

**ENVIRONMENTAL HEALTH AND SAFETY**  
**Annual Report**  
**2014**



# Prevent

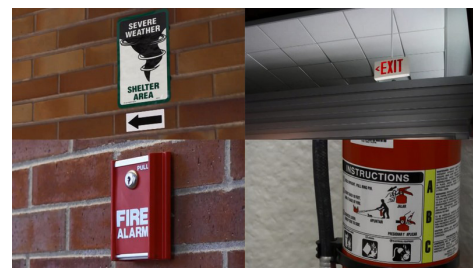
## Peace of Mind

EH&S identifies risks to help the campus community minimize hazards.



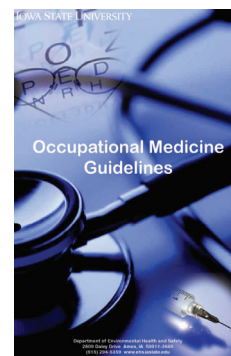
EH&S implemented programs that created greater hazard awareness for our students and staff.

Through partnerships with the Iowa State University (ISU) Police, the Senior Vice President and Provost's Office, and University Relations, EH&S created a multi-faceted [Emergency Response Video](#) that was released before the fall semester. The video was first rolled out to a group of more than **180** community advisors at Residence Life orientation. The video was viewed in many classrooms during the semester and shown to new employees at University Human Resources Onboarding.



Automatic electronic defibrillators (AEDs) are available in many buildings across campus and EH&S partnered with departments to ensure all **87** AEDs are fully operational. EH&S produced a short [instructional video](#) on changing the batteries in an AED cabinet to aid users in the maintenance of their equipment.

EH&S continued coordination of the ISU Occupational Medicine Program. The program provides hazard assessment, medical surveillance and consultation to university employees who work with materials and/or under environmental conditions that have potential health risks.



EH&S staff identifies risks to the campus community to help everyone prevent those hazards.



# Prevent

## Working for a Safer Tomorrow

EH&S investigates accidents for a more secure future.



EH&S staff investigated nearly **700** accidents to learn more about their cause and to determine what might be done to prevent recurring injuries on campus. Based on severity and potential for improvement, EH&S selected **51** accidents for comprehensive analysis in cooperation with University Human Resources. This collaborative effort will ultimately prevent future accidents, protecting the campus community from injury and reducing the cost of lost time accidents.

Slips, trips, and falls are the leading cause of injuries on campus, followed by burns, cuts, and hazardous materials exposures. In December, EH&S implemented the [Safe Winter Walking Campaign](#) to remind students and employees of winter walking hazards on campus.



**EH&S investigates accidents to prevent their reoccurrence.**

# Prevent

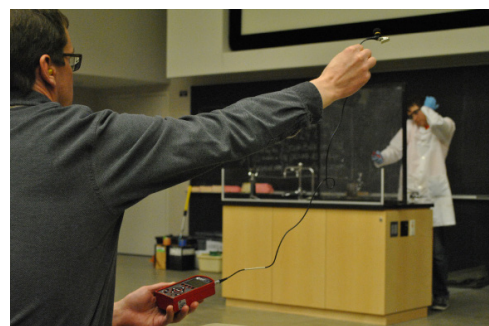
## Far-reaching Influences

Ensuring a safe time, every time.



EH&S hosted numerous safety awareness events and collaborated with campus and community organizations to share our expertise for keeping fun and exciting activities safe for everyone.

Be it campuswide events, concerts, or student functions, EH&S staff prepared for the safety of visitors and students by participating in event planning. Safety staff served on the Events Authorization Committee to review event plans. Fire safety staff assisted the City of Ames, Homecoming Committee, and Iowa Games staff prior to fireworks displays, and the Iowa FFA with indoor pyrotechnic and LASER displays. The Society of Chemistry Undergraduate Majors requested EH&S assistance with their public chemistry demonstrations.



EH&S, in collaboration with the City of Ames Fire Department, hosted nearly **400** students and staff at our fifth annual Campus Fire Safety Day. EH&S hosted the National Weather Service Storm Spotter training on campus for more than **40** attendees.

EH&S hosted several Safety Summits featuring unique topics relevant to the campus community. EH&S also created hands-on learning solutions that enhanced safety performance beyond the classroom, including Lab Safety Orientation for more than **150** ISU students.

