

# DEPARTMENT of ENVIRONMENTAL SAFETY



UNIVERSITY OF  
MARYLAND

## Annual Report 2007-2008





# What You May Not Know About DES



**Maureen Kotlas**

The staff of the Department of Environmental Safety (DES) work hard every day to keep the campus community and environment safe. Much of what we do at the University is subject to federal and state environmental health and safety regulations and other standards. Every day, thousands of people come to campus to work, study, conduct research or visit. The University has hundreds of research and teaching laboratories, thousands of square feet of classrooms and offices, a large support network for facilities' operations and maintenance, public assembly locations that host many types of events, a variety of student housing facilities and even a working farm. As you can imagine, this is quite a challenge!

We have an extremely dedicated staff who are experts in a variety of disciplines. Some of our programs and staff may be familiar to you while others work from behind the scenes. We address everything from asbestos to x-rays, climate change to hazardous wastes, fire prevention to biological agent containment, and diving safety to insurance claims. You may meet us in the laboratory conducting audits, at a basketball game providing fire safety services, by the campus creek taking water samples, in a training session for the shipping of infectious agents, or in a meeting to discuss the travel aboard program.

You may not know that DES also manages the workers' compensation program, responds to incidents, coordinates the campus sustainability report, issues hot works permits, investigates air quality concerns, provides monitoring for radiation workers, coordinates the Terps Fire Safety Challenge, and provides ideas for pollution prevention.

So, if you don't already know everything about us, we invite you to read through this annual report. We also have a fantastic web site that has even more great information and resources. Please take time to visit our virtual world at <http://www.essr.umd.edu> . It is our hope that you will learn something new about the environmental health, safety, risk management and sustainability programs on the campus.

Perhaps you will have ideas for us. Please let me know your thoughts.

Maureen Kotlas, Director  
Department of Environmental Safety  
[mkotlas@umd.edu](mailto:mkotlas@umd.edu)

# Our Mission

The Department of Environmental Safety (DES) provides technical, regulatory, and related management services to the University of Maryland community in order to achieve a safe and healthful campus environment in compliance with environmental and life safety regulations and standards. DES takes a leadership role in working with students, faculty, and staff to arrive at innovative, cost-effective solutions in response to their needs and to create a culture in which all share the responsibility for an environmentally safe campus.



Our Mission Is Achieved Through the Following Specific Services:

- Policy and standard development related to Environmental, Safety and Health regulatory matters with a focus on cost containment.
- University of Maryland representation and intermediary to MDE, EPA, NRC, NIH, MOSH, OSHA, CDC, DOE, DOT, USDA, FDA, OSFM, WSSC, other appropriate federal, state, and local regulatory agencies, neighboring communities, and professional and educational organizations.
- Technical assistance and evaluation to assess and communicate risks.
- Investigation of accidents, exposures, discharges, illness clusters and incidents.
- Authorizations, certifications and other in-house requirements for ORAA.
- Implementation of customized programs in biosafety, campus safety, environmental protection, industrial hygiene, radiation protection, fire protection and insurance.
- Training and education related to Environmental, Safety and Health programs.
- Management of insurance claims process
- Collection and maintenance of records regarding exposures, waste, compliance, permits and incidents
- Oversight of inspection and testing of campus safety equipment and systems.
- Emergency planning and response for the University.
- Departmental representation and support to relevant campus committees.

# Compliance Officers

The University of Maryland's Environmental, Safety and Health Management Policy (E,S&HMP) calls for the University to be a model of quality in environmental, safety and health practices. A critical linkage in the development of this level of quality is the College or Department Compliance Officer (CO).

The CO, by virtue of their special training and relationship to the Department of Environmental Safety, serves as the coordinator of those activities which support the E, S&HMP and the activities of the Policy and Operations Committees. The CO is appointed by the Dean, Chair or Department Head to represent the college or department in the coordination of environmental, safety and health activities. This includes the responsibility to notify the DES Director of instances, as perceived by the CO, that pose a hazard to the safety of faculty, staff, students and visitors, a threat to the environment and/or to university assets.

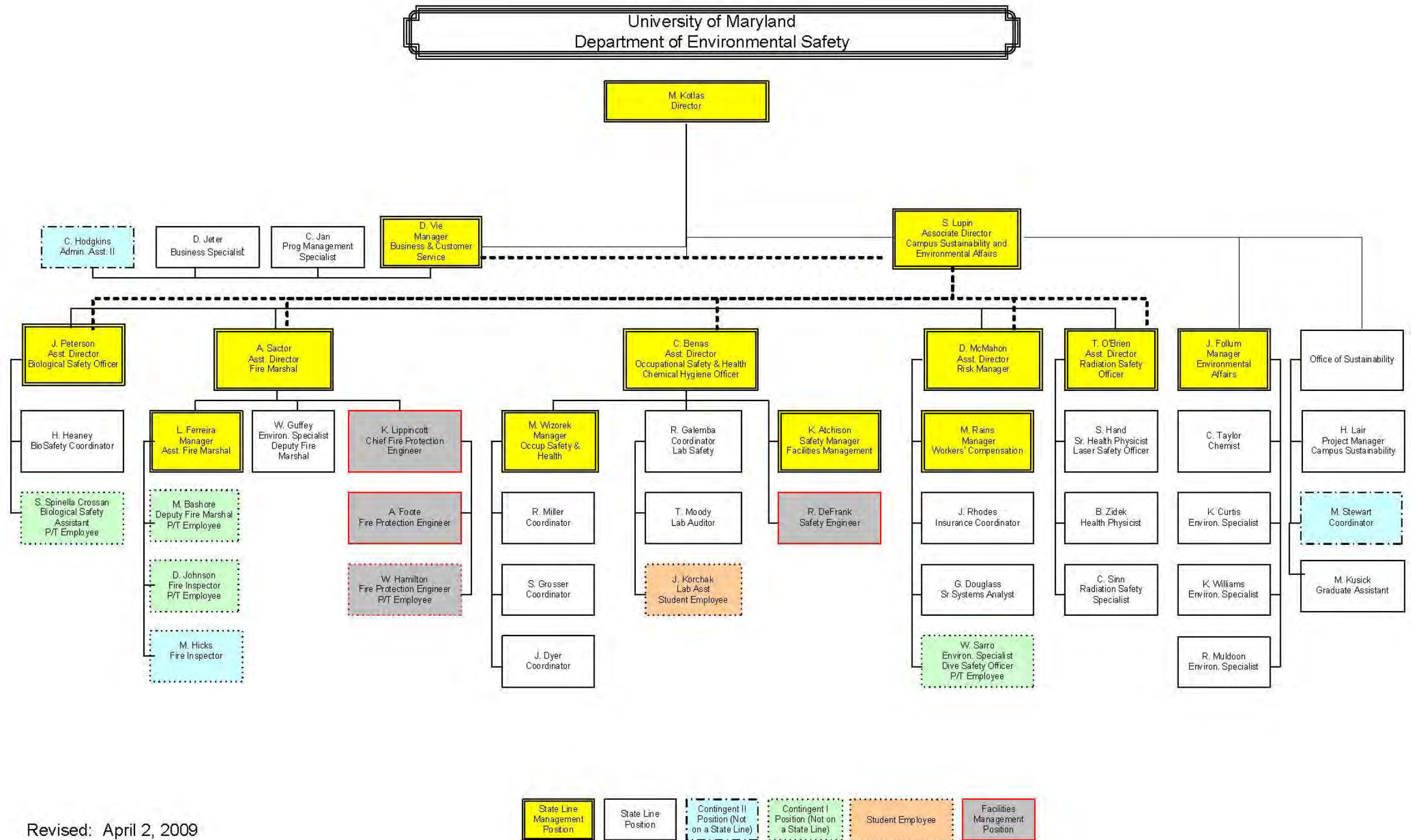
The number of COs per college or department is determined by the Dean, Chair or Department Head based on the size and complexity of the facility and operations. It may be necessary to assign CO duties to more than one individual based on criteria such as number of laboratories, number of faculty and staff or number of buildings that the department occupies.

