

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

ENVIRONMENTAL HEALTH AND SAFETY
Annual Report
2015



EH&S
Services
Building



Engaging Learning



Creating Handshakes



Sharing Expertise



Lending a Hand



Just the Facts

Sustainable Safety

Greetings from the Department of Environmental Health and Safety. We invite you to review our 2015 Annual Report to learn more about our department, our programs, and our efforts to develop client safety in sustainable ways. We welcome your comments and questions!

Forty-eight years ago, the national seat belt law required the installation of seat belts in cars for the first time. Thirty years ago, Iowa made seat belt use mandatory. As of 2010, Iowa has greater than 93% compliance with the law, and generations of children have grown up knowing that they must wear their seat belts when riding in a car. In fact, they don't really think about putting their seat belt on; buckling up is an automatic and ongoing safety response to a potential hazard. This is an example of sustainable safety.

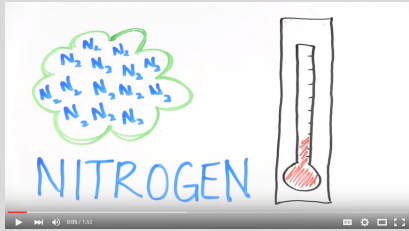
This report highlights EH&S successes, commitments, and our daily goal of sending **Everyone Home Safely.**

— Paul Richmond, Director EH&S



Engaging Learning

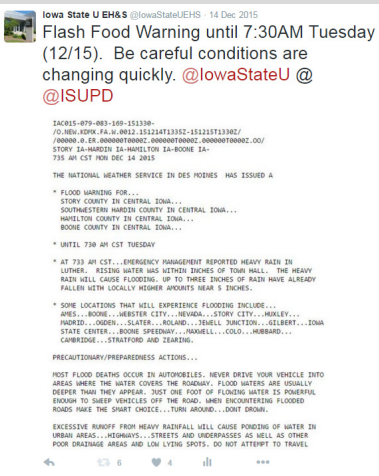
Communicating Safety to All



Sharing the message of sustainable safety is important for students, faculty, and staff at Iowa State University. EH&S kept the community informed using various modes of communication from a robust website, (promoting national safety events using social media and creating short instructional safety-related videos for viewing on [YouTube](#)). EH&S used its main page scroller to market program areas, new safety publications and training courses, as well as to highlight events and activities on campus and around the world.



Individuals from over **120** countries accessed the EH&S website in 2015, allowing us to share our message globally. Our social media following increased by over 30% in 2015, sharing safety messages across campus and the world. EH&S used the social media scheduling-tool to plan [Facebook](#) posts and tweets in advance, producing **210** tweeted messages and **309** Facebook posts in 2015.



Severe weather messaging is critical to the community when conditions are rapidly changing. When the National Weather Service (NWS) posts severe weather alerts, the alerts are displayed on the EH&S homepage as well as the EH&S weather page. The messages are shared with our social media contacts, and they are posted, [tweeted](#) and retweeted to campus.

EH&S communicates important safety events and messages through the Inside Iowa State announcements page and university calendar.

Engaging Learning

Students Interacting with Safety



EH&S staff engaged students in learning through safety courses like Technology Systems Management (TSM) 471 – Safety Laboratory and Chemistry (CHEM) 550 - Safety in the Chemical Laboratory. The message of safety is connected to many courses in the College of Engineering through the Shop Safety Enhanced Learning and Training Infrastructure Project (SSELT). This project allows the course instructor to require students to complete specific safety modules through Blackboard Learn and Learn@ISU.



Students have interacted with EH&S staff through events like Destination Iowa State and Campus Fire Safety Day where they learned about fire safety on campus and in residence facilities. They also gained hands-on experience using fire extinguishers.



Other Student Activities / Clubs

- ASSE – Club advisor
- Fredriksen Court Student Association – T-shirt donation for fire safety event
- Greek Community – “How to Survive College” safety presentation
- Homecoming – Display inspections
- Iowa State Space Society – Evaluation of rocket motor firing
- ISU Welcome Stations – Welcoming students
- Matt Hunt concert at Hansen Ag – Life safety oversight
- Society of Chemistry Undergraduate Majors (SCUM) – Advising on proper fire extinguishers
- Team PRISUM – Advising on proper fire extinguishers
- And MORE!