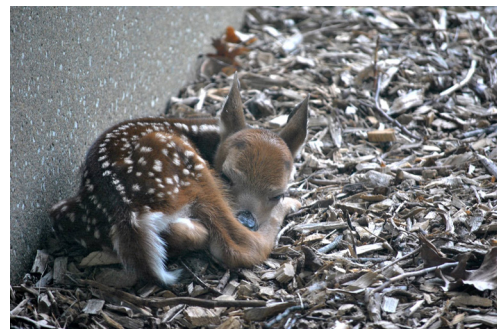


**EH&S involvement in campus events assures safe and enjoyable functions.**

# Protect

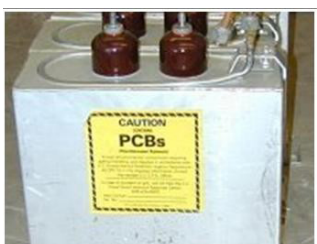
## Preserving Environmental Harmony

**EH&S is committed to protecting the environment.**



EH&S protected our campus and community environments through programs that minimized Iowa State University's environmental impact.

EH&S' commitment to improved environmental protection was a perfect match to ISU's strategic commitment to improved infrastructure and facilities. EH&S provided weekly construction site inspections to assure storm water runoff and soil stability systems remain intact throughout the construction process. Storm water runoff management prevented over **30** cubic yards of topsoil erosion from ISU construction sites. That saved **3.2** dump truck loads of soil from entering area surface waters and helped prevent maintenance issues for storm sewers.



Polychlorinated biphenyls (PCBs) are toxic, persistent and bioaccumulating chemicals that were commonly used in the 20th century. PCB-contaminated electrical equipment could be found in just about every campus building in previous decades. In 2014, the last known PCB-contaminated electrical transformer was removed from campus for disposal.

Underground storage tanks (USTs) responsible for soil and groundwater contamination once numbered over one hundred on the ISU campus. Today there are just two safe and modern USTs remaining after the removal at the Knapp-Storms Dining Complex. Over the past 25 years, EH&S has coordinated the safe removal and disposal of countless PCB transformers and USTs.



EH&S continued to provide environmental auditing and impact reporting services for university real estate transactions.

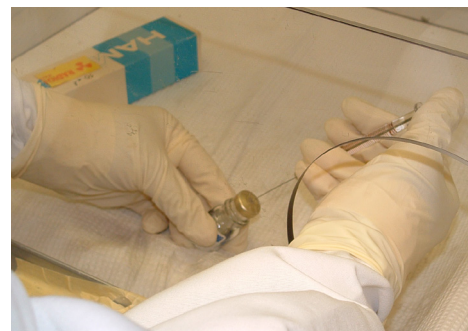
**EH&S is committed to environmental protection.**



# Protect

## Impacting Safety Practices

### Improving safety through prevention.



Prevention of illness and injury is at the core of safety. EH&S' commitment to our learning and research communities drives our attention to safety needs across campus.

Researchers use chemical fume hoods and biosafety cabinets to limit exposures, improve safety, and manage hazards. Researchers relied on EH&S to verify that **1,379** fumehoods were operating properly. Likewise, **237** biosafety cabinets were certified to ensure the cabinets met safety performance standards. Certified biosafety cabinets provide protection for the user, product, and the environment.



Campuswide safety audits emphasized safety performance by implementing prudent safety practices in the work place, research laboratory, and classroom. EH&S assisted laboratories, shops, and farms to improve safety performance by auditing work conditions and working with campus personnel to reduce hazards and prevent accidents. EH&S completed **578** laboratory surveys, while helping **466** principal investigators enhance workplace safety.

When the ISU research community requested support, EH&S staff assisted researchers in meeting the regulatory and funding requirements of granting agencies. EH&S supplied certifications that demonstrated regulatory compliance and safety performance. EH&S helped researchers renew AAALAC International accreditation, select agent permits, radiation producing device registrations, and Clean Air Act permits.

