



Environmentally Speaking

University of Georgia
Environmental Safety Division

Vol. 7, Issue 1
Fall/Winter 2005/2006

ESD Accomplishments for 2004-2005

Summary of Major Accomplishments (taken from the ESD Annual Report)

The University's Environmental Safety Division (ESD) continues to meet the challenges of new regulatory initiatives while maintaining ongoing projects. The existing Divisional mission and strategic plan drives our focus as we take on the implementation of new programs and projects.

Public Health Program

Our public health staff, in collaborative effort with the Clarke County Health Department, is responsible for the Athletic Department's allocation of nearly \$400,000 in facility and equipment upgrades in Sanford Stadium concession stands this year in order to address compliance issues. ESD public health is also responsible for creating the emergency pet shelter symbol that was adopted by the Georgia Department of Agriculture.

Training

Although ESD reduced on-site training throughout our organization, we continue to provide our training courses online to increasing numbers of faculty and staff. This includes hazardous waste and right-to-know training.

Radiation Safety continues to offer training classes in partnership with Training and Development as well as web-based training.

In addition to regulatory mandated training, ESD's Right-to-Know program assisted the school of education by presenting a course to outgoing public school science teachers, which focused on safety, chemical disposal and assuming the responsibility of a science lab. Teaching future science teachers how to operate their lab in an environmentally sound manner that provides a safe surrounding for public school teachers and students, ESD has worked towards the Senior Vice President for Finance and Administration's (SVPFA) goal to "*Strengthen alliances and cooperative agreements that will enhance the relationship and service capabilities of UGA to the local community and State of Georgia.*"

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Fire Safety

In Fiscal Year 2005, Fire Safety has established a general fire safety and fire extinguisher training program, which allows students to extinguish a live fire under controlled conditions. This course has provided over 1,100 contact hours of training and is offered monthly through Training and Development as well as on request. We also continue to work closely with the Athens Clarke-County Fire Department and Greek Life to provide annual fire safety awareness training to the University's fraternities and sororities. The fire safety program's accomplishments in training and inspections have been done in the spirit of the SVPFA's goal to "*Protect University people and property.*"

Fire safety continues to provide annual life safety inspections for occupied buildings both on the main campus and satellite facilities throughout the state. Through a focused effort, the number of annual and follow-up inspections exceeded six hundred in FY 2005. In cooperation with the Office of Greek Life, Fire Safety successfully implemented an increased inspection program, to four times per year, for on-campus fraternities and sororities. In cooperation with the Office of University Architects, a sprinkler system was successfully installed in the Chemistry building. Also, numerous fire alarm systems and Life Safety Code corrections have been provided through a cooperative program with the University's Physical Plant including the modernization of the fire alarm system in Aderhold Hall. We continue to work closely with the State Fire Marshal's Office and the Athens-Clarke County Fire Department.

Hazard Assessment Response Team (HART)

Due to a recent Georgia Emergency Management Agency (GEMA) grant of \$230K, the capabilities of the HART team have been greatly enhanced. The GEMA grant money was used for the purchase of a primary HazMat response vehicle, which should significantly reduce the response time of minor spills. Also, a \$50K field portable infrared spectrometer was acquired that allows the team to identify unknown substances with greater precision. A wide variety of necessary HazMat equipment and personal protective gear was purchased with the balance of

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the grant. By pursuing and receiving this GEMA grant, ESD has met the SVPFA goal to “Identify outside funding sources for internal operational expenses.”

Laboratory Safety

Continued attempts to provide support to the campus for laboratory safety initiatives are also visible. The office of laboratory safety performed a special review of the Chemistry building focusing on hazardous waste compliance issues. This review took approximately 3 months and helped this facility to improve regulatory compliance, reduce hazards in the workplace and prepare for their annual audit from Georgia’s Environmental Protection Division (EPD). Additionally, internal annual audits for this facility have been moved to mid calendar year to provide better service prior to their routine fall audit with the EPD. Over the course of 8 weeks, the office of laboratory safety and hazardous materials management worked in a collaborative effort to provide laboratory clean outs to 3 campus researchers. A total of 12,852 containers were properly removed and disposed of as hazardous waste.