Compliance Officer Duties Include:

- Attendance at scheduled CO training conducted by DES.
- Distribution of information between their department and DES.
- Serve as a contact person for DES initiatives
- Notify DES of unresolved compliance issues and situations involving potential safety hazards, exposures, accidents, injuries, illnesses, spills, releases or other regulatory or environmental issues.
- Work with DES to represent their college or department during regulatory agency interactions.
- Work with DES to investigate and resolve E,S&H issues in the CO's department/college.
- Request an annual meeting with the Dean, Chair or Department Head to discuss E,S&H initiatives in the organization.

A current list of Compliance Officers is available at <https://des.umd.edu/apps/compliance/list.cfm>.

# Creating a Safe and Sustainable Campus Environment

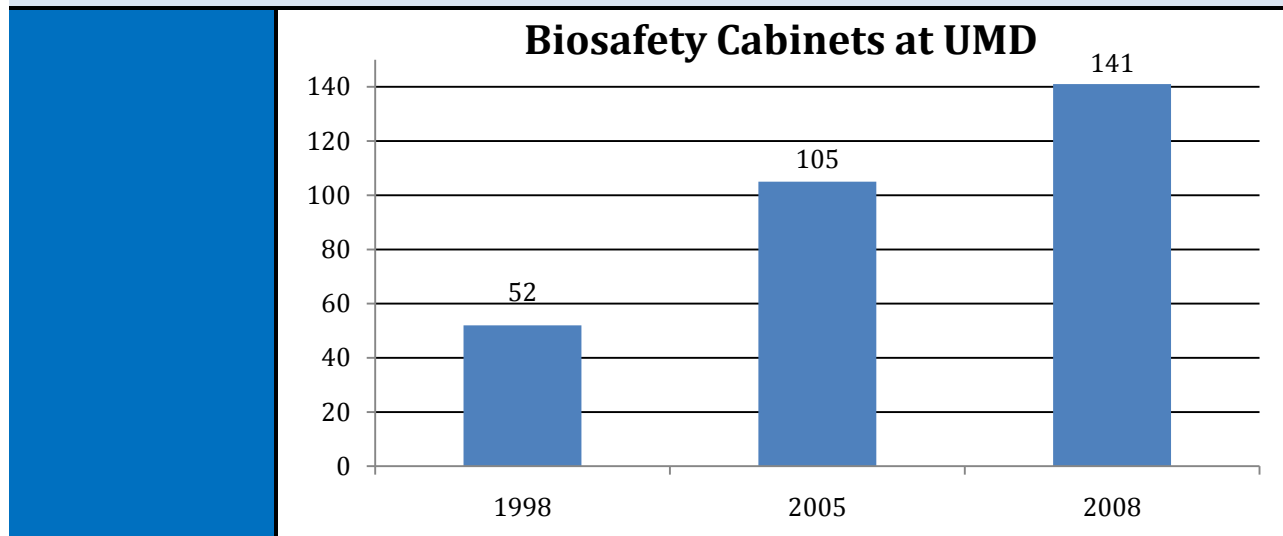


# Biosafety

The 2007-2008 fiscal year was an exciting one for the Biological Safety office. Our primary mission remains to promote safe laboratory practices when working with biological agents, compliance with federal, state, and local research regulations and guidelines. Our accomplishments this year included:

- Provided assistance to researchers moving into the Bioscience Research Building, including coordination of the decontamination and recertification of their biosafety cabinets and performing audits to promote safe working conditions in the new labs
- Designed and implemented online training programs on the *NIH Guidelines*, Refresher Shipping for Infectious Agents, and Bloodborne Pathogens for Non-Laboratory Personnel
- Updated UM Biological Safety Manual according to the 5<sup>th</sup> edition of CDC's *Biosafety in Microbiological and Biomedical Laboratories*
- Registered new BL-3 laboratory with the federal select agent program, including development of Biosafety, Biosecurity and Incident Response Plans, and preparation for joint inspection by USDA and CDC
- Organized DES' informational booth at Maryland Day

An example of the growth of our BIOSAFETY program can be seen in the chart below, which depicts the growth in the number of on-campus biosafety cabinets in the certification program managed by our office.



Our goals for FY 2008-2009 include implementing a paperless system of tracking research registrations and approved letters; and developing a new online BBP training program for researchers to replace the one currently leased from another institution, saving \$3000 annually from the biosafety budget.



## Biological Safety Services

Autoclave Procedures  
Autoclave Safety  
Bloodborne Pathogens  
Containment Laboratory Design  
Infectious Agents  
Recombinant DNA  
Select Agents  
Sharps (Use & Disposal)  
Shipping Infectious Agents

## Staff

- Janet Peterson, Assistant Director & Biological Safety Officer
- Hallie Heaney, Biosafety Coordinator
- Stacey Spinella Crossan, Assistant to the Director



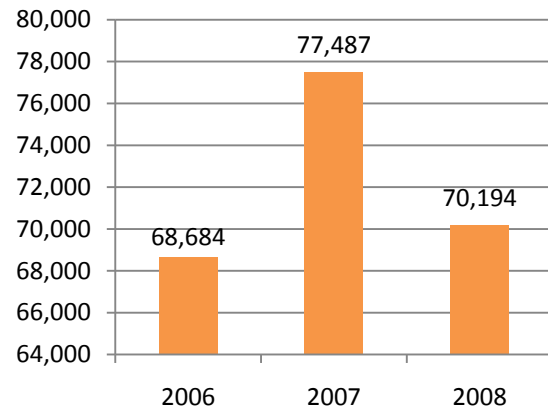
Hallie Heaney checks signage during a laboratory biosafety audit while Janet Peterson and intern, Megan Morgan, discuss biosafety cabinet certification.