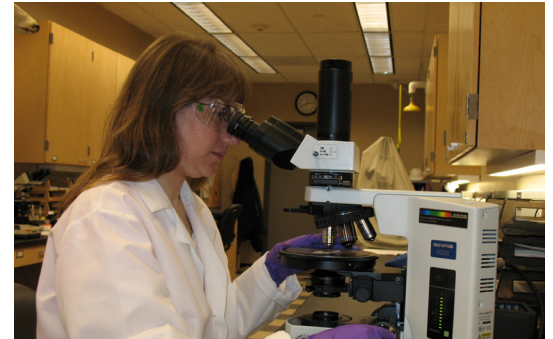


**EH&S is committed to improving safety through prevention of injuries and management of hazards.**

# Protect

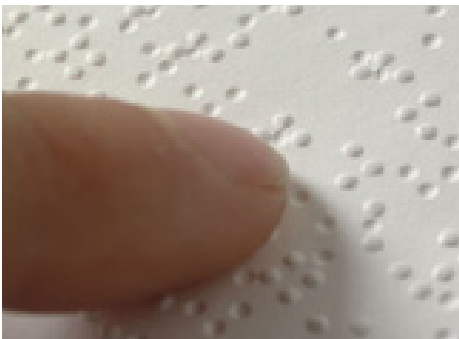
## Protecting Public Health

**EH&S uses expertise to protect against unseen hazards.**



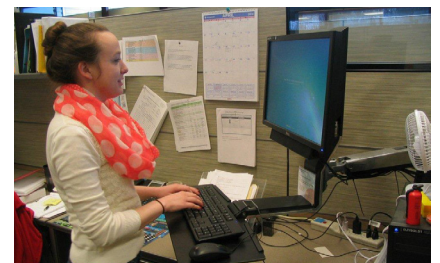
EH&S connected expert knowledge and service to ISU and our neighboring communities.

ISU's Department of Residence enlisted EH&S to evaluate radon levels across the entire residential system. ISU became the first and only Iowa Regent University to complete radon testing across all university housing to ensure EPA recommended radon levels were met. Department of Residence customers and their families can rest assured that radon exposure is not an issue.



EH&S staff completed more than **100** moisture, mold, asbestos and indoor air quality investigations across campus. The Iowa Board of Regents relied on EH&S' experts for monitoring services at the Iowa School for the Deaf in Council Bluffs and the Iowa Educational Services for the Blind & Visually Impaired (previously the Iowa Braille School) in Vinton.

Iowa industry called upon EH&S to provide safety services. Through the Center for Industrial Research and Service (CIRAS) – EH&S Outreach partnership, EH&S offered training courses and health and safety consultation services such as air monitoring, ergonomics, instrument calibrations, and life safety plan reviews to businesses and manufacturers across Iowa. EH&S continued eliminating public hazards by assisting Iowa law enforcement agencies with incineration of controlled substances and serving as the radioactive waste broker for the State of Iowa.



**EH&S uses staff expertise to mitigate potential public health threats.**



# Connect

## Welcome to the New Age

**EH&S provides students with real-world experiences and opportunities.**



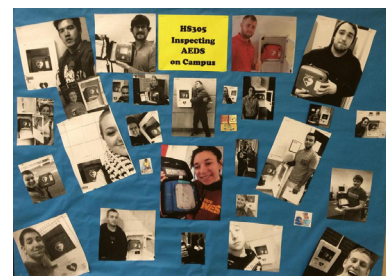
EH&S recognized students as tomorrow's professionals who will promote safety by partnering with many departments to provide students with experience and opportunities to foster a safety culture.

EH&S staff aligned with students in Technology Systems Management 415/416 for senior capstone projects. One project evaluated walking hazards on campus. Students identified problems and proposed solutions that could benefit everyone using campus walkways. Recommendations provided by these students will be evaluated and implemented as EH&S focuses on slip, trip, and fall hazards across campus.



EH&S worked with Environmental Science 203 students to collect surface water quality samples through the Iowa Department of Natural Resources IOWATER program. Students gained experience while assessing Iowa State University's impact on campus streams. Students safely collected samples from eight monitoring locations along Clear Creek, College Creek, and Squaw Creek to document nitrate levels, oxygen levels, clarity, water flow, and habitat identification.

EH&S partnered with Health Studies 305 students to complete **60** inspections of campus automated external defibrillators (AED), reinforcing the importance of preparedness.



**Involving students in identifying, evaluating, and solving high-impact safety issues extended EH&S' mission beyond the local community.**

# Connect

## #Sharing

EH&S shares knowledge, improves quality, and expands service.



EH&S created connections across the world using various social media platforms.

EH&S utilized [Facebook](#), [Twitter](#), and [YouTube](#) to present the newest topics, fun facts, and departmental activities as a way to keep our clients informed. With almost **150,000** YouTube views, the message of safety reached a worldwide audience.