Engaging Learning

Walking Safe this Winter



EH&S works to educate the university community on safety principles with a goal of injury and illness prevention. EH&S developed a marketing campaign, Walk Safe, to help address injuries sustained by faculty, staff, students, and visitors to campus during the winter season. Falls on snow or ice account for more than half of the university's workplace injuries during the winter months. Typical injuries include bruised and strained knees, strained backs, broken bones, and head injuries.

The campaign included the development of an infographic poster series and creation of a promotional website. Many existing EH&S web pages were reviewed and revised to ensure a consistent message throughout the campaign. Since the beginning of the 2015 campaign, more than **10,300** hits were recorded on these updated web pages compared to **6,200**, hits in 2014. This is a **66%** increase in campaign web page hits.

The [Walk Safe This Winter website](http://www.ehs.iastate.edu/news/walk-safe-winter) has information on how to minimize risks when walking on snow or ice, how to pack the car for winter travel, how to report problem sidewalks and more.

In combination with the promotional campaign, EH&S has been canvassing campus sidewalks and parking lots to look for slip, trip and fall hazards. Identified problems are reported to Facilities Planning and Management and Parking Services for corrective action. Some of the identified problems can be addressed quickly though additional surface treatment or snow removal, while others require long range planning for repair of damaged substrates.

In 2016, EH&S will launch an initiative to analyze injury data to determine possible trends in this type of incident. In support of this effort, EH&S will be contacting injured ISU employees to solicit their feedback and ideas on how to reduce these types of injuries.

The objective of this campaign was to follow the EH&S vision of creating a safe and sustainable campus, community, and world. Educating the community results in reduction of injuries, costs, lost time and productivity, and increased quality of life. The posters generated through this campaign have been adopted by other institutions.

Creating Handshakes

Partnering for Employee Engagement



LEARN@ISU




EH&S developed a critical partnership with University Human Resources to bring a long-term solution for employee training needs through the development of a centralized online employee learning environment. The new [Learn@ISU](#) learning solution was built on the existing EH&S learning management system (LMS). Prior to the expansion of the LMS, EH&S offered **71** online and classroom safety training courses. Learn@ISU was launched in September 2015 and replaced the old University Human Resources course registration method in AccessPlus. The system hosts **183** courses.... and counting.

In addition to the EH&S and UHR partnership, several campus partners were added in 2015 to this one-stop university-wide learning management system, including:

- Center for Excellence in Learning and Teaching (CELT)
- Center for Industrial Research and Service (CIRAS)
- Department of the Controller
- Department of Public Safety
- Office of the Senior Vice President and Provost
- Office of the Registrar
- Purchasing Department

“The system is set up in such a way that even though the platform is centrally managed, all those partners can administer their own training,” Julie Nuter, Vice President for University Human Resources said when interviewed by Erin Rosacker for Inside Iowa State on August 13, 2015.

Creating Handshakes

Flipping the Switch on Safety

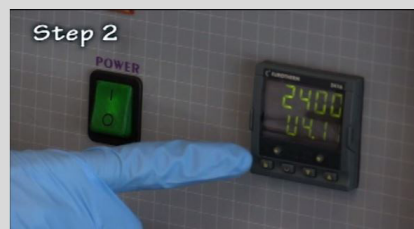


Due to increased enrollment and a shortage of laboratory space, Materials Science and Engineering needed an innovative solution to integrate safety training into their curriculum and provide students with more time working in the laboratory.

With the help of a Flipped Classroom Grant, Materials Science and Engineering reached out to EH&S for assistance in developing site-specific safety training modules for their laboratories. The goal was to provide students online safety training modules that could be completed prior to working in the laboratory, allowing students more hands-on time using equipment.



Once the plan was in place, a team of two student employees began the process of creating **17** modules. Over the next seven months, the two students designed templates, filmed and edited video, and created voice-overs for the modules. EH&S staff served as the experts for course design and development, and reviewed the safety aspects of each module. Materials Science and Engineering provided content and review for each module's learning assessment.