# Environmental Affairs

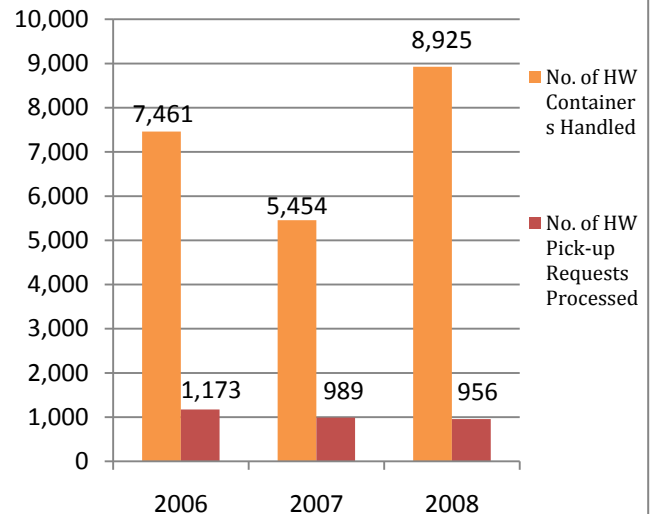
Environmental Affairs (EA) primary objective has been, as in previous years, regulatory environmental compliance. The main programs involve the management of hazardous, radioactive, and biological-medical waste. This includes:

- the operation of a Part B permitted hazardous waste storage facility;
- storm water permitting, including a federal National Pollution Discharge Elimination System Permit (NPDES);
- oil storage tank management;
- air quality permitting and a Title V Air Permit;
- numerous training programs offered both on-line and in the classroom;
- performed environmental inspections and audits; and
- responded to chemical and emergency incidents.

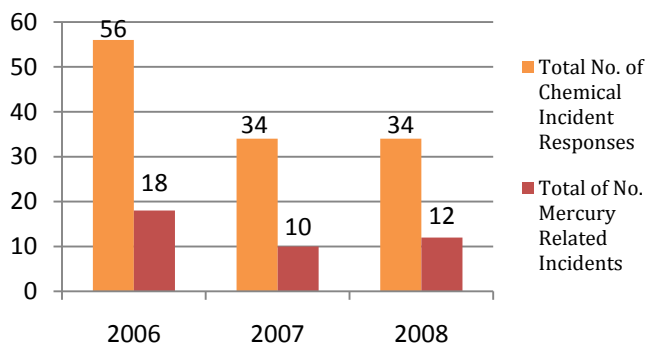
**Pounds of Hazardous Waste Managed**



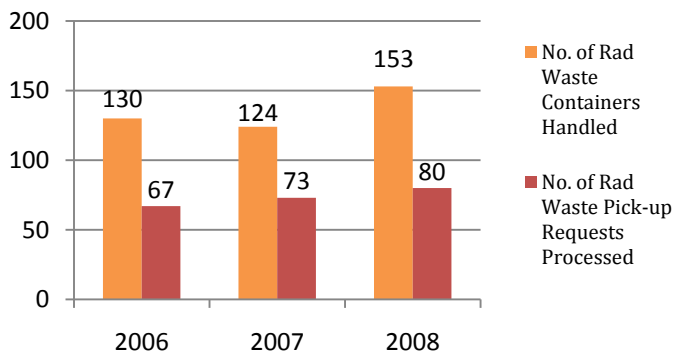
**Hazardous Waste**



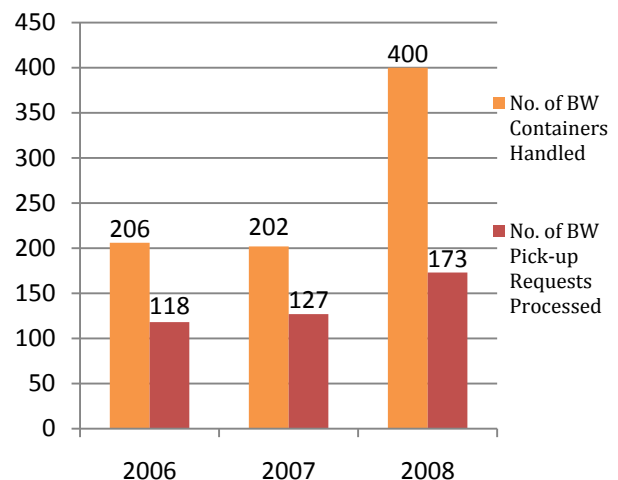
**Environmental Affairs  
Chemical Incident Responses**



**Radioactive Waste**



**Biological Waste**





## Environmental Affairs Services

Air Quality Permitting  
Emergency Spill Response  
Environmental Site Assessment  
Facility Planning – Real Estate Support  
Hazardous and Controlled Waste Management  
Laboratory Cleanouts  
Oil Management  
Pollution Prevention Management  
Stormwater Permitting and Monitoring  
Wastewater Permitting

### Staff:

- Scott Lupin, Associate Director
- John Follum, Manager - Environmental Affairs
- Kevin Curtis, Environmental Health and Safety Specialist
- Ryan Muldoon, Environmental Health Safety Specialist
- Cleveland Taylor, Environmental Health Safety Specialist
- Keith Williams, Environmental Health and Safety Specialist



Acid explosion in a fume hood is cleaned up by Kevin Curtis.  
Keith Williams depressurize spray paint cans for disposal.