The implementation of Chematix, UGA’s chemical tracking system, is ongoing. Last year a total of 250 users in 50 laboratories were loaded into the system. The maintenance of a chemical database for the system was initiated with a total of 574 chemicals reviewed and added. Currently, the system has over 50,000 chemical entries in the database. This database is critical to the system’s operation and considered the spine of the chemical tracking system. Additionally, Georgia Tech and Brigham Young University purchased the system and are working on campus implementation. Chematix, is a demonstration of ESD’s efforts to attain the SVPFA goal to “Maintain and (if compliance does not exist) achieve compliance with national health and safety standards.”

Work with the laboratory self-inspection program was completed in FY 2005 with all expectations surpassed. This program was envisioned and created by ESD’s Right-to-Know (RTK) program in response to a “Notice of Violation” (NOV) received by UGA from EPD concerning the conditions in labs arising from hazardous waste issues. This NOV requested a lab inspection schedule that was to be completed in six months, which was impossible for the current number of ESD staff to meet. A website was generated which featured a checklist and enough educational information to enable each lab to perform their own inspection and correct deficiencies themselves. Upon completion of the lab self-inspection, the remainder of the process was automated from the ESD website. In the end, close to 1000 labs completed the self-inspection and not only were all of the conditions of the NOV met but other ESD departments (outlying facilities) were able to borrow and apply this technique to make their duties and processes more efficient as well.

Environmental Safety has successfully implemented a compressed workweek schedule for its staff. This voluntary program allows employees to work slightly longer shifts in

exchange for fewer total workdays per month. This schedule supports the governor's initiative to reduce fuel consumption and is an especially appropriate measure for an environmental organization. Also, by implementing the action step to “Implement family-friendly policies and procedures that promote flexible work schedules...” referenced in the SVPFA goal to “Enhance to upgrade employee benefits and services” works to achieve this goal.

Outlying Facilities

The Support and Outreach to the Outlying Facilities program has completed its fourth year as the sole environmental, health, safety and regulatory support to the many valuable outlying marine and agricultural research sites located outside of Athens.

The goal to provide financial relief to the Skidaway Marine site renovation project was successfully completed by providing over \$70,000 worth of equipment. The equipment originally destined for the landfill, was collected from renovation projects on the Athens campus. ESD was a critical component in the acquisition of the MRR funds for the renovation. Additionally, an on-line based laboratory self-inspection process was implemented based on the RTK self-inspection program created and installed earlier. This program allows safety/regulatory assessment of 10 sites, 4 times/year via the Internet in addition to the once/year onsite inspection.



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**Next issue will be published around
May 2006.**

Treatment of the Early Stages of Dermal Exposures to Hydrofluoric Acid

By Wes Kolar, UGA HazMat Response Coordinator

Due to the fact that it ionizes only partially in water, hydrofluoric acid is considered to be a weak acid, yet the injuries produced by exposure to hydrofluoric acid are usually extremely painful and often life threatening. Hydrofluoric acid or HF is an inorganic acid that is typically sold as a 29 M solution (29 moles/liter, where a mole is one gram formula weight, or in this case 20 grams). While it is natural to focus on the potentially dangerous effects of the acid portion of HF (hydrogen cation), it is the fluoride anion (F⁻) that is responsible for most of the serious injuries and deaths that occur with HF exposures. Fluoride ions can readily absorb through the skin from aqueous solutions. Once inside of the body, fluoride ions combine with calcium and magnesium to form relatively insoluble compounds. A primary example of this interaction occurs when HF enters the body and interacts with bone tissue by dissolving it in order to combine with the calcium contained therein. By all accounts, this type of injury is



extremely painful to the victim, and usually requires surgery to remove damaged tissue and the calcium fluoride that has formed around the bone. Probably the most life threatening aspect of exposure to HF involves the removal of calcium ions from the blood producing a condition known as hypocalcemia or serum decalcification. Reduction of serum calcium can lead to a variety of medical problems including fibrillation of the heart. The medical problems associated with hydrofluoric acid exposures can vary widely and depend on several factors including the route of exposure, the total area exposed, the concentration of the acid, and, the duration of the exposure. Any exposure to concentrated hydrofluoric acid, no matter how brief, **must be treated immediately** (1-2). The intent of this article is to examine acceptable treatment options for the early stages following a dermal exposure to HF.

