Larry L. Sautter 2019 Award Application

1. **Project Title:** Environment, Health and Safety Training Analytics
2. **Submitter's name, title, and contact information:**
   o Jonathan Joyce, EHS Laboratory Safety Program Manager
   o Donnamarie Smith, EHS Business Development Manager
3. **Names of project leader(s) and team members:**
   o Donnamarie Smith, EHS Business Development Manager
   o Jonathan Joyce, EHS Laboratory Safety Program Manager
   o Lance Scott, EHS Research Safety Division Manager
   o Wendy Scott, Controlled Substance Program Manager
   o Richard Dunning, UCSD Information Technology Services
   o Stewart McMaken, UCB Information Technology Services
4. **Project Summary**

   EHS is responsible for reducing risk and ensuring compliance at UCSD. The challenge was to create an easy to understand site that would help laboratories and EHS evaluate real-time compliance with a variety of different EHS training requirements. The Learning Management System utilized at UCSD does not easily present this information to EHS and Lab Managers.

5. **Project Narrative:**

   Compliance of Training requirements is the number one issue when performing lab inspections. Ensuring lab members have received appropriate training and are up to date is a critical factor in creating a safe and informed working environment and is necessary in reducing risk in the labs and on campus. Our goals in this project were as follows:

   o Make it easier for labs and EHS auditors to evaluate training compliance in real-time, saving significant amounts of time. Estimate that for a standard lab, evaluating training records would take at least 15 minutes, or would be done as a representative group and not be comprehensive.
   o Remove the need for maintaining paper copies of training records.
   o Allow flexibility to create separate training profiles and requirements that are tailored to the varying populations and types of research. For example, engineering labs handling no chemicals but utilizing shop equipment could have a different training profile and not the standard "Lab Safety" course requirements..
   o **Solution**
      1. Created a solution that collects EHS specific profile data of lab members and presents a display indicating training requirements and if those requirements had been met.
      2. Incorporated Training Analytics into Self-Inspection process already completed by researchers prior to EHS audit.
   o **Impact customers/users**

1. Provides easier self-management for researchers to determine what courses are needed and if those course requirements have been met in real-time.
2. Reduced time spent during EHS inspection on looking at paper records
3. Resulted in improved EHS accuracy in evaluating training compliance as observed by a spike in Inspection Findings related to training deficiencies in multiple areas (general lab safety, biosafety)

- **Project Success Measurement**
    1. Feedback from customers and internal EHS inspectors was very positive.
    2. Approximately 2000 inspections are completed every year. Reducing time spent on this issue from 15 minutes to 2 minutes (at most) results in an estimated 430 work hours saved per inspector during inspections.
- **Collaborations with other locations, departments, or teams**
    1. Collaboration across EHS divisions – Research Safety and Business Development and with campus research community.
    2. ITS – EHS collaboration with UC Berkeley in utilizing Web Service Client for LMS.
    3. Customer input drove requirements and design
- **Timeframe of deployment**
    1. Design began in 2015 to address the need of identifying training requirements and communicating those requirements to Lab Managers and EHS.
    2. Technical discussions took place with UCSD and UCB on Web Service Client that was then adapted for use by EHS during the 2015 design review.
    3. Beta Testing of application began in May 2016 and incorporation of feedback from EHS and campus users.
    4. Last production release of Training Analytics was March 2018. There are future requirements that will continue to evolve to help EHS and the Lab meet safety on campus.
- **Briefly describes the technology utilized**
    1. Web Service Client connection between LMS and EHS data on Oracle database.
    2. JAVA application development.
- **Relevant screenshots**
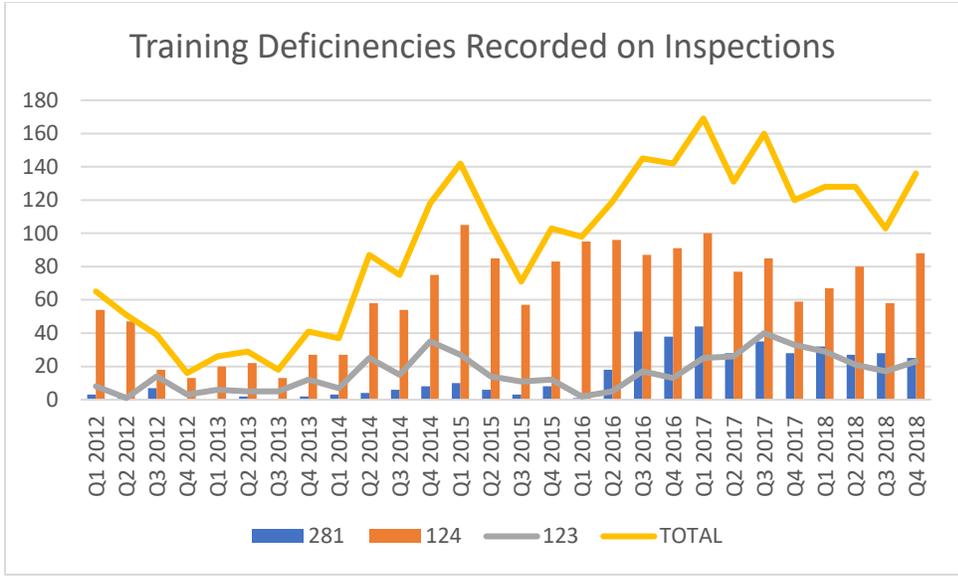
Training Deficinencies Recorded on Inspections

