

## **CSHEMA Innovation Award Application**

Category: **Safety Culture**

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**University of Washington**

Program: **Laboratory Safety Initiative**

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**Purpose** : The UW launched a two-year Laboratory Safety Initiative (LSI) to build a stronger culture of safety in the 1000+ university research and teaching laboratories on campus with the goal of identifying and overcoming barriers to safety, developing and sharing best practices, and streamlining oversight processes to reduce administrative burden.

**Program Implementation and Details:** EH&S hired a full-time Lab Safety Mentor, a part-time Program Strategist, and appointed an advisory task force to focus on a pilot group of 90 UW laboratories, encompassing 33 scientific departments. These laboratories are representative of complex laboratories using hazardous chemicals with opportunities for improving their safety performance rating. The initiative includes three safety surveys, conducted over a 24-month period, as EH&S staff partnered with the labs to provide coaching, tools, and expertise aimed at improving their safety profiles. The LSI launched in June 2016 to implement new approaches, best practices, tools, and enhance services that could significantly improve laboratory and chemical safety in all University laboratory spaces.

### **Completed Projects Include:**

- Website and newsletter dedicated to pilot group labs and lab safety issues.
- Workshops and discussion events given by safety professionals from peer institutions.
- Policy document outlining the safety responsibilities of all research community members.
- New lab safety and compliance online and classroom trainings for principal investigators (PIs), chemical hygiene officers (CHOs), and department administrators.
- New and enhanced online dashboards for PIs, chairs, deans, and executives as a means for reporting noncompliance and monitoring noncompliance within their department or school.
- Chemical collection events to reduce hazardous waste and legacy chemicals on campus. This resulted in 3,140 lbs. of chemicals and waste being collected.
- Product shows and expos conducted to highlight safety products, tools, and resources available to labs through campus partners as well as EH&S.
- Innovation event for pilot labs to share safety tools and best practices they have developed.
- Development and implementation of Lab Safety Award program.
- Questionnaires to study demographics and collect feedback from pilot labs and control groups.