As is the case with all potentially harmful chemical contacts, immediate response to the exposure is critical in limiting the associated damage. The first step in the treatment of dermal (and optical) HF exposure is the same as the first step in treating contact with any potentially harmful acid, namely to immediately remove all affected clothing and deluge the exposed area with cold water for at least fifteen minutes (3). The cold water flush is critical in removing as much hydrofluoric acid from the skin as possible in as short a period of time as possible. It is therefore vital that those working with hydrofluoric acid have quick access to a properly functioning safety shower and eye wash.

The second step in the treatment of dermal HF burns is to attempt to remove as much of the remaining fluoride

ion as possible from the skin and subcutaneous tissues. Most treatment schemes involve the application (for one or two hours) of a compress containing a cold dilute solution of benzalkonium chloride (A.K.A. zephiran chloride) (3-6). The above solution can easily be prepared in the laboratory by adding 1.7 grams of benzalkonium chloride to one liter of DI water. The resulting solution should be kept readily available in a laboratory refrigerator (see note below).

After the application of the cold compress, further removal of fluoride ion is typically accomplished by the dermal administration of a paste that contains either calcium or magnesium ions (2-7). Due to its' corrosive nature, the use of calcium chloride is not recommended (3). A simple calcium based paste can be prepared by mixing 2.5 grams of calcium gluconate with 97.5 grams of a water soluble surgical gel such as K-Y. An effective magnesium based paste can be made by mixing the following ingredients; 20 g magnesium oxide, 100 g magnesium sulfate, 2 g gum arabic (acacia), 130 mls of DI water, and 100 g of glycerine. Calcium or magnesium based pastes should be liberally applied to the affected area and left in place. Reapplication of the paste is usually indicated up to six times per day for a few days. In addition, severe exposures to HF usually require subcutaneous injections of a 5% isotonic solution of calcium gluconate (2, 7). Subcutaneous injections are beyond the scope of this article, and should only be attempted by a qualified physician.

In summary, the key to reducing the damage associated with dermal exposure to hydrofluoric acid is early treatment of the affected area. The appropriate steps to take are:

- 1) Immediately remove all affected clothing,
- 2) As soon as possible, deluge the affected area with cold water,
- 3) Continue the cold water flush for fifteen minutes,
- 4) Contact emergency medical services for advise and assistance,
- 5) Apply a cold compress of dilute benzalkonium chloride for 1 to 2 hours,
- 6) After the compress, apply a calcium or magnesium based paste,
- 7) Seek ongoing medical attention for the exposure.

Due to the need for immediate attention, early treatment will usually be performed by the injured party, or by someone else in the laboratory. It is therefore critical to keep treatment supplies on hand and readily available. The time to prepare for a potential exposure to HF is long before it happens.

Note: Upon request, the University of Georgia's Environmental Safety Division will provide HF users with the dilute benzalkonium solution mentioned in this article. To obtain benzalkonium solution, please contact Wes Kolar at: wkolar@esd.uga.edu.

(References on next page)

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References:

- 1) "Fatal Accident Hydrofluoric Acid," EH & S News, University of Massachusetts, Vol. 4, No.2, Summer 1998, pp. 1-3.
- 2) "Treatment of Severe Hydrofluoric Acid Exposures", Trevino, M. A.; Herrmann, G. H.; Sprout, W. L., Journal of Occupational Medicine, Vol. 25, No. 12, December 1983, pp. 861 – 863.
- 3) "Treatment of Hydrogen Fluoride Injuries," Asher J. Finkel, Advances in Fluorine Chemistry, Butterworth and Company, London, Vol. 7, 1973, pp. 199 - 203.
- 4) "Symptoms and Treatment of Hydrogen Fluoride Injuries," Peters, D.; Miethchen, R., Journal of Fluorine Chemistry, Elsevier, Vol. 79, 1996, pp. 161 - 165.
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- 6) Goldfrank's Toxicology, 5th edition, pp. 1254 – 1263.
- 7) Regional Intravenous Infusion of Calcium Gluconate for Hydrofluoric Acid Burns of the Upper Extremity," Graudins, A.; Burns, M. J.; Aaron, C. K., Annals of Emergency Medicine, November 1997, pp. 604 – 606.