Click on the links below to see a sampling of the work done by EH&S staff.



Fire Exits



Lifting Techniques



Safe Winter Walking

EH&S uses social media to create connections across the world.

# Connect

## Sustainable Connections

**EH&S is sustainability in action.**



EH&S used sustainable methods to reduce, reuse, renew, and recycle, promoting balance between people, materials, energy, and the environment.

EH&S conserved enough energy to power the department's overhead lights for three and one-half months by shutting down idle computers. EH&S staff reduced the department's electrical use by fifteen percent and maintained that reduction through 2014. As an ISU van pool driver, one staff member demonstrated that small efforts can create meaningful results. That van pool saved a combined **127,500** road miles among the seven passengers traveling to and from work.

EH&S fostered green efforts through recycling

- Glass
- Cardboard, paper, and telephone books
- Ferrous and non-ferrous metals
- Used oil
- Fluorescent lamps
- Ballasts



EH&S re-purposed solvent drums and totes from the Iowa Department of Corrections to manage laboratory waste disposal and cardboard recycling. EH&S also redistributed **545** containers of reagent-grade chemicals and solvents to research laboratories, diverting materials from commercial disposal.

**EH&S lives green, leads green, and saves green.**



# Respond

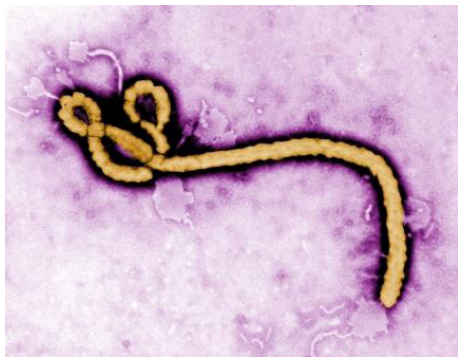
## Every Second Counts

EH&S helps the campus and community prepare for unplanned events.



Being prepared for unexpected events is critical when seconds count.

To help prepare the campus community to act in times of danger, EH&S created an [Emergency Response Guide](#) that is posted in university classrooms. More than **320** guides instruct faculty, staff, and students on appropriate actions to take in the event of fire, severe weather, violent incidents, or other emergencies, and prominently display emergency phone numbers.



EH&S was actively involved in preparedness efforts when an Ebola outbreak occurred in western Africa. EH&S, in cooperation with the Iowa Department of Public Health and Story County Public Health, monitored the emerging crisis across the country and around the world so our campus was prepared to respond if necessary.

Preparation efforts extended beyond campus as EH&S partnered with the City of Ames and Story County to develop a county-wide hazard mitigation plan. EH&S staff actively participated in numerous drills and exercises as they tested response plans for future flooding events and inclement weather.



EH&S safely guides the campus and community through emergency situations.

# Respond

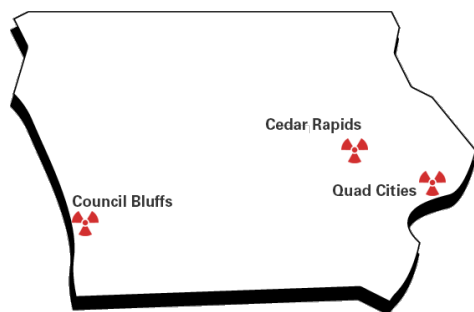
## Big or Small, We Take the Call

**EH&S assists in emergency response and recovery.**



EH&S prepared for and responded to a variety of emergencies and disasters with the goal of protecting students, faculty, and staff while eliminating safety threats to the university community.

A fire in Sweeney Hall damaged the west wing of the building. Response by EH&S staff did not end when the fire department left. EH&S remained involved through the cleanup to ensure chemicals were disposed of properly, verified that water-soaked areas were dried thoroughly, and assessed that the building was once again safe to occupy.



EH&S joined with Iowa's Homeland Security and Emergency Management Department, providing radiological emergency response teams, team coordination, and radiological dose assessment for Iowa's nuclear power plants. Thankfully a response has never been needed, but through continuous practice, EH&S will be prepared to respond.

EH&S responded and guided cleanup efforts with small laboratory mishaps, so important research could continue.



**EH&S responds to emergencies and disasters with the goal of protecting the community.**

# Respond

## Your Professional Resource

**EH&S also means Experts Helping Scholars.**



A world class teaching and research institution demands a well-trained and highly-experienced health and safety resource. The Department of EH&S at Iowa State University has worked hard to recruit and retain highly qualified staff up to the task of providing innovative solutions to unique workplace hazards.

