



UNIVERSITY OF
MARYLAND

**ENVIRONMENTAL
SAFETY**
Division of
Administrative Affairs

3115 Chesapeake Bldg. 338
College Park MD. 20742
<http://www.des.umd.edu>

Biosafety

Env. Affairs

Fire Marshal

Occ. Safety & Health

Radiation Safety

Risk Mgmt. & Comm.

Sustainability

ANNUAL REPORT

Fiscal Year 2008-2009



Interim Director's Message



The Department of Environmental Safety (DES) provides a wide range of services that support campus research and operations. Our dedicated and highly trained staff include experts in several distinct areas including fire, radiation, biological and occupational safety; risk management; environmental management and sustainability. All of these areas work with complex and ever-changing regulations and we strive to collaborate with our many campus partners in the development of appropriate plans and training.

The global economic crisis presented many challenges to the University including budget reductions that affected DES like most campus departments. In spite of these reductions, DES continued to improve its existing services while expanding its scope to respond to new requirements and growth in University research. As a department, we are always seeking ways to become more efficient through the use of new technology, collaboration, and staff synergies.

Our accomplishments during the past year are many, but I am very pleased with the successful launch of our laboratory auditing program and the establishment of the new University Center for Laboratory Safety within the University Foundation. Through this effort, we placed a renewed emphasis on laboratory safety and implemented a successful training program focused on laboratory managers. We were also very much engaged in chemical and biological security, an area of significant national attention and regulation.

DES continued to support the University's many public events that bring thousands of people to campus and our existing programs to make the campus safe. We have provided greater outreach to the campus through a number of means, including the addition of several new online training programs. Our web pages received more than 4.5 million visits last year, a new record.

The University's sustainability initiative also witnessed major growth through the efforts of the Office of Sustainability and the many people in our community who have a passion for reducing our greenhouse gas emissions and expanding sustainable behaviors. This dedication led to the completion of the University's first greenhouse gas inventory and the near completion of a Climate Action Plan that will serve as a blueprint toward our campus' goal of carbon neutrality.

Thank you for taking time to read through our 2008-2009 Annual Report. We hope you find the information useful. We welcome your comments and ask that you help us meet the collective responsibility of keeping our University safe and sustainable.

Scott Lupin
Interim Director
Department of Environmental Safety

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.

Staff and Services

Biological Safety

Staff

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

Services

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

Environmental Affairs

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

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

Fire Marshal's Office

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

Services

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

Occupational Safety and Health Services

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

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

Radiation Safety

Staff

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

Services

Dosimetry-Radiation Producing Equipment
Dosimetry-Radiation Producing Materials
Laser Safety
Particle Accelerators Radiation Producing Equipment
Radiation Producing Materials
X-ray Device

Risk Management and Communications

Staff

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

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

Sustainability

Staff

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

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

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:

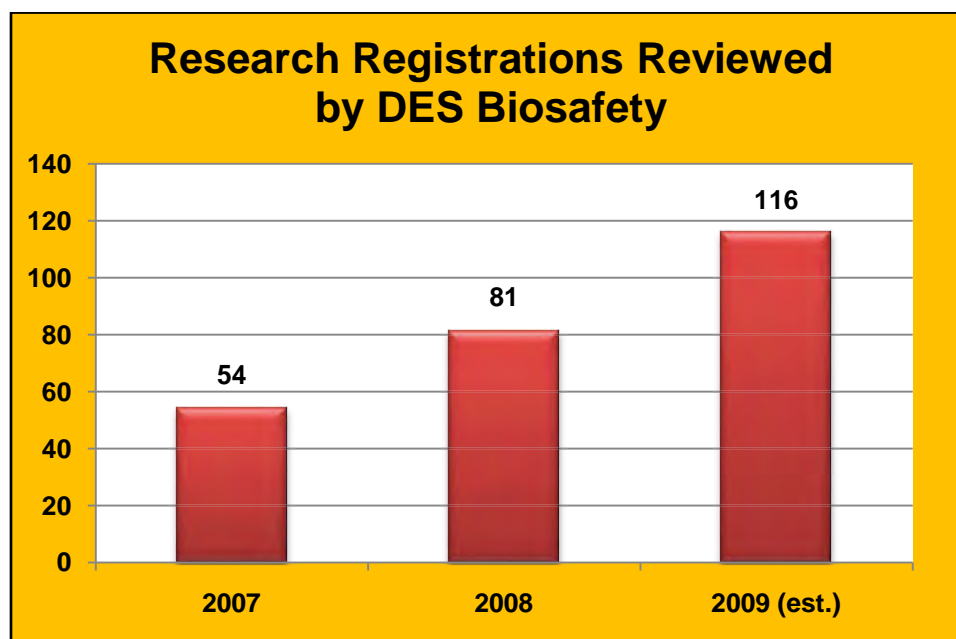
- Attendance at scheduled CO training conducted by DES.
- Distribution of information between their department and DES.
- Serve as a contact person for DES initiatives
- Notify DES of unresolved compliance issues and situations involving potential safety hazards, exposures, accidents, injuries, illnesses, 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>.

Biosafety

Biosafety is the discipline addressing the safe handling and containment of hazardous biological materials and infectious microorganisms. The Biosafety Program's primary mission is to promote safe laboratory practices when working with biological agents and compliance with federal, state, and local research regulations and guidelines while supporting UM faculty who conduct infectious disease research.

To demonstrate the ongoing growth in biological research at the University of Maryland, the chart below depicts the increase in number of biological research registrations processed over the past 3 years. The illustration depicts a 50% increase in submitted registrations between 2007 and 2008; an estimated 43% increase for 2009.