Rad Dawg News

By Jody Jacobs

New Radiation Safety Lab

I am pleased to announce that radiation safety is now using a laboratory in the Riverbend Research building. Routine activities performed in the new laboratory include receipt and in-processing of radioisotope orders, analysis of contamination test samples, bioassays for personnel using radioactive iodine, liquid waste sampling and analysis, and miscellaneous other activities. Our new lab provides fully adequate facilities for the performance of these safety support services. The lab was previously located at the Hazardous Materials Treatment Facility (HMTF) on Will Hunter Road. In addition to having improved facilities, moving the lab to Riverbend reduces the distance radiation safety personnel travel to and from campus. This cuts down on fuel usage and vehicle costs while improving our operational efficiency.

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The lab at HMTF has been converted into a calibration facility for portable radiation monitoring instruments. Radiation safety provides this calibration service at no cost to the research community. Similar services would cost approximately \$100 per instrument annually if subcontracted to qualified vendors. The lab relocation provides improved facilities for the performance of this task. I am very grateful to Dr. Arnett Mace, Mr. Henry Huckaby, Dr. Gordhan Patel, Mr. James Dorsey, and Mr. Wayne Dill for their support of this endeavor.

Disposal of Surplus Radiochemicals

Radiation safety is encouraging users of radioisotopes to eliminate excess radioactive materials that are no longer useful in research. Excess inventory can provide unnecessary complications in regard to radioactive materials security, inventory control, and contamination. Lab personnel should be aware that long term storage of radioisotopes in freezers can result in small amounts of radioactive contamination in freezer frost.

Even in a frozen state, radioisotopes can off-gas (sublimation) over time and the vapor may penetrate storage vials and adhere to the thin layer of frost that forms in most freezers. Routine wipe test surveys can be done to check for this type of contamination and decontamination is usually not difficult. However, if long term storage is not necessary, this issue can be eliminated.

Radiochemical Decomposition

Another reason to limit long term storage of radioisotopes is because decomposition occurs as a result of the energy of the radioactivity. The primary modes of decomposition due to radioactivity include radioactive decay, direct action of radiation on the compound (ionization), and action on the com-

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pound from products such as free radicals that may be produced by radiation interaction. The radioactive decay process cannot be changed and there is little that can be done about direct ionization. Storage at cold temperatures and the use of preservatives (free radical scavengers) can reduce the effects of free radical interaction. It is recommended that only those quantities of radioisotopes that are actually needed be purchased and that long term storage be avoided. This provides better quality assurance in the research process and enhances laboratory safety.



Reaching Out to Support the Outlying Facilities Marine Extension Service-Shellfish Research Laboratory Renovation

By Bill Favaloro and Dr. Alan Power

The Support and Outreach for the Outlying Facilities branch of ESD was created about four years ago to give environmental, health, safety and regulatory support to the marine and agricultural sites outside of Athens. A great example of this effort is evident in the recently completed project of more than 2 years supporting the renovation of the Marine Extension Services Shellfish Research Laboratory on Skidaway Island. Support began with the effort to secure major renovation funding for the project and ended with a contribution of over \$70,000 of equipment, most of which was acquired from renovation materials destined for the landfill as a result of renovations at the UGA campus in Athens.