Once complete, the modules were placed in the Manager Training Needs tool within Learn@ISU. Materials Science and Engineering faculty can use the modules in Blackboard Learn and add them as a component of their classroom courses.

The modules were used for the Fall 2015 semester with an average of **66** users per module.

Creating Handshakes

Completing the Shops safety (SSELT) project



In 2012, while serving as Dean of the College of Engineering, (CoE) Dr. Johnathan Wickert granted a request to pursue a Shop Safety Enhanced Learning and Training (SSELT) Infrastructure Project as part of the Dean's Educational Initiative.

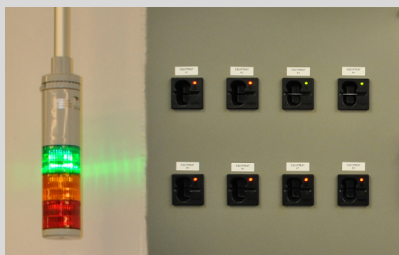
The objectives of this project were as follows:

- Develop state of the art safety education material
- Integrate variety of safety features into Blackboard Learn (BBL)
- Utilize BBL for management of all aspect of safety in coursework, shops, and labs
- Develop a system that can interface with:
 - access control management system(s)
 - tool-secure lock-out functions
 - tool specific training modules
 - learning systems (e.g., Learn@ISU and Blackboard Learn)
 - Registrar's database to facilitate authoritative functions



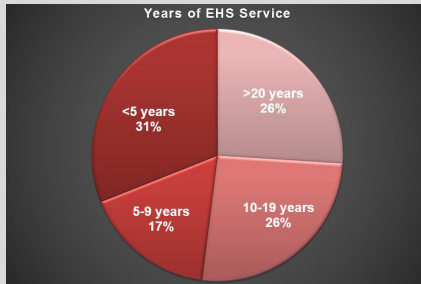
The SSELT system includes various safety training modules and the supporting infrastructure to facilitate all the functions listed above. Furthermore, the access control and secure lockout management systems were installed in 0209 Sukup Hall and are functional.

Managing Your Safety Training Profile webpage on the EH&S website consists of various resources that guide faculty, staff, and graduate students through the process of using the SSELT feature in their courses/labs/shops. While the system was developed with CoE funds, the system is available to all ISU faculty, staff, and students.



Sharing Expertise

Providing Safety Expertise through the Years



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
- Credentialed - Many staff members maintain professional credentials including **3** CSP, **2** CIH, and **3** CHMM.
- EH&S staff share their knowledge locally, regionally, and nationally including presentations at Iowa Governor's Safety Conference
- Participation
 - Iowa-Illinois Safety Conference
 - Iowa Homeland Security Conference
 - College and University Hazardous Waste Conference
 - Campus Safety Health and Environmental Management Association Conference



Sharing Expertise

Aligning Expertise through Committee Work



EH&S staff are voting members of the university's committees directly evaluating research on campus. These committees include the Institutional Animal Care and Use Committee (IACUC), Institutional Biosafety Committee (IBC), Institutional Review Board (IRB), and Radiation Safety Committee (RSC). EH&S's expertise supports sustainable safety oversight of the world-class research at Iowa State University.

Further collaboration occurs through EH&S participation on the Critical Incident Response Team (CIRT) and Event Authorization Committee (EAC), Work/Life Advisory Committee, Ames Laboratory's ALARA Review, Laser Safety, and Operations Review Committees.