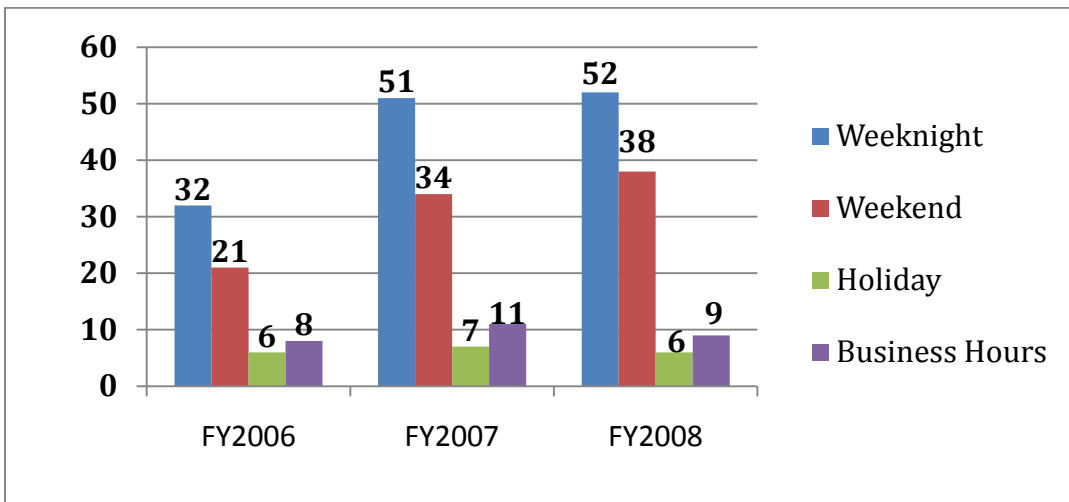
# Fire Marshal

A significant amount of service provided by the Fire Marshal's Office is performed outside of regular business hours. Public assembly events, fire drills, construction inspections, and emergency incidents require work at night, on weekends, and during holidays.

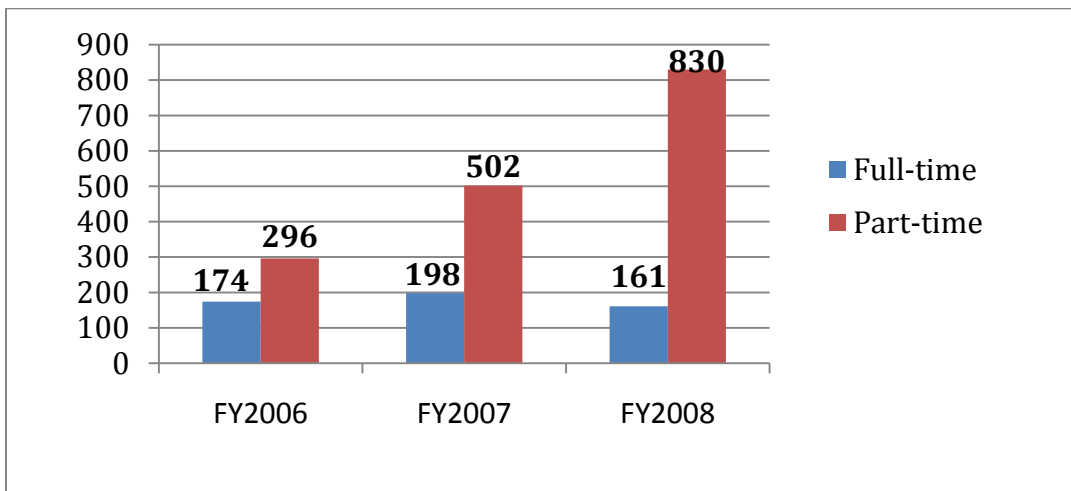
Service details at public assembly events in particular, accounts for a large percentage of the off-hour activity. Inspection of public assembly facilities is a top priority. Fire Marshals are on duty at major events including men's and women's basketball games, football games, commencements, and concerts. The number of events requiring fire marshal services is increasing due to such factors as the growing popularity of display pyrotechnics and open flames, and the use of Comcast Center for High School graduations and other events.

Staffing for events is challenging and utilizes both full-time and part-time personnel. Qualified, experienced part-time personnel are used extensively.

## Number of Public Assembly Details by Time of Activity



## Public Assembly Work Hours by Employee Category



## Fire Marshal's Office Services

Construction Plan Review & Inspection	Hot Works Permits
Consultation and Risk Assessment	Laboratory Fire Safety
Emergency Management	Open Fire Permits
Fire Investigation	Public Assembly
Fire & Life Safety Inspections	Resident Hall Fire Safety
Fire Safety Education	Emergency Response
Greek Facilities Safety	

## Staff:

- Alan Sactor, Assistant Director – Fire Marshal
- Micheal Bashore, Fire Protection Engineer/DFM
- Luisa Ferreira, Assistant Fire Marshal
- Andrew Foote, Fire Protection Engineer
- William Guffey, Deputy Fire Marshal
- Steven L. Hess, Deputy Fire Marshal
- Matthew A. Hicks, Deputy Fire Marshal
- Derrick Johnson, Fire Inspector
- Keith Lippincott, Chief Fire Protection Engineer

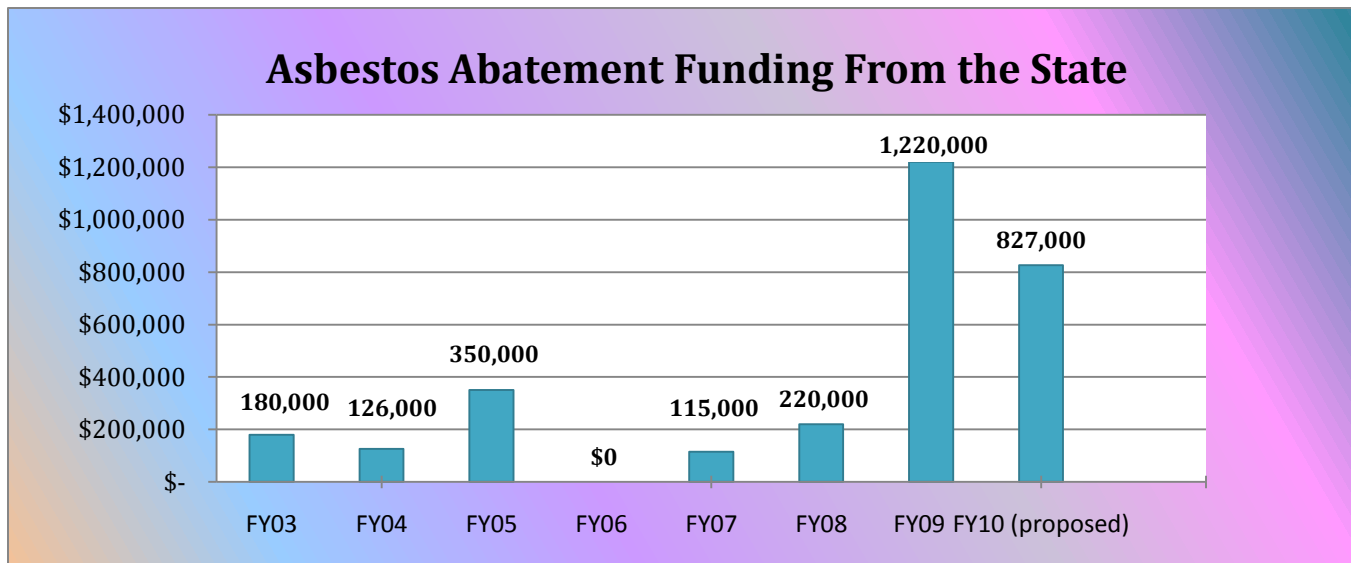


Luisa Ferreira coordinated The Terp Fire Safety Challenge 2008 to raise student awareness of fire and life safety. She observes while the Hyattsville Volunteer Fire Department performs vehicle extrication.