History and Information on the Shellfish Research Laboratory

Located near historic Savannah, the Marine Extension Service's Shellfish Research Laboratory on Skidaway Island has recently reopened

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following a major renovation project. The facility sits on the banks of the Skidaway Narrows, a part of the Intercoastal Waterway, and overlooks rich tidal marshland. Designed in 1973, the laboratory was originally intended to serve as an oyster hatchery for the lucrative oyster industry that existed at that time. During the 1980's, deteriorating oyster landings shifted the focus of the facility to the rearing of alternative bivalve species, various seaweeds, and marsh food chain dynamics. Currently the laboratory performs applied research and extension support in the areas of shellfish aquaculture and fisheries, invasive species, and habitat monitoring and restoration. Our mission is to preserve and enhance coastal natural resources and to promote sustainable economic and social growth in coastal Georgia.

Personnel at the site includes: Dr. Alan Power, Research Scientist; Marcy Mitchell, Research Technician; Mary Sweeney Reeves, Marine Educator; Ellie Covington, Research Technician; Justin Manley, Research Assistant; and, Erica LeMoine, Research Technician.

The Need to Renovate

While the structure of the building was sound, conditions inside had deteriorated from years of use and exposure to the harsh environmental conditions experienced on the coast. All electrical and mechanical systems were failing, and safety concerns were starting to materialize. We successfully acquired 2005 MRR funding to replace these systems, modernize the facility and bring it up to code. All personnel moved out into our adjacent sister unit the Marine Education Center and Aquarium during May 2004 to allow demolition to commence.

Prior to the renovation, working space was also a limiting factor due to a poor layout design. Personnel had three offices, and three laboratories to share. A shower was only available in the men's room which was problematic given the degree of field work involved in our daily operations. As-

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bestos floor tiles also covered most of our downstairs space. Through renovation and redesign we now have six offices, a library, a water chemistry laboratory, a histology laboratory, conference room, a second means of egress from upstairs, a teaching classroom, a microscope and digital analysis laboratory, a wet laboratory, a spawning room, a large bay area for holding large tanks, a kitchen, and upgraded restrooms with showers in both the men's and women's. All plumbing lines and fixtures were replaced, the entire building was rewired electrically, a fire alarm added, a new HVAC system and ductwork installed, new carpet and vinyl flooring installed, telephone system replaced, all rooms were repainted, a new back door installed, our aged seawater system replaced, seawater plumbing and drains provided to refurbished constant temperature rooms, and a new backup generator connected. We have just finished moving our equipment and supplies back in and look forward to getting back to work.



The left picture above is before the renovation in the balcony area of the marine lab. Clutter and dirty conditions are visible. Right, above is asbestos-covered pipes which are in dire need of repair, for safety as well as appearance.



The picture above, left, is the renovated Histology lab at the Marine facility. The right picture is the water chemistry lab after renovation. The wood cabinets and fume hoods were retrieved from the UGA campus in Athens by Bill Favalloro and brought to Skidaway for use in the renovation. New counter-tops were installed, new flooring, and new paint gives these labs better working conditions for the researchers and assistants.

**Welcome to ESD's
Newest Employees:**

Nancy Autry, administrative specialist I
Dana Kesler, administrative associate I
Manley Kiser, environmental safety specialist
Daphne Norris, administrative associate I
Regena Pope, administrative associate I



**U.S. Consumer Product Safety
Commission
Washington, DC 20207
February 2001**

Fire Safety for the Winter Holidays

General Suggestions for All Space Heaters

- Select a space heater with a guard around the flame area or the heating element.
- When selecting a heater, look for one that has been tested and certified by a nationally recognized testing laboratory.
- Buy a heater that is the correct size for the area you want to heat. The wrong size heater could produce more pollutants and may not be an efficient use of energy.
- Read and follow the manufacturer's operating instructions.
- Keep children and pets away from space heaters. Children should not be permitted to either adjust the controls or move the heater.
- Keep doors open to the rest of the house if you are using an unvented fuel-burning space heater. This helps to prevent pollutant build-up and promotes proper combustion. Even vented heaters require ventilation for proper combustion.
- Never leave a space heater on when you go to sleep or leave the area. For fuel-fired heaters, dangerous levels of carbon monoxide could accumulate or uncontrolled burning could cause a fire.
- Never use or store flammable liquids (such as gasoline) around a space heater. The flammable vapors can flow from one part of the room to another and be ignited by the open flame or by an electrical spark.