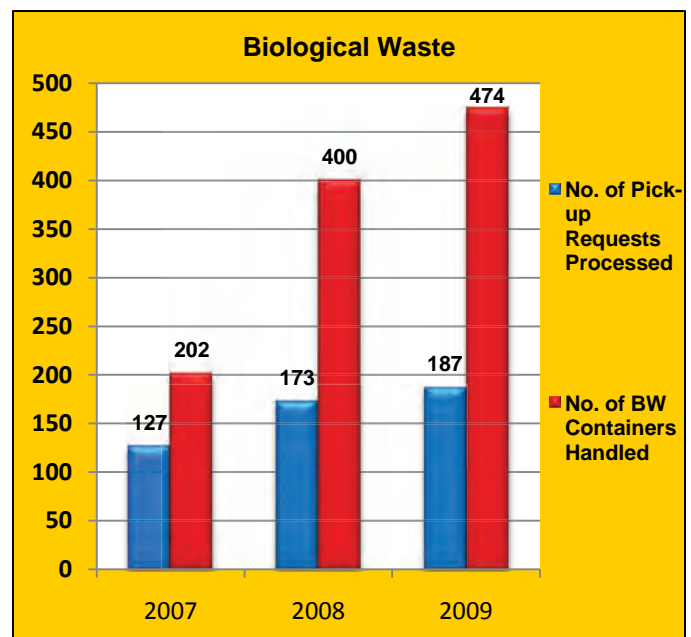
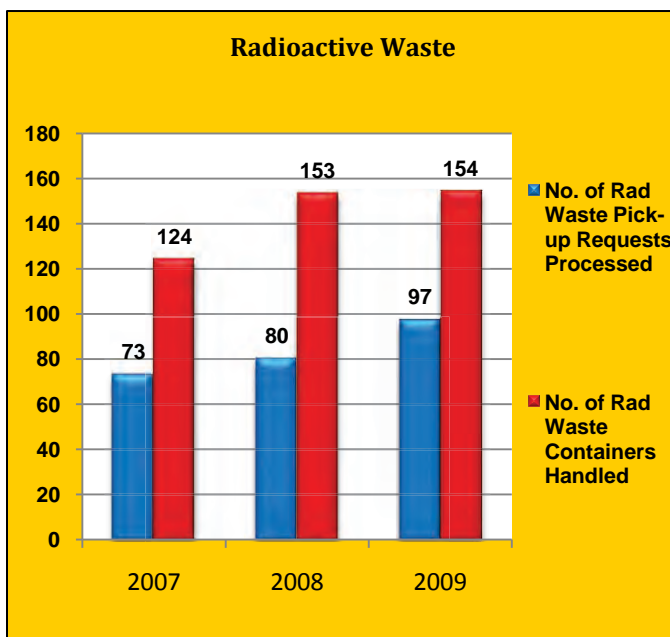
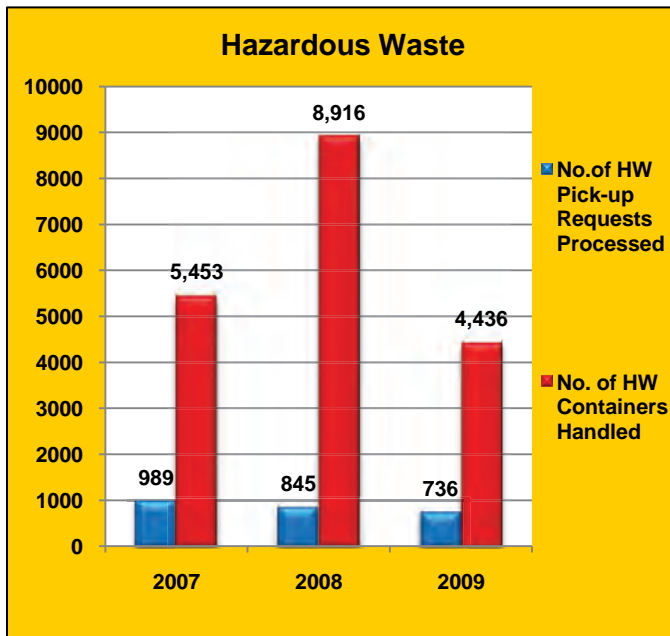
Despite budget cuts in FY09, the Biosafety Office has been able to achieve many of its goals. Selected program highlights from FY09:

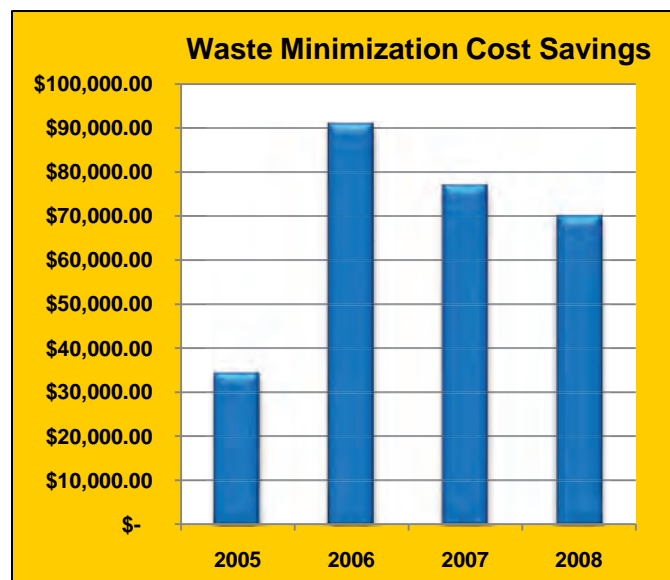
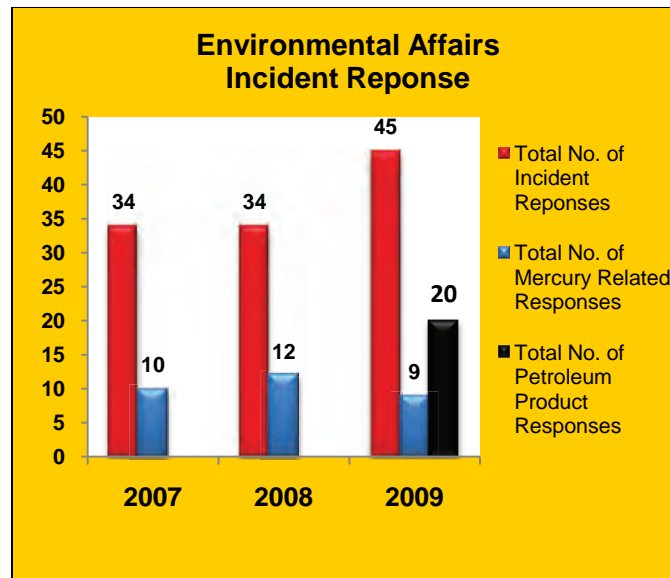
- In response to the emergence of the novel H1N1 pandemic influenza virus in April 2009, training and education on preventing H1N1 influenza was provided to various university groups
- Attended FEMA-sponsored emergency response and incident command training courses
- Keeping with the University's strategic goals in sustainability, the biosafety program implemented a paperless system of tracking research registrations and approvals
- Developed new online bloodborne pathogens training for researchers saving \$3000 annually by replacing training previously leased from another university