FIGURE 1

Figure 1 graph shows the spike in inspection findings after the release. This application was extremely helpful in assisting EHS auditors in reviewing training compliance accurately and quickly. Also of note – Biosafety training deficiency findings (code 281) significantly increased due to the greater ease of evaluation.
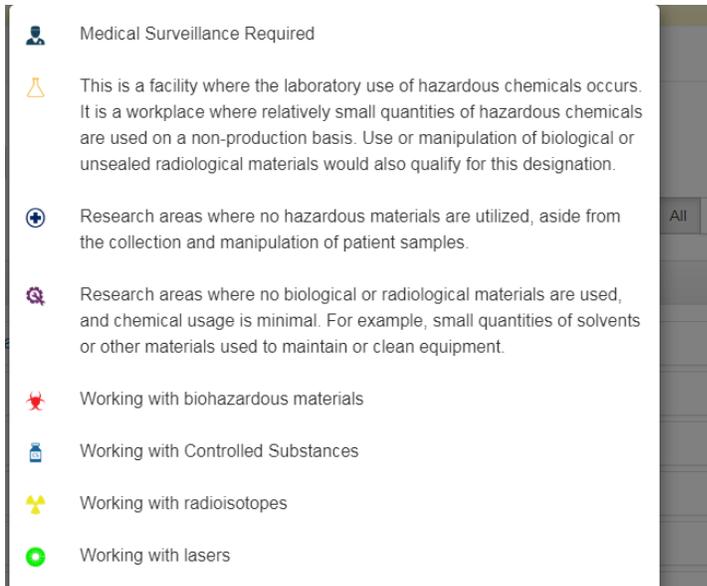

FIGURE 2

Figure 2 is from Training Analytics and provides a brief narrative to the campus community on what the various icons mean and how to interpret them.

FIGURE 3

Figure 3 illustrates the search features that are accessible roles in the lab and in EHS. Users are able to filter the search results for specific requirements.

FIGURE 4

Figure 4 illustrates the results set list for a lab. Each lab group is evaluated on the completeness of training with indicators.

 FIGURE 5

 FIGURE 6

Figure 5 and Figure 6 appear to the right of each lab members name and indicates if all required training has been me with a green check or if training has not been met with a red exclamation point.

Course Requirements	Status	Reason	Date Taken	Expiration Date
❗ ANNUAL LABORATORY HAZARDS	Training expired on 01/09/2019	You are listed as personnel in the research group	01/09/2018	01/09/2019
✔ Controlled Substance eCourse	Training completed on 12/08/2017	You are listed as authorized personnel on	12/08/2017	12/07/2021
✔ UC LAB SAFETY FUNDAMENTALS	Training completed on 01/09/2018	You are listed as personnel in the research group	01/09/2018	01/08/2021

FIGURE 7

Figure 7 illustrates the type of training that has been met and which training is required. It will also provide a reason for the training which usually includes the lab name.