# Occupational Safety and Health

Occupational Safety & Health (OS&H) professionals in the Department of Environmental Safety coordinate the development of programs in response to safety, health and environmental regulations and accepted standards and practices. These programs are implemented at the University to lessen the risks associated with hazardous environments, occupations, and materials.



- A major program improvement this year was implementation of a new Internet-based Hazard Communication (Right-to-Know) system that stores chemical inventories through an Internet application, and provides “one-click” access to Material Safety Data Sheets. The University community can also use this system to search, display and print safety data for over 3.5 million hazardous materials including most workplace and household chemical products.
- Laboratory Safety is an increased emphasis within the OS&H unit. A new employee was hired whose primary task is conducting audits of research and academic laboratory facilities. These audits are intended to reduce the potential for injuries in laboratories and promote compliance with safety and environmental regulations.
- The Department of Homeland Security (DHS) enacted new regulations in 2007 that require chemical facilities, including the University, to determine the presence and quantity of 323 chemicals that could be used by terrorists. An on-line system was developed to collect data from laboratories, and OS&H staff surveyed other locations throughout the campus where chemicals are present. All required information was collected prior to the DHS deadline
- The Indoor Air Quality (IAQ) Investigation Program required an increased level of OS&H staff effort this year. In FY07, twenty-nine IAQ complaints were reported. In FY08, fifty-five complaints were received. IAQ investigative efforts are not specifically required by regulation. As a result of the increasing budget restrictions OS&H has had to consider charging for some or all costs associated with this service in the future to provide adequate resources to regulated programs.
- OS&H effectively lobbied the Maryland Department of the Environment (MDE) for a greater percentage of the annual \$2 million allocation for removal of asbestos building materials in state buildings. For FY09 and FY10, more than half of the available state funding was committed to remove asbestos materials from buildings on campus. Major asbestos removal projects are occurring in many buildings including the Cole, Preinkert, H.J. Patterson, Physics, Journalism and Benjamin Buildings.

## Occupational Safety and Health Services

Accident/Incident Response  
Asbestos Management  
Autoclaves/Sterilizers'  
State Inspection  
Chemical and Lab Safety  
Confined Spaces  
Construction Safety  
Design Review  
Drinking Water Testing  
Electrical Safety  
Ergonomics  
Fall Protection

Hazard Communication  
Hearing Conservation  
Incident Response  
Indoor Air Quality  
Lead Management  
Lockout- Tagout  
Machine Safeguarding  
Material Safety Data Sheets  
Noise Control  
Personal Protective Equipment  
Powered Industrial Trucks  
Respiratory Protection  
Trenching and Shoring

### Staff:

- Christopher Benas, Assistant Director
- Kevin Atchison, Manager OS & H Facilities Management
- Theresa Clay, Laboratory Compliance Inspector
- Robert DeFrank, Environmental Safety Engineer (Code Services)
- Jacques Dyer, Safety Coordinator
- Robert Galemba, Laboratory Safety Coordinator
- Saul Grosser, Safety Coordinator
- Richard Miller, Coordinator
- Martin Wizorek, Manager

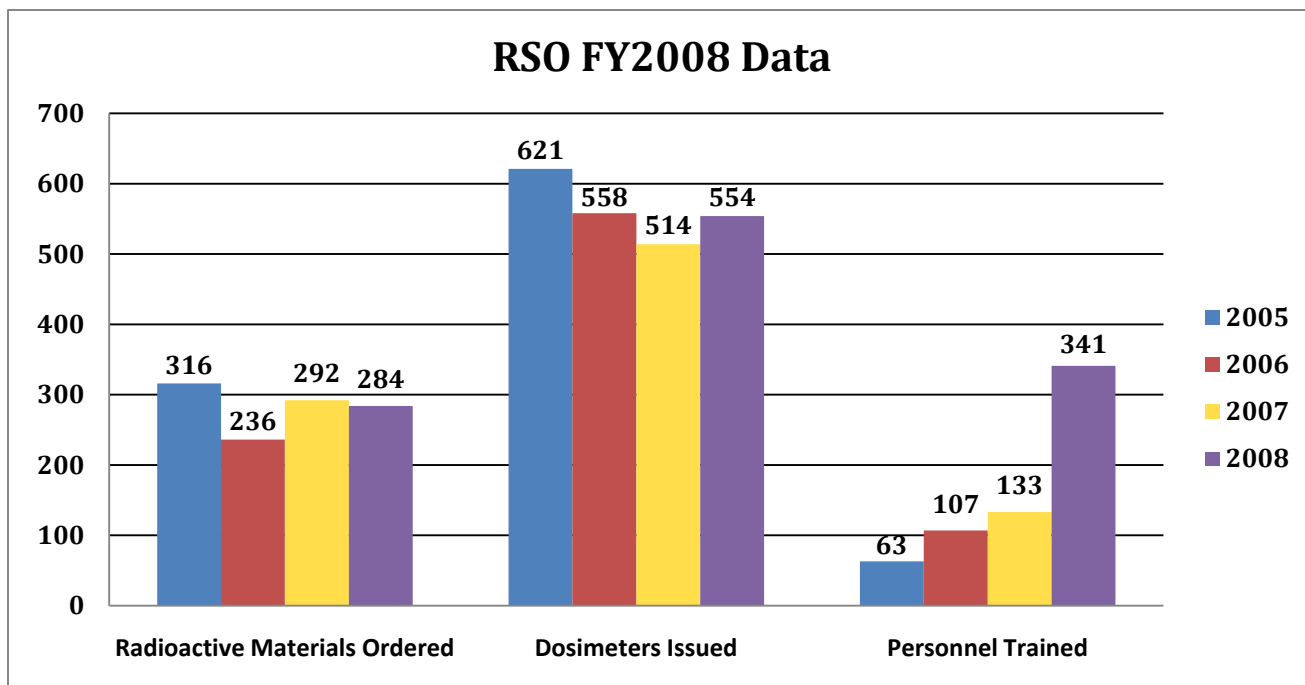


Theresa Clay conducts daily laboratory inspections and reviews deficiencies with lab worker.