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- Mobile homes require specially designed heating equipment. Only electric or vented fuel-fired heaters should be used.
- Place heaters at least three feet away from objects such as bedding, furniture and drapes. Never use heaters to dry clothes or shoes. Do not place heaters where towels or other objects could fall on the heater and start a fire.
- Never use gasoline in a kerosene heater. Even very small quantities of gasoline in the heater tank can cause a fire. Kerosene should never be stored or carried in a container that has had gasoline because the residual gasoline is enough to increase the flammability of the kerosene.
- Only use 1-K kerosene in kerosene heaters. Kerosene should be purchased from a dealer who can certify that it is 1-K grade kerosene. The fact that kerosene is "water clear" does not ensure that it is 1-K, since both 1-K and 2-K can appear clear.
- Never fill the fuel tank of a kerosene heater beyond the full mark because as the fuel warms, it expands and could spill and cause a fire.
- Do not attempt to remove the fuel tank, or refuel the heater when it is operating or hot. The heater should not be moved while it is operating.
- Refuel heater out of doors.
- If flare-up or uncontrolled flaming occurs, do not attempt to move the heater. If your heater is equipped with a manual shut-off switch, activate the switch to turn off the heater. Do not attempt to extinguish a kerosene-heater fire with water or blankets. If activation of the shut-off switch does not extinguish the flame, leave the area and immediately call the fire department.
- Keep kerosene stored outside in a sealed blue container labeled "Kerosene."
- Light the match before you turn

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On the gas to the pilot. This avoids the risk of a flashback, which could occur if you allow gas to accumulate before you are ready to light the pilot.

- **If you smell gas, do not attempt to light the appliance.** Turn off all control and open a window or door and leave the area. Then call a gas service person.
- Remember that LP-gas (propane), unlike natural gas supplied from the gas utility distribution pipes, is heavier than air. If you believe a leak has occurred, go to a neighbor's phone to call your gas distributor or fire department. Do not operate any electrical switches or telephones in the building where the leak has occurred because a spark could cause an explosion.

Health Effects of Combustion Products

Carbon monoxide (CO) is a colorless, odorless gas that interferes with oxygen availability throughout the body. Exposed individuals and physicians may not recognize some symptoms as CO poisoning due to their similarity with viral illnesses such as influenza. Individuals with heart disease, chronic respiratory ailments, such as emphysema, and anemia, and also fetuses, infants, and young children have an increased susceptibility to CO poisoning. Low levels of CO can cause fatigue and chest pain in people with chronic heart disease. As CO exposures increase, symptoms progressively worsen through headaches, drowsiness, nausea, vomiting, confusion and disorientation. At very high CO exposures, loss of consciousness and death are possible.

Nitrogen dioxide can irritate the skin and the mucous membranes in the eyes, nose and throat. Depending upon the level and duration of exposure, respiratory effects range from slight irritation to burning and chest pain, coughing, and shortness of breath. In addition, repeated exposure to elevated levels of nitrogen dioxide may contribute to bronchitis.

■■■

Bye, Bye, Bye, Judy Gail Harper Dec. 24, 1946 – Oct. 20, 2005

Judy Harper, administrative associate at the Environmental Safety Division (ESD), passed away on October 20, 2005 from terminal liver disease. She worked at ESD's Hazardous Material Treatment Facility (HMTF) for twelve years. In February 2005, she retired from HMTF because of her deteriorating health. Judy donated her body to the Medical College of Georgia for research.

Judy lived a very full life and graced everyone around her with her free spirit and loving personality. She will be missed.



Judy is pictured with Larry King at the award's presentation of the Avery Great Results Achievement Award banquet in Los Angeles, CA for her participation in advocating hand gun control and education. She participated in the Million Mom March on Mother's Day of 2000. (Her youngest son, Jason, was acci-

dentally killed playing with a loaded hand gun in 1987. He was thirteen years old.) After Jason's death, Judy appeared in every media event, which invited her, to advocate gun safety and education.