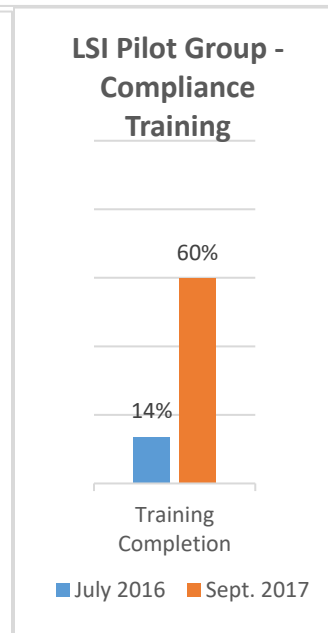
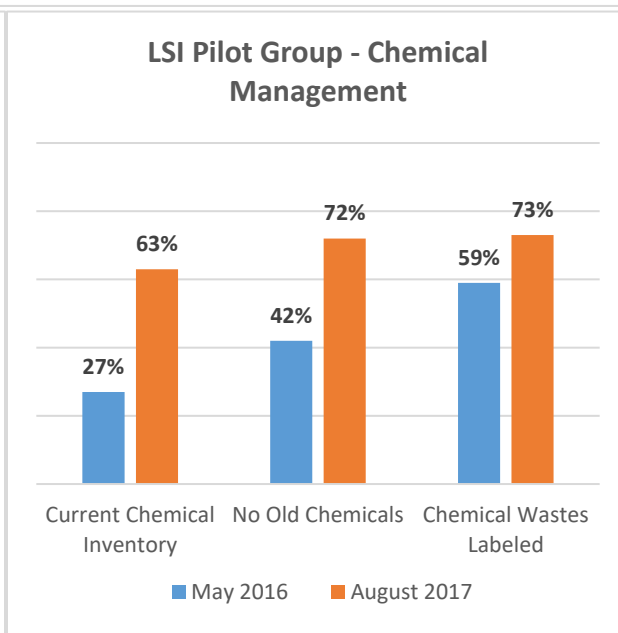
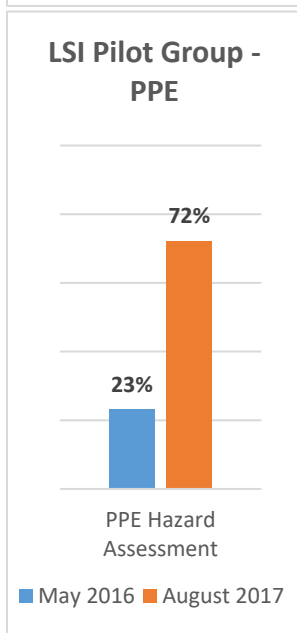
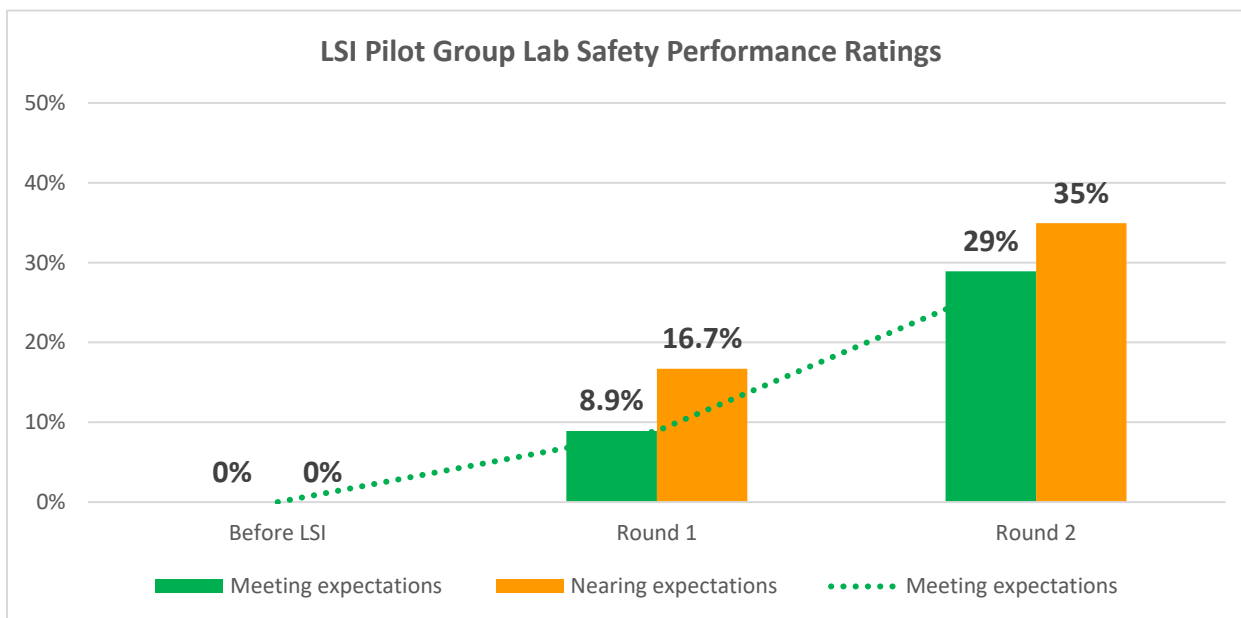
### **Projects In Progress Include:**

- Instructional video on chemical collection request services available.
- Label templates for secondary chemical containers
- PI Welcome Packet from EH&S.

**Total Cost of Program:** including two years of salary for hired staff, equals less than \$300,000

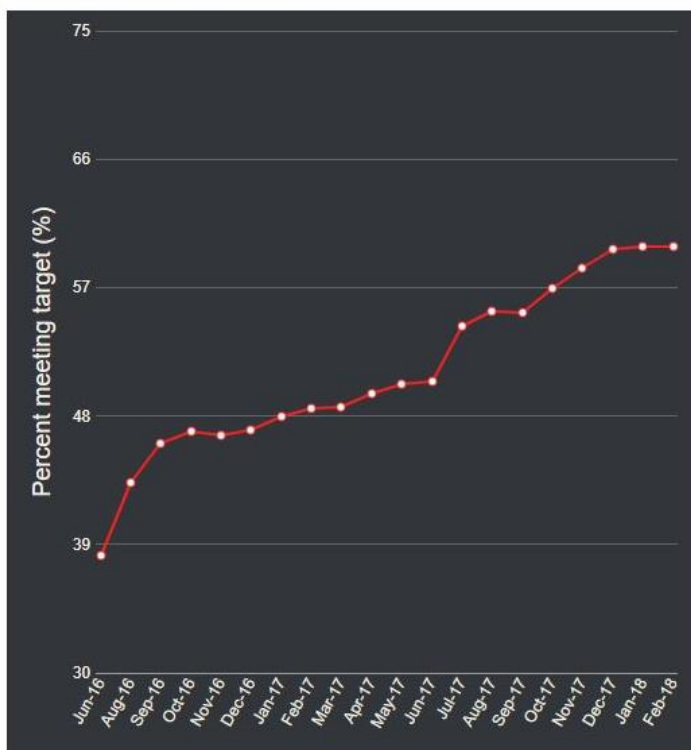
**Observable and Quantifiable Changes in Culture:** In 2015, only 39% of UW labs were meeting expectations around basic safety requirements; lack of training and lack of personal protection equipment (PPE) use were key areas of concern. The Lab Safety Initiative has resulted in increases in compliance on numerous aspects of safety training completion, chemical management, and