# Radiation Safety

The Radiation Safety Program added two new staff positions: a Radiation Safety Specialist and an Assistant Director/ Radiation Safety Office (RSO) to lead the program. The RSO works closely with the University Radiation Safety Committee to maintain a radiation safety program that ensures a safe working environment for all campus personnel in addition to regulatory compliance with state, federal and local regulations.

Oversight of the radioactive material and radiation producing devices is conducted by the Maryland Department of the Environment's (MDE) Radiological Health Division and the United States Nuclear Regulatory Commission (NRC). These entities inspect the University Radiation Safety program on an annual basis.



Radioactive material and radiation producing devices continue to be powerful research tools used by a variety of departments on campus and at satellite campuses within the broader University System of Maryland. Numerous lasers, including the hazardous class III and class IV lasers, are also widely used.

The objective of the Radiation Safety Program is to keep radiation exposures to all individuals As Low As Reasonably Achievable (ALARA). To this end, the Radiation Safety Office conducts training for personnel using radioactive materials and radiation producing devices; provides dosimetry to monitor individual exposures; performs quarterly audits of radioactive material laboratories, and assists in the disposal of unneeded radioactive sources as well as radioactive waste.

Figure 1 above shows selected program statistics for FY2005-2008.



## **Radiation Safety Services**

Dosimetry-Radiation Producing Equipment

Dosimetry-Radiation Producing Materials

Laser Safety

Particle Accelerators Radiation Producing Equipment

Radiation Producing Materials

X-ray Devices

## **Staff:**

- Thomas O'Brien, Assistant Director
- Steven Hand, Senior Radiation Safety Officer
- Christopher Sinn, Health Physicist
- Bryan Zidek, Health Physicist



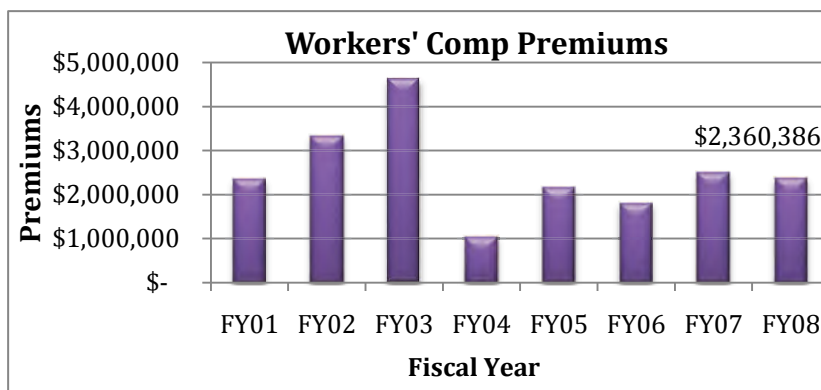
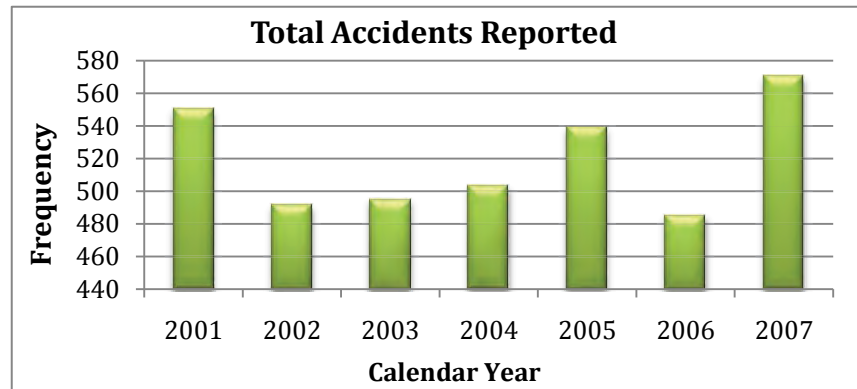
Christopher Sinn performing the quarterly radioactive laboratory audit to check compliance with UMCP Radioactive Materials License.

# Risk Management and Communications

Risk Management & Communications is responsible for administration of the University's property, liability, auto, and workers' compensation insurance policies and various other risk management functions. These other risk management functions include, but are not limited to, scientific diving, student activity risk issues, serving as the primary source of environmental health and safety information to the campus community, and coordinating environmental health and safety training to faculty and staff.

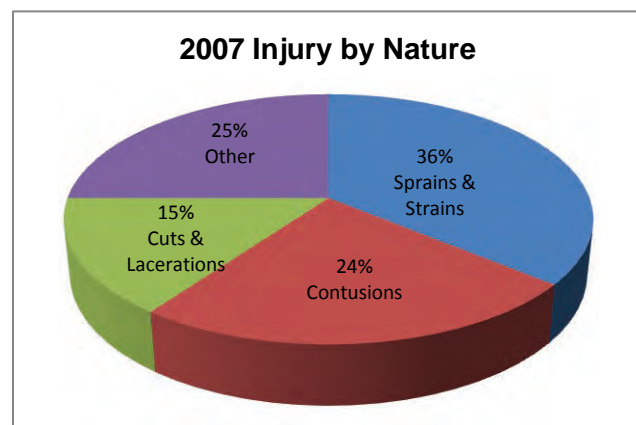
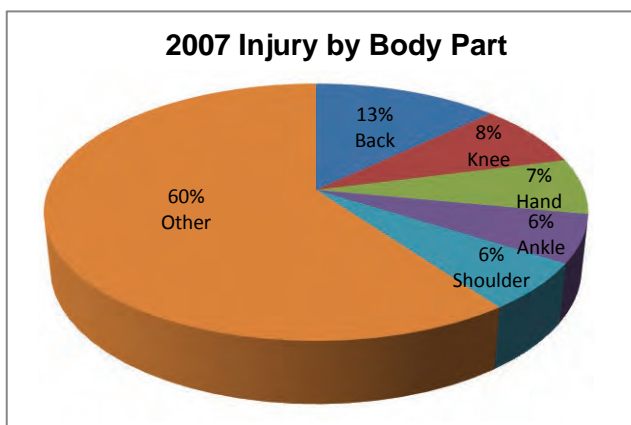
## Workers' Compensation

During calendar year 2007 there were 570 Accidents Reported. Of those 570 accidents reported, 227 were OSHA recordable accidents. The top 3 recordable injuries by type continue to be sprains and strains, contusions and lacerations.



Fiscal year premium assessments are based upon the total of all disbursements during the two years prior. For example, the FY08 premium is based upon the total of all disbursements during FY06 for State agency claims, regardless of the accident date.