Locally and nationally, EH&S staff are making a difference through their participation in the following:



American Red Cross



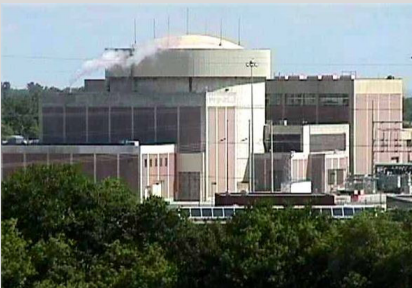
- American Red Cross, Central Iowa Region
- Ames International Partner City Association
- Environmental Professionals of Iowa
- Iowa/Illinois AIHA Local Section Planning Committee
- Iowa Occupational Safety and Health Advisory Council
- Rotary Club of Ames Morning
- Story County Coalition for Disaster Recovery
- Story County Emergency Management Commission
- Story County Local Emergency Planning Committee
- American Biological Safety Association (ABSA) Professional Development Committee
- ABSA Scientific Planning Committee
- Campus Safety Health Environment and Management Association (CSHEMA) Awards and Recognition Committee

CSHEMA

Campus Safety Health and Environmental Management Association

Sharing Expertise

Serving the Land Grant Mission



EH&S shares safety knowledge, experience, and services with people throughout Iowa.

One of the interesting ways EH&S staff shared their expertise is through participation in the State of Iowa Radiological Emergency Program. The program is administered by Iowa Homeland Security and Emergency Management. In 2015, EH&S provided **16** staff members to serve as radiological field team members, field team coordinators, controllers, and trainers for nine non-federally evaluated radiological drills and one federally-evaluated exercise at three nuclear power plants - Duane Arnold Energy Center, Palo, IA; Fort Calhoun Nuclear Station, Blair, NE; Quad Cities Nuclear Station, Cordova, IL.

EH&S also partners with the State Hygienic Laboratory in Coralville, IA and Ankeny, IA to assist in the training of program participants and management of the program policies, protocols, and procedures.

EH&S staff provided **12** training sessions covering the breadth of the program as well as managing a complete review and revision of approximately **30** programmatic standard operating procedures.

Working through ISU College of Engineering Center for Industrial Research and Service (CIRAS), National Institutes of Sciences and Technology Manufacturing Extension Partnership (NIST/MEP) Program as well as ISU Research Park, EH&S provided specialized safety services to **34** private businesses and manufacturers around the state. These safety services included:

- Facility ventilation evaluations
- Fume hood certifications
- Hazardous materials shipping/disposal consultation
- Online and classroom safety training
- Radiological instrument calibrations
- Radiological safety surveys
- Safety audits
 - Chemical, Facility, Laboratory, and Radiological
- Safety consultation

Lending a Hand

Responding to Global Incidents



IOWA STATE UNIVERSITY

POLICE

Emergency preparedness activities at ISU epitomize our land-grant mission through partnerships with the City of Ames, Ames Fire Department, Story County Public Health, Story County Emergency Management, Mary Greeley Medical Center as well as Ames Laboratory Occupational Medicine, Thielen Student Health Center, and ISU Police.

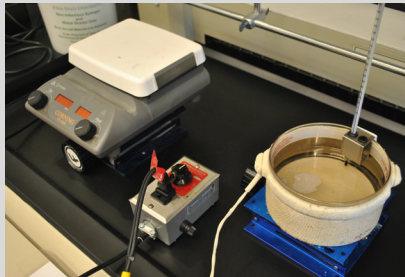
EH&S, in cooperation with many ISU academic and non-academic units, the Iowa Department of Public Health and Story County Public Health, monitored the Ebola outbreak around the world so our campus was prepared to respond if necessary.

In April 2015, the Iowa Department of Agriculture and Land Stewardship (IDALS) began receiving reports of high pathogenic avian influenza (HPAI). Iowa State University Veterinary Diagnostic Laboratory was called to assist the US Department of Agriculture and IDALS in the development of control zones for flock management at farms testing positive for avian influenza. EH&S coordinated respirator fit testing and medical evaluations of **66** employees from ISU, Story County, and IDALS. N-95 dust mask respirators were worn by all personnel who had contact with the infected flocks.

EH&S also assisted with the development of [Frequently Asked Questions](#) document to assist researchers who expressed interest in conducting research in HPAI.