Our goals for FY 2010 include implementing an electronic system for biosafety lab audits; participating in a university-wide emergency response drill; and keeping abreast of new developments by attending national meetings where biosafety and biosecurity guidelines and regulations are discussed and developed.

Environmental Affairs

The Environmental Affairs (EA) section of DES has been in operation since 1997 and is responsible for facilitating compliance with state and federal environmental regulations and the management of environmental risk through the development of policies and procedures, permitting, training, internal monitoring, studies and consultation. EA oversees campus-wide permits regarding hazardous waste, air quality (Title V), surface water quality and storm water (NPDES), and fuel storage. EA also manages the underground/above-ground storage tank program, the collection and processing of hazardous, radioactive, and biohazard waste from the campus and the operation of the Environmental Services Facility. EA also supports construction, demolition and real estate initiatives through studies and the provision of support services. The following metrics summarize some of the key activities during the period:



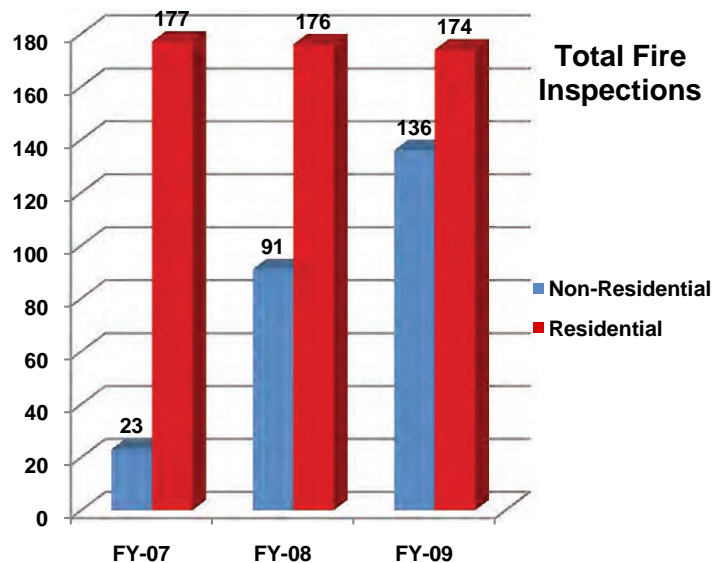


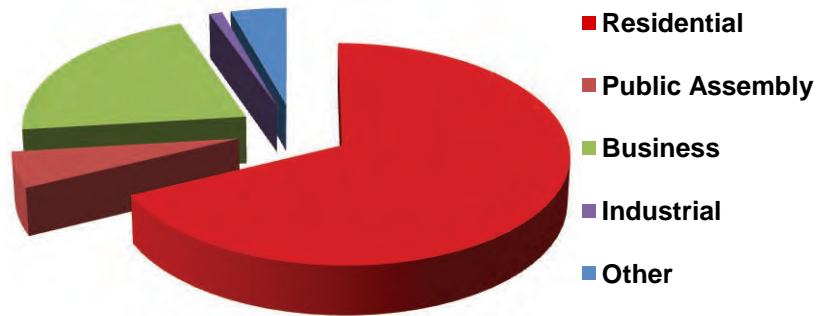
The environmental regulations, associated permits, and campus-developed plans are very prescriptive. Training the many people involved in the University's compliance efforts is a key element of EA's programs. The following statistics reveal the extent of this effort during the past year:

- 183 people have completed the SPCC training.
- 481 people have taken Hazardous waste generator training.
- 81 people have completed Universal Waste Training.
- 123 people trained as new lab researchers.
- 91 people trained as radioactive waste generators.
- 54 people trained in hazardous material shipping and handling.

Fire Marshal's Office

Fire inspections are an important function of the Fire Marshal's Office. The campus is essentially a small city with different types of occupancies including residential, public assembly, business, mercantile, and industrial. The number of required fire inspections increases as new buildings are constructed, the University expands in other locations, more attention is given to existing buildings, and services are provided to other USM institutions. Fire inspections are conducted at the Universities at Shady Grove, state-wide Maryland Fire and Rescue Institute training centers, UM research farm locations around the State, and two University of Maryland University College campuses. Residential facilities are the first priority and account for the majority of fire inspections. The Fire Marshal's Office inspects all UM residential facilities including University-owned and privately owned fraternities and sororities; and University Courtyard, South Campus Commons, Graduate Hills, and Graduate Gardens apartment complexes. In order to accommodate the increasing workload, a new self-supported Deputy Fire Marshal position was added during FY-09.





Fire Inspections by Occupancy Type FY07 - FY09



Fire Marshall Alan Sactor observe as Senior Deputy Fire Marshal Bill Guffey instructs a laboratory teaching assistant how to properly use a fire extinguisher during a comprehensive safety seminar.

