" Nobody can do more to keep me safe than I can myself. I need to keep my floor clear, my windshield scraped, my driving speed down, and my safety goggles on. Nobody else can do as much for my safety as I can, and

Laboratory Safety Review, Part I by Wes Kolar, Environmental Safety Specialist

It is easy, particularly in today's fast-paced world, to take for granted tasks that we perform on a daily basis. Routine tasks are often performed without much forethought as they have become common place and do not require a great deal of planning on our part. While it is a natural tendency to take routine tasks for granted, this practice can become dangerous, particularly in a chemical laboratory. The purpose of this article is to re-examine some of the built-in safety features in UGA laboratories that may have become commonplace to researchers over the years. The time to reacquaint oneself with the proper function of such equipment is long before it is needed in an emergency.

Safety Showers and Eye Washes

Most UGA laboratories are equipped with safety showers and eye washes for use in chemical emergencies. While most laboratory personnel know how and when to use them, many researchers do not remember exactly where the equipment is located. Laboratory workers must be



Wes Kolar, environmental safety specialist, performs yearly testing on a safety shower to ensure it is operating correctly.

able to find their way to an eye wash or shower with their eyes closed as it may be difficult or impossible to see once a chemical exposure has occurred. Immediate dilution of hazardous chemicals is the best treatment for an unwanted exposure. This is particularly true of eye exposures where irreparable damage may be caused after just ten seconds of contact with many chemicals¹. Since coworkers may not be available to assist you in locating emergency equipment, it is a good idea to practice finding showers and eye washes in the dark.

Older laboratories, constructed before the Board of Regents' safety shower and eyewash installation guidelines were in place, may not have this safety equipment. In order to help correct this inadequacy, the Board of Regents allocates MRR (major repair and renovation) funds yearly for such installations. There is no cost to UGA laboratories for MRR installations. If you use hazardous chemicals routinely and your laboratory is lacking either a shower or eye wash, please contact Heath Hardison (hhardison@esd.uga.edu or 583-0329) in order to be included on the MRR installation list. Please be advised that installations may take some time as MRR requests must be submitted well in advance of the fiscal year.

Finally, it is important for lab workers to test showers and eye washes routinely. The Environmental Safety Division tests showers and eye washes yearly and makes arrangements to have malfunctioning equipment repaired. Yearly testing assures that equipment will be ready for use when needed, but is often not frequent enough to keep water from becoming stale while sitting in pipes for up to 12 months. Shower and eye washes should be tested at least quarterly by laboratory personnel in order to keep fresh water in the supply piping.

Fume Hoods

When properly employed, fume hoods function to protect workers from unwanted fumes and vapors. However,

they are often used improperly for the storage of equipment and chemicals. Items stored in fume hoods can interfere with air flow, reducing hood efficiency and increasing the chances of inhalation exposures. Inadequate fume hood operation can also occur when laboratory personnel operate hoods under conditions that are different from those used to initially test the hood. For instance, if a hood was tested with all laboratory doors closed and the sash set at 18", it should only be operated when all laboratory doors are closed and the sash is at 18" or less. Other parameters that affect fume hood performance are face velocities (rate at which air enters the hood from the laboratory) and hood baffle settings². Take a moment to familiarize yourself with the general fume hood operating guidelines which are attached to all UGA fume hoods (green sheet). Additional fume hood guidelines are located in appendix F of the UGA Chemical and Laboratory Safety Manual, and on the ESD website located at: www.esd.uga.edu/chem/chemfumehood.htm. Questions concerning fume hood testing and operation should be addressed to Bruce Hild (bhild@esd.uga.edu).

Part two of this article will re-examine the proper placement and use of additional safety equipment that is located in most UGA laboratories such as fire extinguishers, spill kits, and first aid kits. In the meantime, your assistance is needed to produce the safest laboratory conditions possible at the University of Georgia.