Lending a Hand

Building Safety Throughout Campus



Hot plates and heating elements

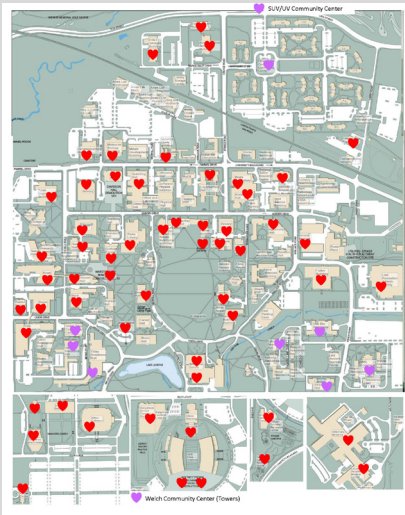
Several laboratory procedures require the use of oil baths, furnaces, and drying ovens. To prevent fires and explosions due to the improper use of these heating devices, EH&S developed a webpage on [Heating Devices](#) that serves as a resource for laboratory personnel. Resources include alternative heating oils, recommended controls, and safe operating procedures.



Sharps on campus

In 2015, nearly **200** restrooms were identified as needing or benefiting from lockable sharps containers. EH&S and FP&M developed the process for identification, installation, and maintenance of sharps containers in restrooms on campus.

To address other sources of sharps on campus a new infographic was developed and distributed during laboratory safety surveys and shared with campus Laboratory Safety Contacts.



Automated External Defibrillators (AED)

As part of Iowa State University's on going effort to prepare for emergency situations on campus, EH&S assumed the management of Automated External Defibrillators (AED). EH&S partnered with FP&M to add AEDs as part of the facility design manual, so new campus buildings will include installed AEDs. EH&S works with the AED Policy Committee to prioritize the installation of AEDs in existing buildings. Priority of installation is based on occupancy and activities.

Ten new AEDs were installed on campus. The AED inventory on campus now totals over **100**, each electronically monitored by ISU police and maintained by EH&S.

Lending a Hand

Preparing through Drills and Exercises



Developing and sustaining effective emergency assets, plans, and procedures is achieved through active involvement with campus, local, state, and federal agencies specializing in disaster response.

Local, state, or federal emergency response teams rarely get the opportunity to cut through walls in an existing structure while participating in an exercise. The demolition of Davidson Hall provided that opportunity and multiple scenarios for search and rescue canines in the rubble piles of the building. EH&S and Facilities Planning and Management (FP&M) partnered to facilitate an Iowa Task Force 1 Urban Search and Rescue exercise at Davidson Hall.



EH&S conducted a full-scale exercise at the ISU Veterinary Medicine Research Institute Biosafety Level 3 (BSL-3) facility. Participants included ISU Faculty, ISU Police, City of Ames Fire Department, Mary Greeley Medical Center, and EH&S. The success of this exercise was demonstrated through the timely, well-coordinated actions of the partnering agencies.



EH&S, ISU Police, ISU Information Technology, and University Relations participated in the 2015 National Seminar and Tabletop Exercise for Institutions of Higher Education conducted by the United States Department of Homeland Security and hosted at Indiana University – Purdue University Indianapolis. The cyber security-based seminar and tabletop allowed for information and experience sharing between national governmental agencies and centers, colleges and universities.

EH&S staff also participated in:

- an emergency room drill at Mary Greeley Medical Center
- the American Red Cross Iowa Regional Disaster Exercise

EH&S by the Numbers: 2015

- 3** – Number of regulatory audits conducted by external agencies per month
- 35** - Number of laboratory inspections done weekly
- 101** – Radioactive leak tests completed
- 170** - IBC applications reviewed
- 236** – Biosafety cabinet certifications coordinated
- 302** – Asbestos bulk samples collected and analyzed
- 439** – Radioactive materials laboratory contamination surveys completed
- 490** – Asbestos air samples collected and analyzed
- 612** – IACUC applications reviewed
- 1009** – Pieces of laboratory equipment inspected before disposal or release to asset recovery
- 1529** – Hazardous materials packages shipped
- 2515** – Individuals that completed EH&S classroom courses
- 20,995** – Containers of hazardous waste removed from campus locations
- 29,121** – Online EH&S courses completed
- 51,088** – Mercury containing lamps recycled
- 256,114** – Pounds of pathological waste incinerated at the Vet Med incinerator

Peer to peer opportunities

EH&S hosted the Big XII EH&S Directors meeting in 2015. Directors of EH&S departments from the Big XII institutions gathered to discuss current topics and learn from peers. The two day event was a great opportunity to engage with other safety professionals. EH&S also hosted the North Central Chapter Health Physics Society annual meeting. The event provided EH&S staff an opportunity for continued education and to stay current on issues/events that impact the university.