adoption of appropriate PPE practices. Pilot labs were surveyed more frequently than the norm and were assigned a lab safety mentor to help identify and address barriers to safety. Approximately two thirds of LSI pilot labs are now meeting or nearing safety expectations, and the average safety performance rating for the group has improved by 22%. It is anticipated that EH&S will be able to favorably influence at least half of those who have yet to improve their safety rating in the final months of the Initiative. Completion of Laboratory Safety and Compliance training by pilot PIs has quadrupled in 18 months, and there has been an increase in the completion of additional EH&S trainings.



Through the LSI, new and improved collaborations have been established with departments and units on campus to help extend the culture of safety beyond the confines of the lab spaces. EH&S has established connections with departments through a new training tailored for administrators, as well as safety presentations offered to their faculty and staff by EH&S. EH&S has improved collaborations with the Office of Research with regards to “Training Requirements” for research staff. Laboratory Safety Dashboards for PIs, chairs, deans, and executives are all new and improved means for reporting noncompliance and allow people to investigate noncompliance within their department or school. As the level of safety performance monitoring has now been elevated to the level of deans and executives, increases in the demand for service and resources from EH&S is expected.

Percent of UW PIs Scoring 85 or higher



Campus-wide communication of safety policies, practices, and expectations has been increased by the LSI team’s new webpages, newsletter articles, creation of a UW Safety Responsibilities Matrix, and collaboration with the Office of Research. Due, in part, to the enhanced tools and level of service developed through the initiative and currently offered to all labs on campus, over 59% of all UW labs are now meeting safety standards.

**Learning Experiences That Can Be Shared:**

- Increasing familiarity with EH&S staff through more frequent surveys (every 8 months) and assigning one person to be the surveyor and point-of-contact for a lab for the duration of the initiative has increased the lab’s responsiveness to and communication about safety issues.

- Unclear roles and responsibilities was identified as the leading barrier to safety that was overcome through increased training for PIs, CHOs, and lab staff.
- Lack of resources, high turnover of staff/students, inadequate facilities/maintenance, and shared lab space were also significant barriers to safety.
- Having a designated lab manager, safety officer, or chemical hygiene officer for a lab space improves safety performance. The number of Initiative pilot group labs with a lab manager increased as their safety performance ratings improved.
- Electronic documentation of laboratory safety performance reports enhances consistency of expectations and service provided.
- Quantifying and reporting safety performance is complex but valuable. By creating a rating scale using safety survey questions to assign a safety performance rating to each survey, safety performance can be monitored and reported in an efficient and consistent manner. These metrics can be reported to chairs, deans, and executives so that their awareness of safety issues is increased, focused, and immediate.
- Online questionnaires are an effective tool for gathering data and information from labs and PIs. They were used during the Initiative to collect information on demographics, safety responsibility, perceived barriers to safety and provide a vehicle for PI's to communicate needs and concerns to the EH&S Lab Survey Team.
- Informing department administrators about lab safety compliance and expectations is appreciated and effective. Administrators do not work in lab spaces, but they assist with purchasing, managing personnel, and safety accountability. A new Lab Safety Compliance training created to inform administrators about compliance issues and expectations for labs on campus was well received.
- Improving communication between department administrators and the EH&S department is valuable for issues such as onboarding new PIs and awareness of safety incidents and violations on campus.