EH&S staff have developed their skills through

- **Education** - All EH&S staff are post-secondary educated including 17 master degrees and 6 PhDs
- **Experience** - Many staff members have research laboratory experience
- **Specialized training** - EH&S staff regularly receive training to stay current in their areas of expertise
- **Certification** - Many staff members are professionally certified including 3 CSP, 2 CIH, 3 CHMM, and 5 RBP

EH&S staff share their knowledge locally, regionally and nationally including presentations at

- Iowa Governor's Safety Conference
- Iowa-Illinois Safety Conference
- Iowa Homeland Security Conference
- College and University Hazardous Waste Conference
- Campus Safety Health and Environmental Management Conference

**Peer to peer and border to border, EH&S professionals are highly qualified resources for a safe and sustainable campus, community, and world.**



## An International Impact

Biosafety staff provided Institutional Biosafety Committee and U.S. Department of Agriculture training to Ghana scientists.

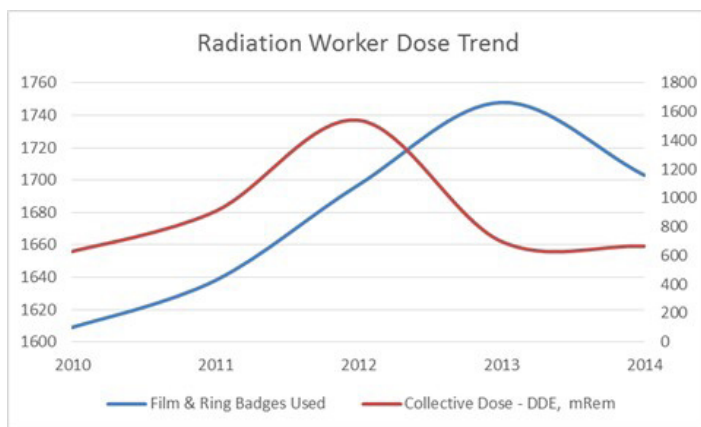
## Across the State

EH&S staff created 61 company and 295 individual Iowa Underground Storage Tank Operator Class C training accounts through the Iowa Department of Natural Resources (IDNR). EH&S also provided incinerator training to IDNR clients.

## Close to Home

Fire Safety staff facilitated fire extinguisher training for 180 Story County employees.

## How Low Can You Go?



## EH&S by the Numbers

- 5** – Percent decrease in the collective deep dose equivalent radiation dose to ISU radiation workers relative to 2013
- 134** – Radioactive leak tests completed in 2014, a 25% increase from 2013
- 145** – IBC applications reviewed
- 237** – Asbestos bulk samples
- 237** – Biosafety cabinets supported by EH&S in 2014, a 21% increase over 2013
- 419** – Radioactive materials laboratory contamination surveys completed by EH&S staff in 2014
- 457** – Stormwater inspections completed
- 509** – Pieces of laboratory equipment inspected before disposal and asset recovery
- 549** – Asbestos air samples
- 578** – Laboratory safety audits completed
- 606** – IACUC applications reviewed
- 1,464** – Hazardous materials packages shipped
- 1,472** – Chemical fumehood evaluations
- 2,640** – Individuals that completed classroom courses through EH&S in 2014
- 20,995** – Containers of hazardous waste removed
- 22,844** – Online courses completed through the EH&S Learning Center in 2014
- 68,458** – Fire extinguisher inspections
- 257,565** – Pounds of pathological waste incinerated

# Just the Facts

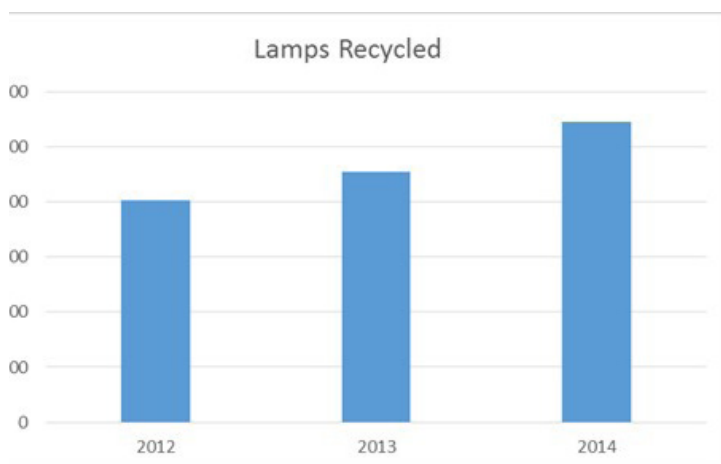
## Paying Safety Forward

EH&S employed students from across the nation and the world. EH&S employed students from California, Georgia, Iowa, Illinois, Maryland, Minnesota, Puerto Rico, and South Korea. EH&S student employees gained valuable safety and employment experience and sometimes course credits.