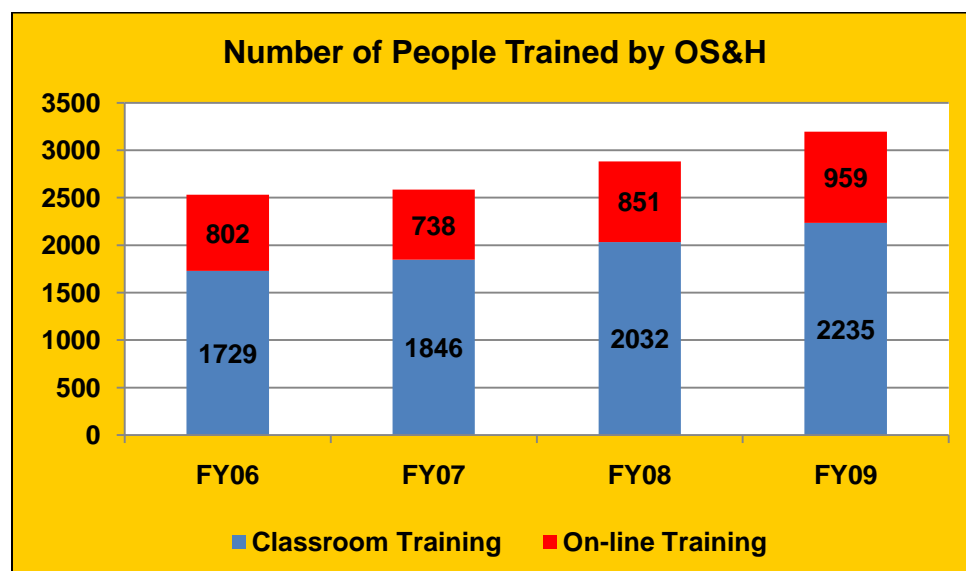
Occupational Safety & Health

Occupational Safety & Health (OS&H) professionals in the Department of Environmental Safety (DES) coordinate the development of institutional safety and health programs in response to regulations and accepted standards and practices. Programs such as Hearing Conservation, Hazard Communication and Indoor Air Quality Investigations are implemented at the University to lessen the risk associated with hazardous chemicals, occupations and environments.

The academic and research auditing program is running at full speed. A total of 598 laboratories and associated support spaces were inspected for compliance with safety & environmental management regulations and policies. Any deficiencies that were identified were reported to laboratory personnel, department heads, and Compliance Officers for correction. The ultimate goal for the audit program is improvement of safety in the laboratory and responsible use and disposal of chemical, radioactive and infectious materials.

To further the department's Laboratory Safety Initiatives budget, DES established the University Center for Laboratory Safety Foundation. A laboratory facility for hands-on training was donated to the Center/DES by the Department of Chemistry & Biochemistry. The facility first practical use is for demonstrations that are part of a pilot training program to enhance the abilities and expertise of laboratory managers. The Center is actively soliciting funds to maintain this training program, develop others, and will be the origination point for laboratory safety-related grant applications.

OS&H continues to provide and coordinate safety training programs for the UM Community. Training is frequently required by the Occupational Safety & Health Administration (OSHA) for work known to be potentially hazardous. Training classes that are more frequently needed are scheduled monthly at the Chesapeake Building, and OS&H trainers frequently are "on-the-road" bringing essential information to shops and departments at College Park and off-campus facilities throughout the State. Many training programs are provided on-line as a convenience for the campus, and additional on-line programs are being developed.



OS&H was involved with the University's response planning for pandemic influenza by ensuring that employees responsible for patient care and transport were properly fitted to disposable respirators to guard against inhalation of infectious microorganisms. Over 300 employees at the University now participate in the Respiratory Protection Program. Training and respirator fit-testing are both required annually.



Robert Galemba explaining the health effects associated with mold during a recent Health Fair



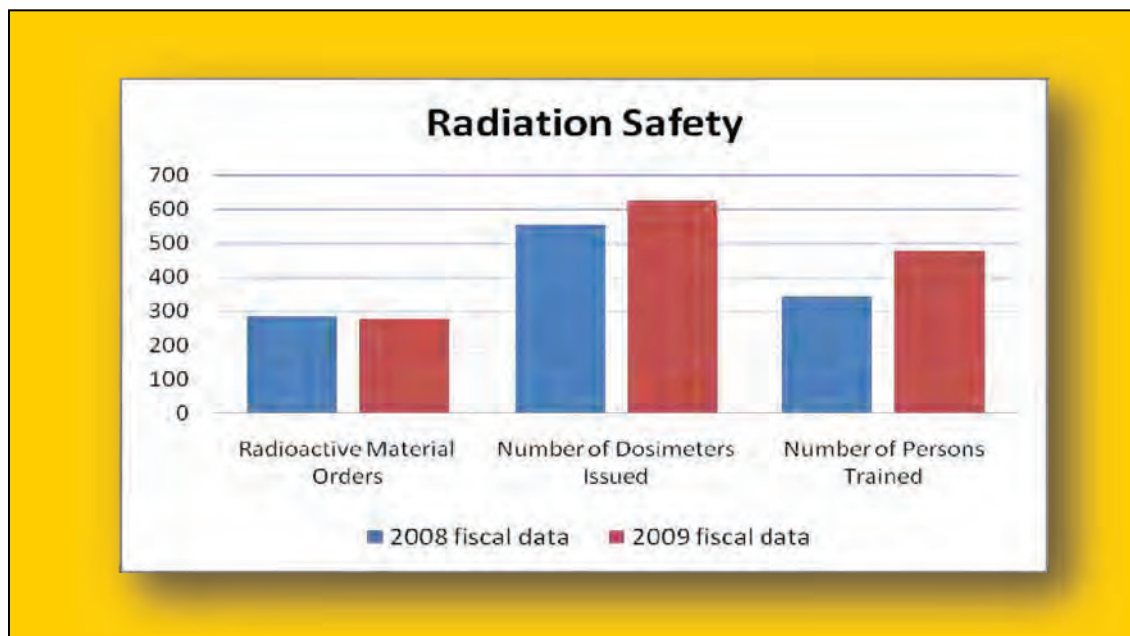
Richard Miller performing a disposable respirator fit-test

Radiation Safety

This fiscal year Radiation Safety restarted the Laser Safety Program, used a team approach to uniquely renew both the Material Broad Scope License and Irradiator License for Possession and Use of Radioactive Material, and provided increased Health Physics presence, guidance, monitoring and services to the University of Maryland Training Reactor (UMTR) operations. Radiation Safety received high marks from the NRC inspectors for both its effort and team approach to providing Health Physics services to the UMTR program.