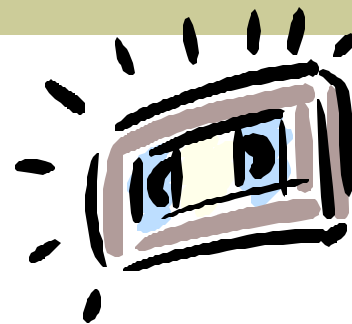
References

¹David Roll and Ken Duffie, "Eyewash Standards and Guidelines for the Workplace," located at: www.ohsonline.com. (Perform a search for article title)

²Gershey, E. L.; Wilkerson, Amy; Joao, R. V.; Volin, C. E.; Party, Esmeralda; Reiman, J. S.; "Chemical Hood Performance: Standards, Guidelines, and Recommendations;" *Chemical Health and Safety*; November/December; 1996; pp. 32-39.

Safety Videos Available

The Environmental Safety Division has a library of safety videos which can be borrowed free of charge by University employees. Call us at 542-0113 or place a checkmark by the videos you wish to borrow and return this completed page to us. Videos can be borrowed for up to two weeks or longer, if necessary; they can also be reserved for upcoming training classes you might be conducting. Please let us know if you have any special training needs so that we can look for particular safety topics for future video purchases. For a description of each video, including its length, go to our website: www.esd.uga.edu/info/pub/vlibrary.pdf.



Art Safety:

Health Hazards and the Visual Arts

Chemical and Laboratory Safety:

- Hazardous Chemical Waste Management in the Laboratory
- Chemical Storage Hazards
- Chemical Hazards
- A Place For Everything: Chemical Storage in the Laboratory
- Practicing Safe Science
- The Keys to Laboratory Safety
- Introduction to Reactive and Explosive Materials
- Radionuclide Hazards
- Science—Live to Tell About It
- Glassware Washing Hazards
- Centrifugation Hazards
- Fume Hood Test and Training
- Safety Showers and Eyewashes
- All Washed Up
- Safe Handling of Laboratory Glassware
- Whose Job Is It Anyway
- Laboratory Fume Hood Safety
- Assessing Risks of Toxic Chemicals
- Flammables and Explosives
- Mammalian Cell Culture Hazards
- X-Ray Diffraction Hazards
- Controlling Your Risks—HIV in the Research Laboratory
- Working with HIV Safely in the Laboratory
- Preventing Contamination
- Get Your Checklist Ready—A Guide to Lab Safety Inspections
- Laboratory Safety: Potential Hazards II
- Ether Removal at Mercer Univ. Reactives/Explosives, AETC
- Hazardous Materials
- Lab Safety

Driver's Safety:

- Just Another Saturday Night
- Breaking the Accident Chain of Events
- Night Driving

Emergency Procedures:

- Tornado—Nature's Fury
- Chernobyl—Legacy of a Meltdown

- Emergency Response
- Preparing for a Crisis on Campus
- An Orientation to Community Disaster Exercises
- Bioterrorism & Mass Casualty presentation; UGA; 10/31/01

Fire Safety:

- Fire Safety in the Lab
- Fire Escape—Getting Out Alive
- How Fast it Burned
- Ready to Respond

Gas Cylinders:

- Gas Cylinders—Welding, Cutting, & Brazing
- Compressed Gases Can Be Dangerous; An Explosion Case History
- Handling Compressed Gas Cylinders
- Gas Cylinders—Overview

General Safety:

- Salmonella—The Enemy Within
- The Invisible Killer—Carbon Monoxide
- Confined Spaces—Silent Killer
- Self Help for Back Pain
- Return to Work for Employees
- Return to Work for Supervisors
- Star Witness—Accident Reporting
- Safety in the Workplace
- Science of Cause & Avoidance

- Good Safety is Good Business
- How To Investigate an Accident
- Documentation of Safety Efforts
- Ergonomics—Taking Matters into Your Own Hands
- Ergonomics—Your Body at Work
- Near Misses
- It Only Takes a Second
- Minimizing Back Strain on the Job
- VDT & Workstation Ergonomics

Operations and Maintenance:

- Pesticide Safety—Worker Protection (English/Spanish version)
- Summer Groundskeeping
- Groundskeeping Safely—Be a Pro
- Bloodborne Pathogens Safety—Custodians

Right to Know/Hazard Communication:

- Cracking the Code
- Material Safety Data Sheets
- MSDS—Roadmap to Safety; Read the Label
- Your Right to Know
- Right to Know—Administrators and Trainers Guide
- Your Right to Know and MSDS Roadmap to Safety

Name _____	Date Requested _____
Department _____	
Room No. _____ Building _____	
Mailing address (if off-campus) _____	
Phone _____	E-mail _____

Outlying Facilities Support and Outreach Program

A new function of the Environmental Safety Division has been created to assist outlying facilities and campuses with environmental health and safety issues. The expertise and safety resources that already exist at the main campus in Athens will be utilized to provide guidance in the following areas:

Lab Safety Surveys/ Consultation

Surveys to assess laboratory safety will be provided as well as chemical safety information and consultation. Recommendations will be offered in the use, placement, and testing (certification) of chemical fume hoods, safety showers and eyewash stations.

Radiation Inspections

The inspections are a tool used to help assure safety and to provide services and assistance to researchers using ionizing radiation in their daily operations.

Hazardous Materials Management

Inspections will be performed to help assure that hazardous materials

and waste are being properly handled and stored. Additional assistance will also be offered in the scheduling of hazardous waste removal and disposal.

Regulatory Guidance

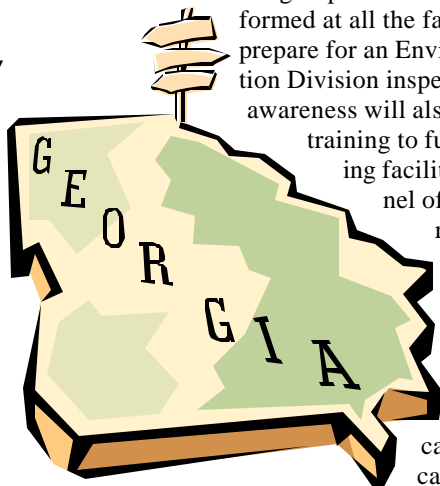
Regulatory guidance will be an integral part of the inspections performed at all the facilities and will help prepare for an Environmental Protection Division inspection. Regulatory awareness will also be a key part of training to further educate outlying facility university personnel of their role in environmental safety and compliance.

Training Support

Training that is customized for the particular location is available and can be provided on-site, via the ESD or other Internet web-sites, or at the Athens campus.

Additional services include non-laboratory safety surveys/consultations and respiratory protection education, consultation, and fit testing certification.

For more information, contact Bill Favaloro, environmental safety coordinator, at (706) 369-5706 or email him: wfavaloro@esd.uga.edu.



Kudos

- Thanks to the deans and vice presidents for their support in putting safety first in the research labs. Much improvement was made in 2001.
- Congratulations to Greg Bell on achieving the Certified Environmental Trainer (CET) designation from the National Environmental Training Association.
- The Radiation Control Office was found to be in full compliance with the regulations and the provisions of the University's broad scope license during the recent inspection by the Georgia Department of Natural Resources Environmental Protection Division Radioactive Materials Program. Thanks go to radioactive material users campus-wide whose actions keep UGA in good standing.
- Welcome to new ESD employees: Mika Melton, administrative secretary; Jeff Shirey, hazardous materials specialist; and Brian Blalock, fire extinguisher inspector.
- Many thanks to Griffin, Tifton, Brunswick, Sapelo and Skidaway for their help in making the hazardous waste removal of the outlying facilities in November a success. Special thanks to Dan Fuschak, Jim Graham, Mike Mael, Anne Rigsby, Mary Price, Randy Walker, Alan Power, Braxton Tesh, and Katy Austin.

Front Line Security

The "Front Line Security" presentation given by Chuck Horton of the Public Safety Division and Dena Roth of the Environmental Safety Division at the Tate Center on November 6, 2001 can be viewed online at http://www.busfin.uga.edu/staff/security/front_sec.html.



To view this video presentation, you will need Real Media Player. Alternatively, you may check out the video by contacting Training and Development at 706-542-7062 or emailing them: training@uga.edu.

Also located on the website are questions and answers from the presentation, tips on suspicious mail and package handling, an anthrax fact sheet, and a bomb threat checklist.

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