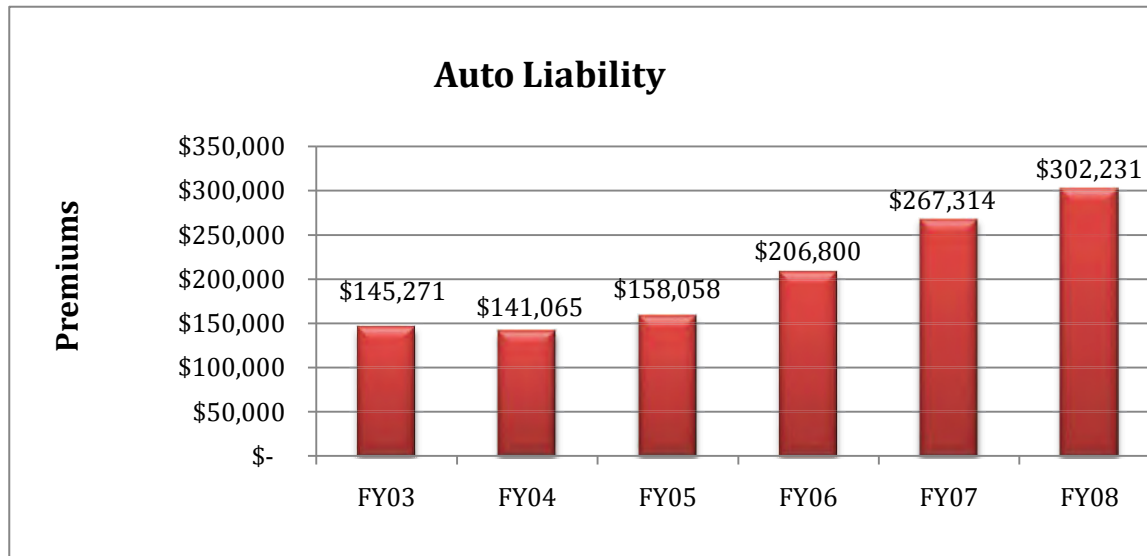
From 2005 through 2007, back injuries continued to be the most frequent injury experienced by UM employees. On average, back injuries account for 62% of lost time injuries and are the most costly of all injuries. Sprains and strains, followed by contusions and cuts and lacerations, consistently account for 75% of all injuries by nature.



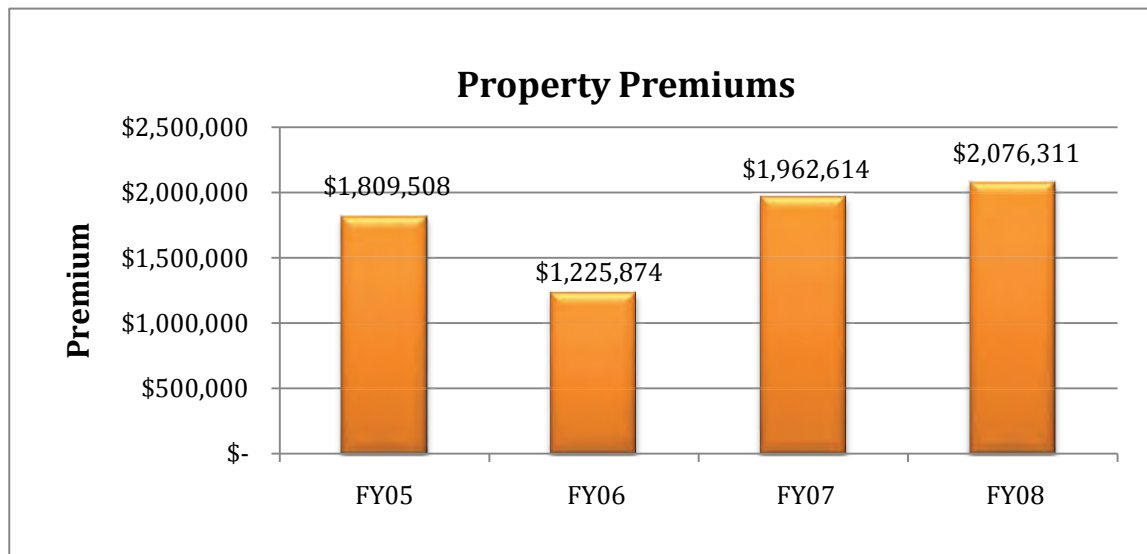
# Risk Management and Communications

## Insurance

The FY08 premium for auto liability was \$302,231 for approximately 1270 vehicles in the University fleet. This is a premium of approximately \$240 per vehicle. There were 319 total (vehicle/property/tort) claims reported during FY08. Of that total, 266 (83%) were vehicle claims and 55% of the total vehicle accidents reported were UM at-fault accidents.



During FY08, there were 26 property claims. Though few, at least 50% of the claims were for water damage/flooding caused by broken pipes, clogged drains, and activated sprinklers. This type of claim continues to be problematic on campus and has a direct affect on the University's property insurance premium.