The Radiation Safety Officer and staff continue to work closely with the University Radiation Safety Committee to maintain a program that ensures a safe working environment for all campus personnel and compliance with state, federal and local regulations. The Maryland Department of the Environment's (MDE) Radiological Health Division and the United States Nuclear Regulatory Commission (NRC) continue as the regulatory bodies issuing licenses to the campus and inspecting the University Radiation Safety program on an annual basis.

Radioactive material and ionizing radiation producing devices continue to be powerful research tools used both on campus and at satellite campuses within the broader University System of Maryland. Hazardous class 3 and 4 lasers continue to be used in sciences from engineering to physics and chemistry. New experiments in laboratories and Radiation facilities provide unique opportunities for faculty, staff and students to interact with Health Physicists to keep radiation exposure and doses As Low As Reasonably Achievable (ALARA).



Important interactions with University persons involve training personnel in the safe use of radioactive material, radiation producing devices and non-ionizing devices such as lasers; providing dosimetry to monitor individual exposures; performing quarterly audits of radioactive material laboratories, directing and managing the disposal of unneeded radioactive sources and providing Health Physics oversight in the disposal of radioactive waste.

Key Personnel Training by Radiation Safety in 2009

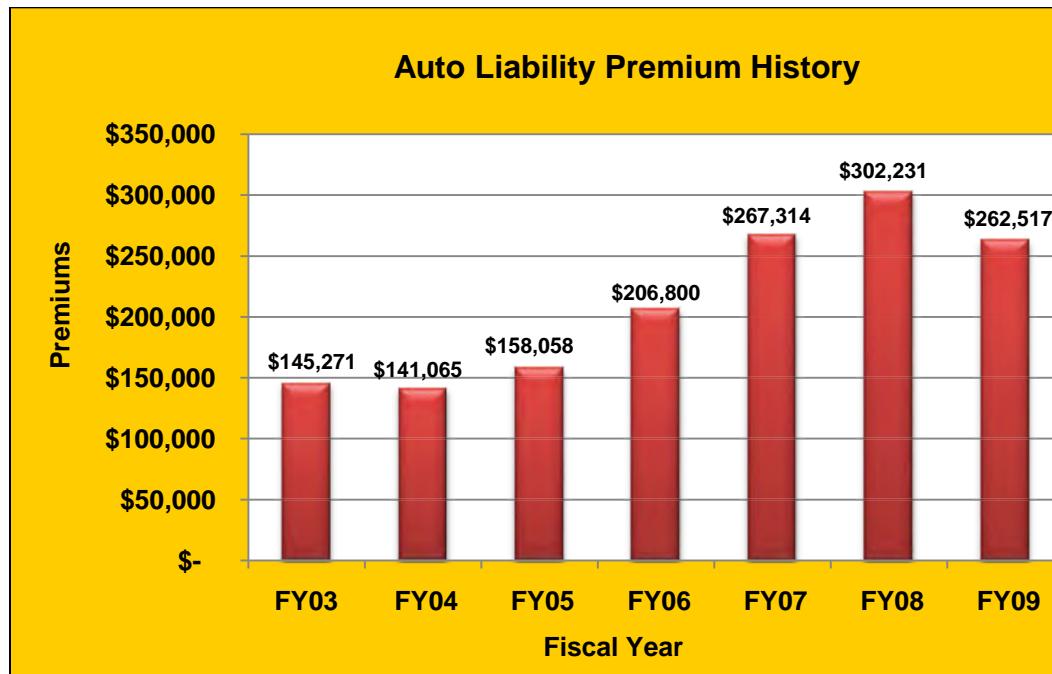
- **Reactor Health Physics Training for UMTR personnel**
- **PG County Fire Fighters**
- **Advanced Experiments in Physics Classes**
- **X-ray safety for diffraction and spectrometers**
- **Compliance Officer Radiation Safety Training**
- **Radioactive Material Authorized and Supervised Users**
- **Teaching Assistants Annual Fall Orientation in Radiation Safety**
- **New Researcher training for faculty, staff, and students**
- **Laser Safety Training**
- **11th Grade High School Girls Summer Physics Program**



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

Risk Management and Communications

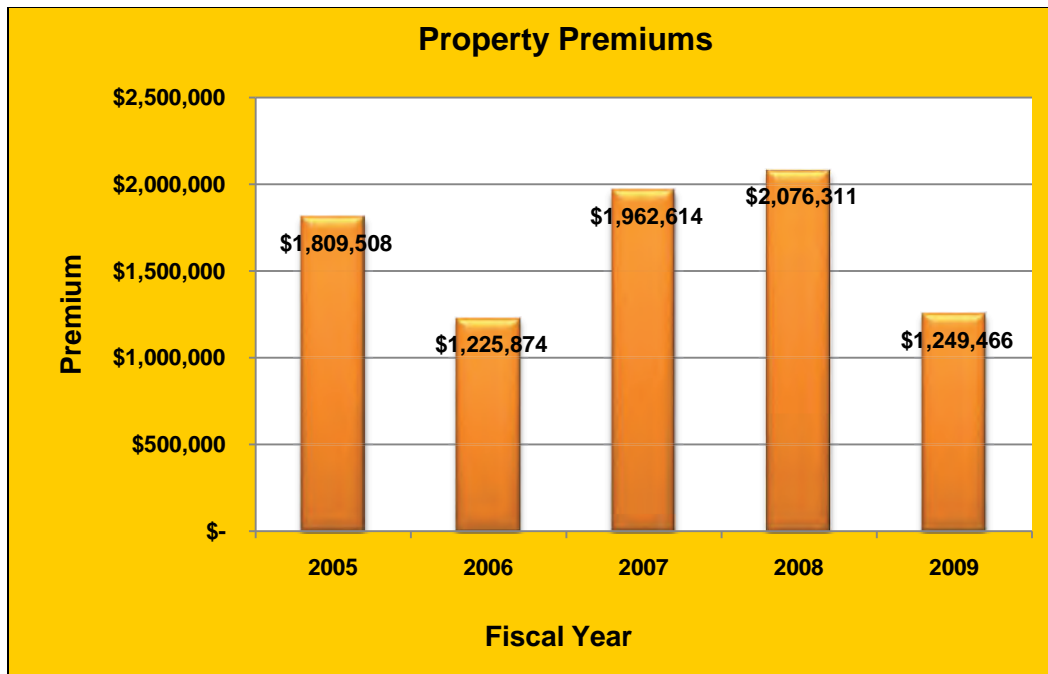
Risk Management and Communications is responsible for administration of the University's property, liability, auto, and workers' compensation insurance policies and various other risk management functions. These other risk management functions include, but are not limited to, scientific diving, student 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.