A light on recycling

With a growing university, buildings require more usage than in past years. One of the results is the additional time lights are used in the building. More light usage means more fluorescent light bulbs that burn out. EH&S recycled **51,088** bulbs, keeping them out of the trash and landfills preventing potential mercury release to the environment.



Most visited EH&S publications



From classroom to classroom

For the past 18 years, EH&S has offered new graduate laboratory coordinators the opportunity to learn about research safety before they lead their labs. This hands-on half day training session provides students with the knowledge and resources they need to get started working in their laboratory. To date, over **1300** people have completed Laboratory Safety Orientation.

Safety professionals of the future

EH&S employs students in key positions impacting the campus and community. In 2015, fire safety students inspected over **6500** fire extinguishers monthly, and to on the responsibility of inspecting AED's and Emergency Response Guides in campus classrooms.

A community of partnerships

In addition to operating the pathological waste incinerator at Veterinary Medicine and safely disposing of **256,114** pounds of material; EH&S provides a community service by destroying over 5000 pounds of illegal substances confiscated by local law enforcement agencies.



256,114 pounds = **135** VW Beetle Bugs

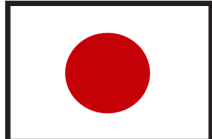
Spanning the globe for safety

The EH&S website not only serves the campus, it provides resources to people around the world. In 2015, the website was visited by people from over **120** countries. Visitors came from France, Japan, the Russian Federation, China, Germany, Great Britain, Canada, and South Korea each stopped by to view our resources.

Top 5 visiting countries



France



Japan



Russian Federation



China



Germany

Time is on your side

The EH&S website connects users to all things EH&S. In 2015, a new responsive design allowed users easier access to resources using mobile devices. The change to a responsive site and other updates to content means 82% of users are able to access information in less than two minutes.

Unique Visitors

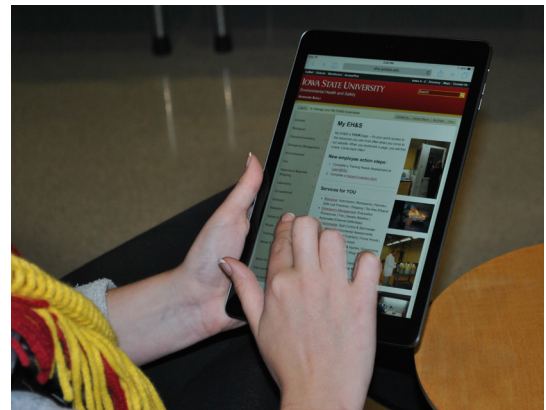
2012 - **50,118**

2013 - **101,039**

2014 - **128,257**

2015 - **118,957**

EH&S currently offers **44** online and **27** classroom courses for campus, community, and world.



CELEBRATING TEN YEARS OF COMBINED SUCCESS!

Agronomy Laboratory
 Nuclear Engineering Laboratory
 Fire Service Institute
 Chemical Waste Handling Facility



Environmental Health and
 Safety Services Building

2005

2015

Talent development

EH&S employed students from across the nation and the world. EH&S employed students from California, Connecticut, Iowa, Illinois, Minnesota, Wisconsin, China, India, Puerto Rico, and South Korea. The valuable safety experience has helped several students land that first job as well as earn course credits.

6
States



5
Countries

Weathering the storm

When weather strikes, seconds matter. Through the use of Twitter, EH&S alerted over **10,000** students of threats from severe weather. Social media provides EH&S a quick and efficient way to keep the campus and community safe.



Teaching a skill, saving a life

EH&S offers hands-on CPR, AED and First Aid classes on a monthly basis to students, and faculty. In 2015, **210** individuals became certified to administer CPR in the event of an emergency.