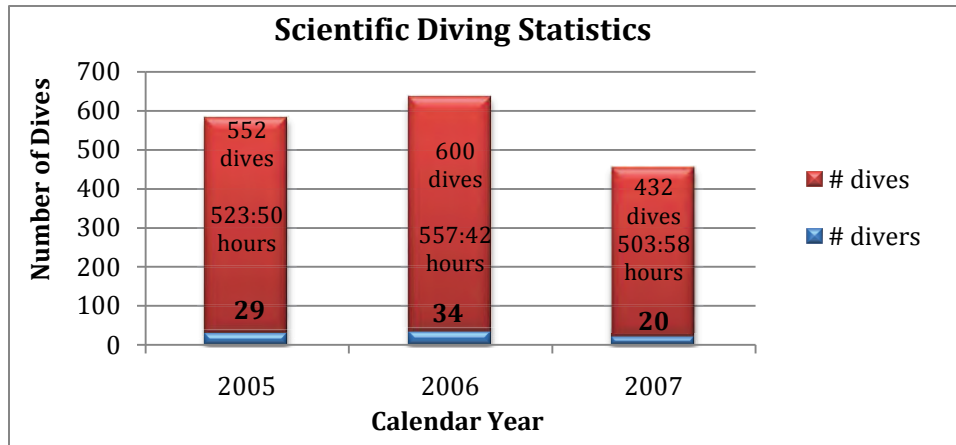




# Risk Management and Communications

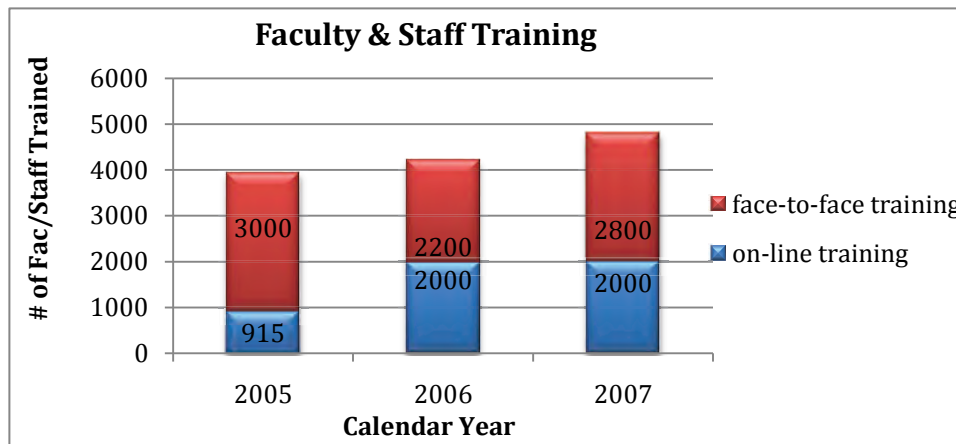
## Scientific Diving

Though the scientific diving program has been steadily growing, in FY08 budget issues had a significant impact on the departments and projects that are central to the UM Dive Program.



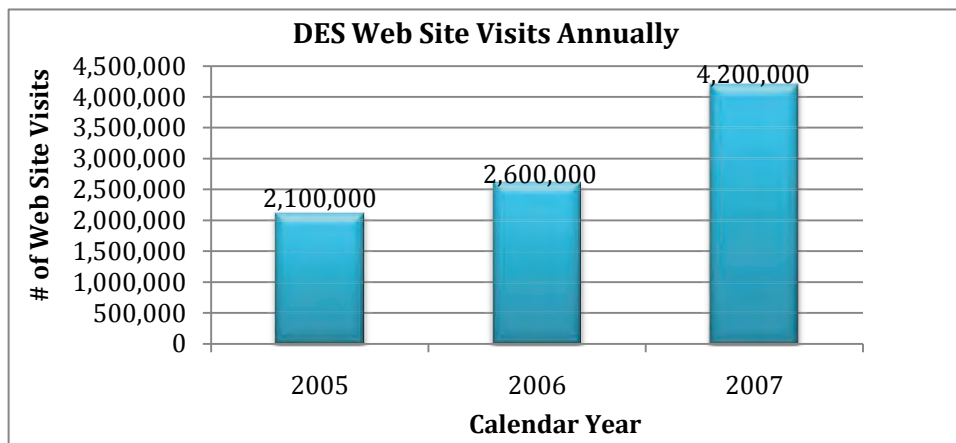
## Training

In 2005, DES offered 16 on-line training courses. In 2006, DES added 5 more on-line courses raising the total to 21 on-line courses offered. Face-to-face participants increased in 2007.



## Communications

The Department of Environmental Safety is the primary source of environmental, safety, and health information for the campus community. In 2007, over 4,200,000 DES web pages were visited annually, a substantial increase in web page visits compared to previous years.



# Creating a Safe and Sustainable Campus Environment

## **Risk Management and Communications Services**

Diving Safety

Environment, Safety and Health Management Policy

Fifteen Passenger Vans

Insurance

Public Education

Tort Claims

Training Records

Training Schedules

Travel Safety

Vehicle Accidents

Workers' Compensation

### **Staff:**

- Donna McMahon, Assistant Director
- Marlene Rains, Manager of Workers' Compensation
- Gregory Douglas, Systems Analyst
- Jeysha Rhodes, Insurance Coordinator
- Bill Sarro, Diving Safety Officer



Marlene Rains, Manager Workers' Compensation processed approximately 500 claims in 2008.



In early 2007, under the umbrella of the Environmental Stewardship Committee, Office of the Provost, individuals within the Department of Environmental Safety collected campus sustainability success stories and developed the first comprehensive University of Maryland Sustainability Report. The 28-page report captures efforts to reduce environmental impacts from University operations and promote sustainability across the core activities of research, teaching, and service.

July 2007, the Office of Sustainability was established to coordinate the University's participation in the American College and University Presidents Climate Commitment and to further advance sustainability efforts campus-wide. The Office serves the campus in its work to integrate sustainability across University policies, operations, curriculum, research, service, and individual practices.

Late 2007, the Office began to support the Climate Action Plan Work Group, a diverse group of more than 50 faculty, staff, and students charged by the Vice President of Administrative Affairs with developing a plan for how the campus will reduce its greenhouse gas emissions. Office staff developed meeting agendas and summarized Work Group discussions, convened subcommittee meetings, and assisted the Work Group in developing recommendations. The Office also supported the Center for Integrative Environmental Research (CIER) in finalizing the first inventory of campus greenhouse gas emissions.

In addition to this climate-related work, the Office hosted a sustainability speaker series for the campus community each semester, gave sustainability presentations across campus, conducted campus outreach as part of annual events such as the First Look Fair, Earth Day and Maryland Day, and responded to external surveys about campus sustainability efforts. Staff responded to student queries about sustainability, developed sustainability guidelines for the Department of Environmental Safety, conducted sustainability "audits" for select departments, and developed a website focused on University of Maryland sustainability efforts. For more information see [www.sustainability.umd.edu](http://www.sustainability.umd.edu).

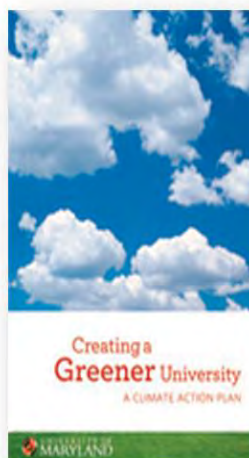
# Creating a Safe and Sustainable Campus Environment

## Sustainability Services

Greenhouse gas measurement and reporting  
Climate Action Plan development  
Partnership development  
Campus sustainability presentations  
Departmental sustainability audits  
Subject matter advising – both student projects and departmental initiatives  
Campus sustainability reporting (internally and externally)  
Sustainability metrics

## Staff:

- Scott Lupin, Associate Director
- Heather Lair, Project Manager
- Mark Stewart, Coordinator



Mark Stewart helps Maryland Day visitors calculate their carbon footprint.





**Creating a Safe and Sustainable  
Campus Environment**

**Biological Safety**

**Environmental Affairs**

**Fire Marshal's Office**

**Occupational Health and Safety**

**Radiation Safety**

**Risk Management and Communication**

**Sustainability**

**DEPARTMENT OF ENVIRONMENTAL SAFETY**

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