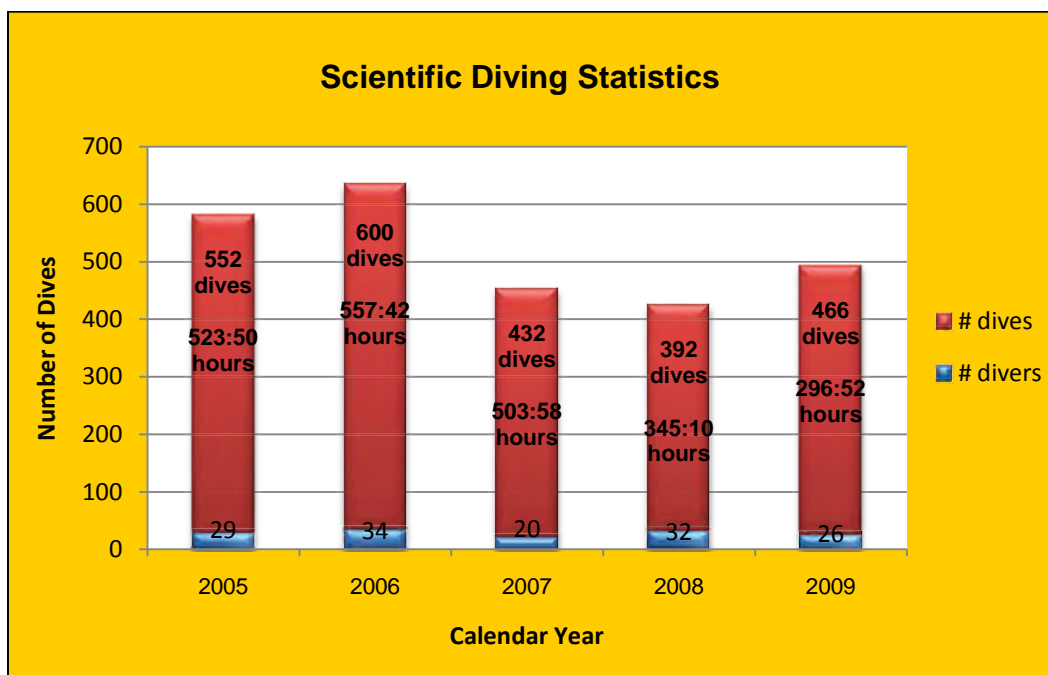
Currently, there are approximately 1366 vehicles in the UM fleet. The FY09 premium for auto liability is \$262,517, which generates a premium of approximately \$190 per vehicle. Auto accidents and collisions represent a significant loss exposure to the University. During FY09, there were 249 total claims (vehicle/property/tort) reported. Of that total, 192 (77%) were vehicle claims and 59% of the total vehicle accidents reported were UM at-fault accidents.

Tort Claims/General Liability

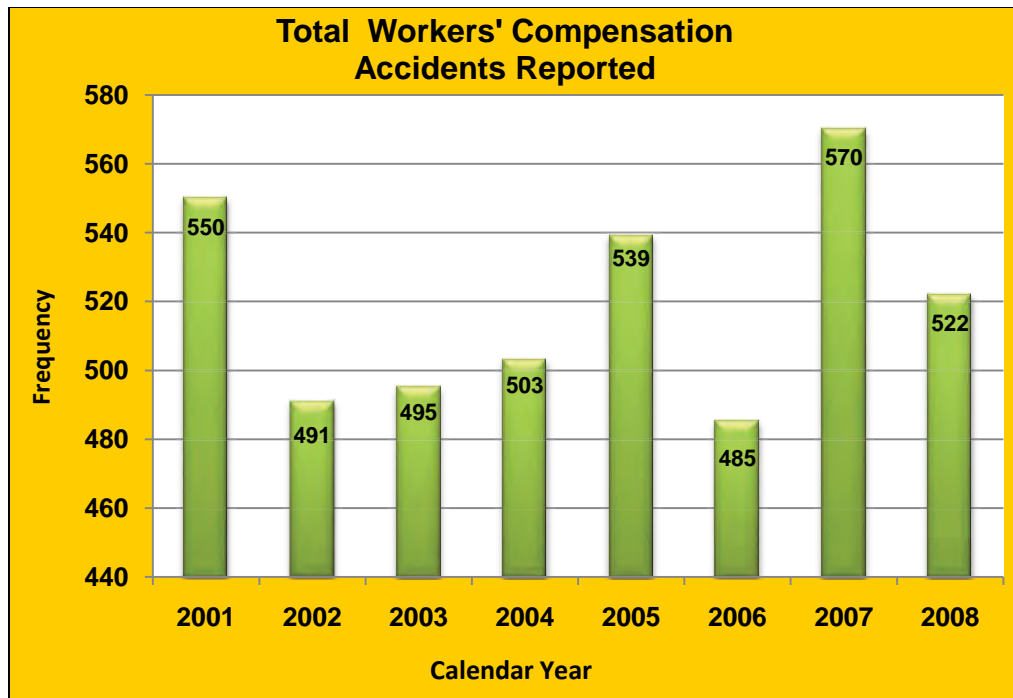
During FY09 there were 35 tort claims presented to the State. Of those, only 13 were deemed compensable claims by the State and totaled \$6,378. Of the 13 tort claims, 38% were caused by operations and maintenance work being conducted on the campus.