Judy with husband, Bill Harper.



Judy and her son, Eddie Fuller.



Judy's grandsons (Ethan Fuller, right; Nathan Fuller, left).



An advocate of stronger gun safety laws, Judy Harper traveled to Washington, D.C., this spring to participate in the Million Mom March, where she met talk-show host and actress Rosie O'Donnell. Photo by Peter Frey

Judy's interview with *Columns* of 2000 for the 'Campus Closeup' article.

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 (706) 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. For a description of each video, including its length, go to our website: www.esd.uga.edu/info/pub/vlibrary.pdf.



Art Safety:

(A1) ___ Health Hazards and the Visual Arts

Chemical and Laboratory Safety:

(CL2) ___ Chemical Storage Hazards

(CL3) ___ Chemical Hazards

(CL4) ___ A Place for Everything: Chemical Storage in the Laboratory

(CL5) ___ Practicing Safe Science

(CL6) ___ The Keys to Laboratory Safety

(CL7) ___ Introduction to Reactive and Explosive Materials

(CL8) ___ Radionuclide Hazards

(CL9) ___ Science—Live to Tell About It

(CL10) ___ Glassware Washing Hazards

(CL11) ___ Centrifugation Hazards

(CL12) ___ Fume Hood Test and Training

(CL13) ___ Safety Showers and Eyewashes

(CL14) ___ All Washed Up

(CL15) ___ Safe Handling of Laboratory Glassware

(CL16) ___ Whose Job Is It Anyway?

(CL17) ___ Laboratory Fume Hood Safety

(CL18) ___ Assessing Risks of Toxic Chemicals

(CL19) ___ Flammables and Explosives

(CL20) ___ Mammalian Cell Culture Hazards

(CL21) ___ X-Ray Diffraction Hazards

(CL22) ___ Controlling Your Risks—HIV in the Research Laboratory

(CL23) ___ Working Safely with HIV in the Laboratory

(CL24) ___ Preventing Contamination

(CL25) ___ Get Your Checklist Ready—A Guide to Lab Safety Inspections

(CL26) ___ Laboratory Safety: Potential Hazards II

(CL27) ___ Ether Removal at Mercer University; Reactives/Explosives, AETC

(CL28) ___ Hazardous Materials

(CL29) ___ Lab Safety

(CL30) ___ Chemical Lecture & Demonstrations

(CL31) ___ It Only Takes a Second

(CL32) ___ Confined Spaces—Silent Killer

(CL33) ___ Virtual EPA Inspection of a College or University

(CL34) ___ Environmental Health: The Invisible Profession

Driver Safety:

(DS1) ___ Just Another Saturday Night

(DS2) ___ Breaking the Accident Chain of Events

(DS3) ___ Night Driving

Emergency Procedures:

(EP1) ___ Tornado—Nature’s Fury 2000

(EP2) ___ Chernobyl—Legacy of a Meltdown

(EP3) ___ Emergency Response

(EP4) ___ Preparing for a Crisis on Campus

(EP5) ___ An Orientation to Community Disaster Exercises

(EP6) ___ Bioterrorism and Mass Casualty Presentation; UGA; 10/31/01

Fire Safety:

(FS1) ___ Fire Safety in the Laboratory

(FS2) ___ Fire Escape—Getting Out Alive

(FS3) ___ How Fast It Burned!

(FS4) ___ Ready to Respond

Gas Cylinders:

(GC1) ___ Gas Cylinders—Welding, Cutting, and Brazing

(GC2) ___ Compressed Gases Can Be Dangerous; An Explosion Case History

(GC3) ___ Handling Compressed Gas Cylinders

(GC4) ___ Gas Cylinders—Overview

Right to Know/Hazard Communication:

(RTK1) ___ Cracking the Code

(RTK2) ___ Material Safety Data Sheets

(RTK3) ___ MSDS—Roadmap to Safety; Read that Label

(RTK4) ___ Your Right to Know

(RTK5) ___ Right to Know: Administrator’s and Trainer’s Guide

(RTK6) ___ Your Right to Know; MSDS—Roadmap to Safety

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