## Recycling Waste, Saving Space

Ever wonder what happens to all the used fluorescent light bulbs on campus? EH&S recycles the lamps, preventing environmental mercury releases and saving landfill space.



## Brave New Learning Opportunities

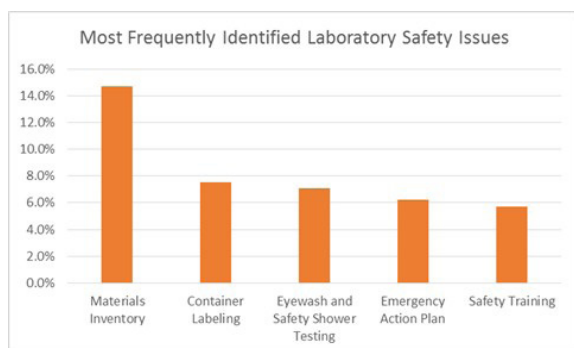
EH&S professionals created and published new learning tools for our valued customers like an instructional video covering the steps to follow for changing AED batteries.



# Just the Facts

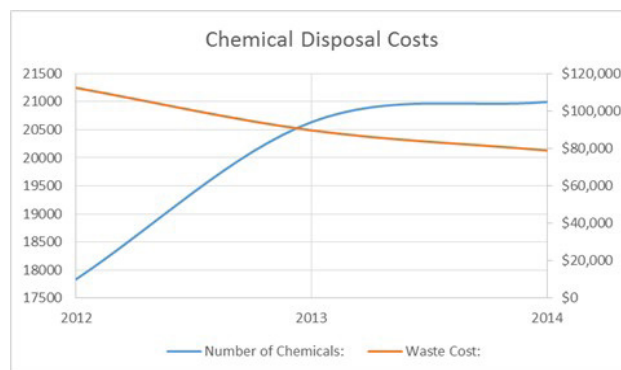
## Data Driven Results

Through annual laboratory safety audits, EH&S is able to identify and manage safety across campus and address specific issues to improve worker and student safety.



## Keeping an Eye on the Bottom Line

EH&S professionals provide increased service at lower costs for a growing university.



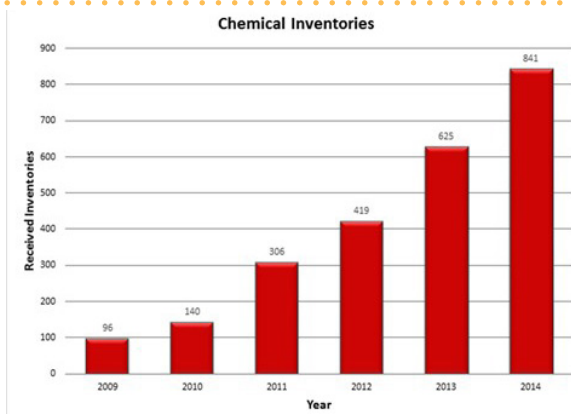
## Providing Recognition

During National Safety Month in June, EH&S identified and awarded 20 ISU staff and students with ISU Dining gift cards and t-shirts for being caught in the act of practicing safety around campus.



## Inventory Risk

A well managed chemical inventory system will help the campus prevent, protect, and respond in the event of an emergency. In 2014, EH&S reported a 34% increase in chemical inventories received from laboratories when compared to 2013.