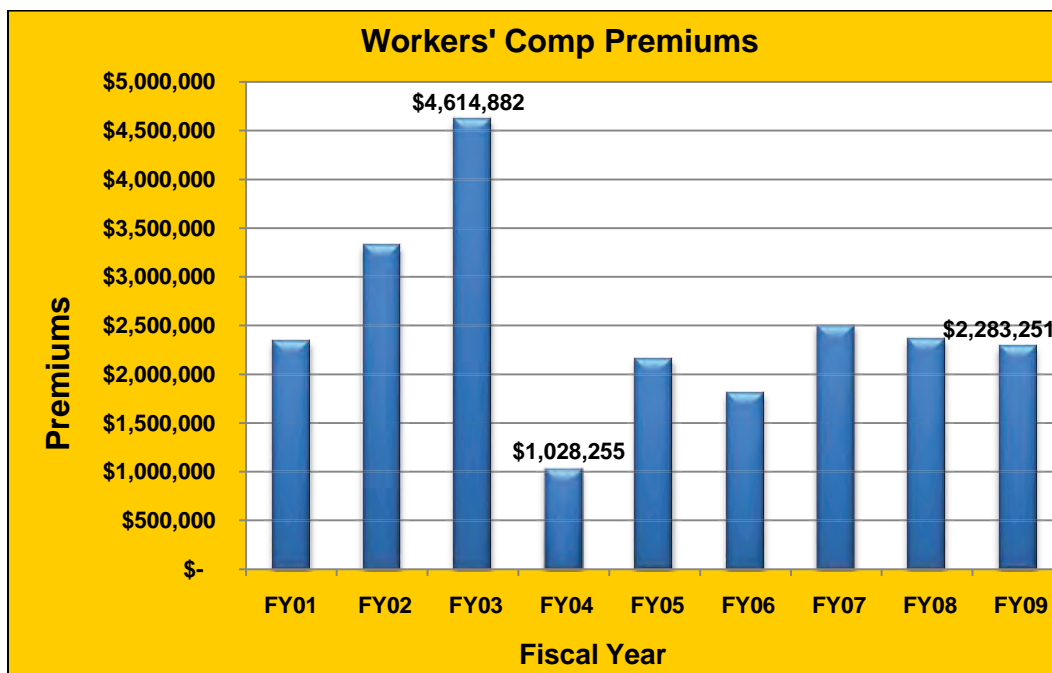
During FY09 there were 20 property claims, 50% of the claims were for water damage/flooding caused by broken pipes, clogged drains, activated sprinklers, etc. This type of claim continues to be problematic on campus and has a direct effect on the University's property insurance premium.



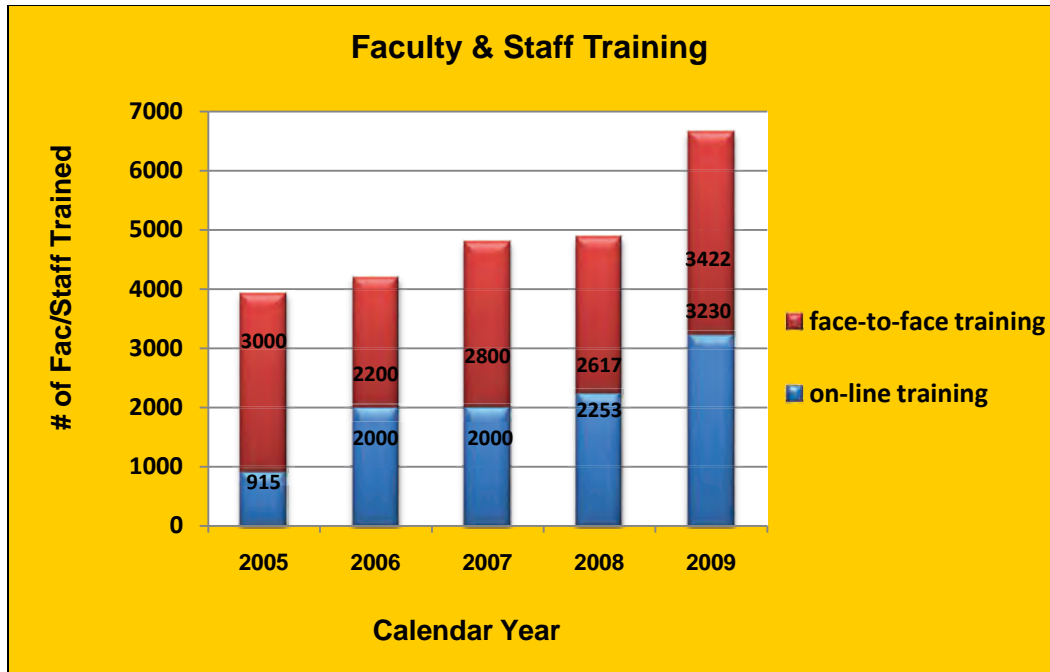
Though the scientific diving program has been steadily growing, in 2007 and 2008 budget issues had a significant impact on the departments/projects central to the UM Dive Program. 2009 saw a slight increase in the number of divers and dives.



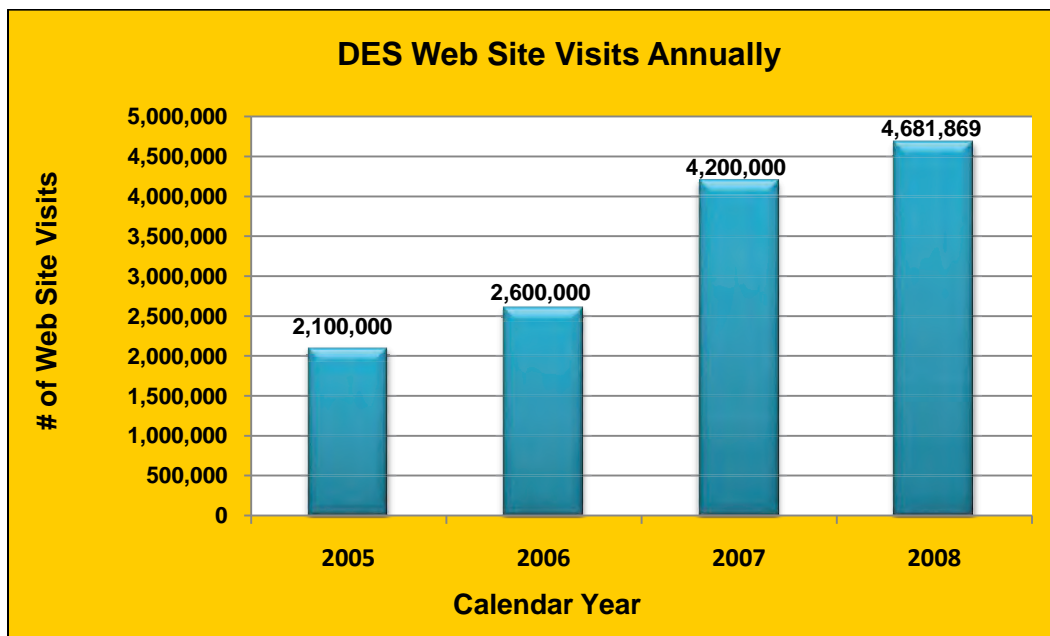
During CY2008 there were 522 Accidents Reported. Of those 522 accidents reported, 185 were recordable accidents to OSHA. The top 3 recordable injuries by type remain to be sprains and strains, contusions and lacerations.



Fiscal year premium assessments are based upon the total of all disbursements during the two years prior. For example, the FY09 premium is based upon the total of all disbursements during FY07 for State agency claims, regardless of the accident date.

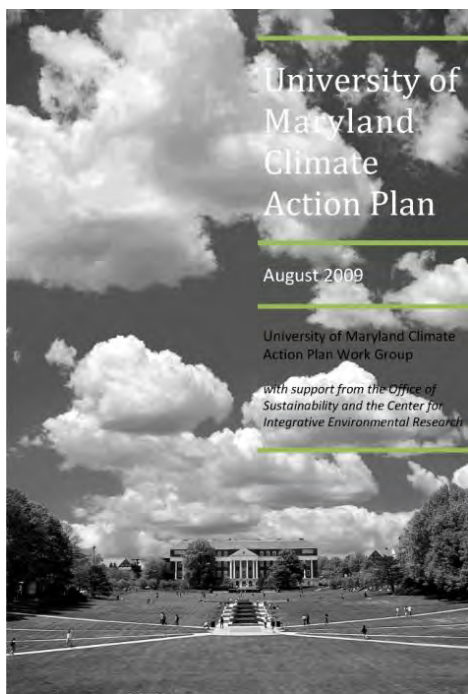


In 2005, DES offered 16 online training courses. In the years since, DES has added 6 more online courses raising the total to 22 online courses offered. DES also improved how online training is recorded. In the past, only the last date of training was recorded when individuals were required to take annual training for some programs. Training data were therefore under reported. 2009 data most accurately reports training information even when training is retaken at a later date.



The Department of Environmental Safety is the primary source of environmental, safety, and health information for the campus community. In 2008 and 2009, over 4,000,000 DES web pages were visited annually, a substantial increase in web page visits compared to previous years.

Sustainability



The Office of Sustainability, established in 2007, serves to further advance sustainability efforts campus-wide and to coordinate the University's participation in the American College and University Presidents' Climate Commitment. The Office's focus is to integrate sustainability across University policies, operations, curriculum, research and service through facilitation, consultation and program development.

In 2008, the Office expended a significant effort to draft a campus Climate Action Plan by working with and supporting a Climate Action Plan Workgroup consisting 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. This initiative was supplemented by a collaborative effort with the University's Center for Integrative Environmental Research (CIER), in the development of the University's first greenhouse gas inventory.

In addition to climate-related work, the Office undertook a new curriculum initiative called the Chesapeake Project. The Chesapeake Project is a new learning community of University faculty who are finding unique ways of teaching about sustainability across the disciplines. Central to this effort was a two-day workshop designed to help faculty integrate sustainability across all academic disciplines. Led by faculty facilitators, the participants learned about core concepts of environmental, economic, and social sustainability from resource experts. Each of the participants subsequently integrated sustainability into at least one of their existing courses.



The Office also began to focus on developing a means of measuring the University's progress to reduce its environmental footprint and broader sustainability efforts. With the assistance of many campus stakeholders, the Office undertook an initiative to develop campus sustainability metrics and used a number of student interns to collect and analyze key data. The result will be the first campus sustainability metrics report which will be issued in early 2010.

Another major milestone supported by the Office was the establishment of a new University Sustainability Council that held its first meeting in September 2009. This executive level council was established to advise the President on sustainability related matters through the development of recommended policies, procedures and guidelines. The Council is also charged with monitoring and measuring the University's sustainability efforts and to oversee the implementation of the Climate Action Plan.

During the past year, the Office continued to host a sustainability speaker series for the campus community, 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, conducted sustainability "audits" for select departments, and worked to redesign and expand the campus sustainability website. For more information see www.sustainability.umd.edu.



Office of Sustainability interns doing outreach during Maryland Day

Creating a More Sustainable Campus



DEPARTMENT OF ENVIRONMENTAL SAFETY

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