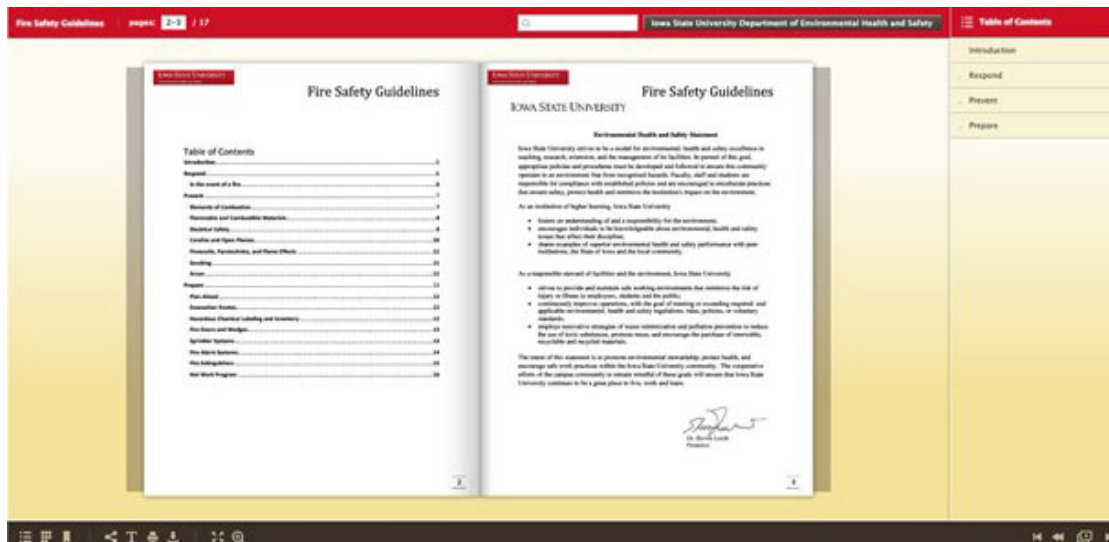




# Just the Facts

## Mobile Access

EH&S makes important information accessible to our customers. In 2014, EH&S publications were converted to the mobile device-friendly FlippingBook format.



## Shameless Safety Promotion

EH&S' creative staff produced promotional videos highlighting fire exit awareness, safe lifting techniques, and safe winter walking, using the "Hazards Like Him" platform, which had more than 6,000 collective views.



Instructional videos were created for the university community with guidance on chemical inventories, personal protective equipment, emergency response, eye wash and safety shower use, AED battery replacement, hearing protection, and spill control.

## Top 5 Most Visited Publications



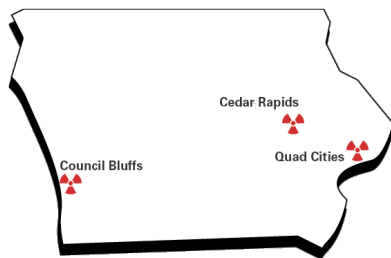
# Just the Facts

## Protecting Our Most Valuable Resource

The Occupational Medicine Program provides medical surveillance services for over 2,250 ISU employees with potential exposure to job related hazards. In 2013, 1,063 new hazard inventories were completed by employees. Of these, 631 required job hazard evaluations. As part of the Association for Assessment and Accreditation of Laboratory Animal Care review, 822 people were identified who met the requirements for the Animal Activities Hazard.

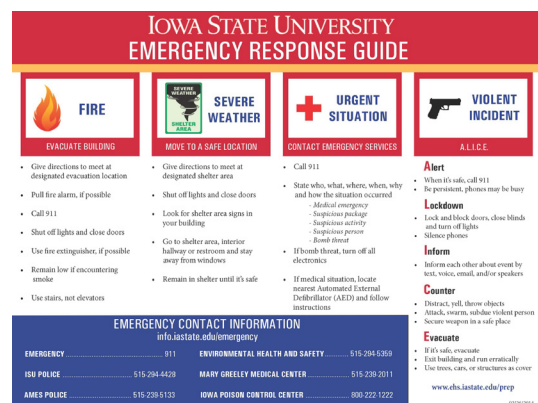
### Rad Ready

Twelve EH&S staff served the Iowa Homeland Security and Emergency Management Department by participating in eight radiological emergency response drills and two Federal Emergency Management Agency graded exercises.



### Be Prepared

Emergency Response Guide posters were placed in over 200 classrooms. The posters provide emergency response information to assist building occupants in times of crisis and can be printed from the EH&S website.



## Your Portal to the World Of Safety

The EH&S website connects users to publications, manuals, training courses, and the EH&S staff directory. Constantly improving the user experience and accessibility of our website led to a **156%** increase in website traffic in two years.

### Unique Visitors

2012 - 50,118

2013 - 101,039

2014 - 128,257

EH&S currently offers **44** online and **33** classroom courses for Iowa State University faculty, staff and students.

