



Laboratory Self Audit Report
Review of 2018

Overview

The Laboratory Self Audit (LSA) is a general safety self-inspection conducted annually by the FIU laboratory community to foster awareness of basic laboratory safety requirements, encourage the review and revision of operations/documentation, and verify that all operations adhere to FIU Policies & Procedures as well as best laboratory practices.

This report provides a review of the information submitted during the Fall 2018 Laboratory Self Audit (LSA) session, which includes the safety concerns and gaps identified and the corrective actions implemented by the Environmental Health & Safety (EH&S) Laboratory Safety Office.

The overall goals for the LSA Program are:

- Promote individual accountability for safety and regulatory compliance
- Increase awareness of environmental health and safety issues and encourage a proactive approach
- Facilitate better understanding of regulatory requirements
- Reduce laboratory related incidents, injuries, violations, and potential fines by encouraging effective communication and training

The LSA focused on improving the dynamic relationship between EH&S and the laboratory community by effectively promoting safety and compliance as a vital function within the laboratories. Using the LSA enabled laboratory personnel to actively identify administrative and operational safety violations and implement corrective actions to reduce risk of laboratory-related injuries or incidents and promote good laboratory practices.

The EH&S Laboratory Safety Office will continue to collaborate with the laboratory community to enrich the FIU culture of safety, educate on the importance of safety and compliance, and promote a safe laboratory environment.

For questions of more information, please contact the Laboratory Safety Office at ehs@fiu.edu.

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Modifications and Enhancements

Below are the modifications and enhancements made between the 2017 and 2018 LSA sessions. These updates provided EH&S with improved visibility for ongoing trends and newly introduced hazards. This has been paramount in maintaining an adaptive and encompassing self-audit program.

- EH&S reintroduced the explanation underneath each question in the online survey to provide explanatory material and streamline submissions.
- EH&S provided more detailed explanations underneath each question to ensure better understanding of the regulatory requirements and to deliver further resources of, FIU processes, programs, policies, and guidelines.
- EH&S enhanced the email links by embedding the recipient (ehs@fiu.edu) and subject lines to facilitate communication with EH&S.
- Encouraged communication with EH&S for participants that required additional assistance in completing the LSA by providing email hyperlinks as well as the option to return to the survey and complete the self-audit.
- Incorporated additional departments as selections.
- Enhanced the biohazard types by adding different classes and adjusting the verbiage.
- Created a custom end-of-survey message and provided the laboratory community with the option of requesting a printout of their submission.
- Incorporated additional email reminders for the laboratory community to ensure participation. These reminders were sent out on with 11 weeks left, 6 weeks left, 2 weeks left, 1 week left, followed by 2 days left and 1 days left.

Initiatives Developed

EH&S utilizes the top compliance concerns identified in the previous year to develop tailored initiatives for the FIU laboratory community. Below are the top compliance gaps identified in 2017 by section; the first line indicates the question and the second line indicates the implemented initiatives.

Administrative Section

<i>Are the Emergency Incidents and/or Injuries Procedures and the Emergency Shutdown Procedures current, displayed, and accessible?</i>
Action: EH&S integrated this topic into the 2019 Laboratory Safety Roundtables to spread knowledge, awareness, and to better understand the underlying issue. EH&S provided guidance on how to report incidents and injuries through the health and safety reporting form (near miss) and safe@fiu.edu . EH&S continues to work with the laboratory community to develop site specific emergency procedures.
<i>Is access into the lab limited or restricted to authorized personnel?</i>
Action: EH&S included this in 2019 Laboratory Safety Roundtables. EH&S reminded occupants of their responsibility to review all personnel with access into space and to be mindful of keeping lab spaces closed (when no occupant is present). This gap was also prioritized as a key task for the FIU Safety Infrastructure Workgroup to ensure that high risk research areas were identified and secured as required.

General Section

<i>The lab does not use extension cords in the space?</i>
Action: This topic was covered in the 2019 Laboratory Safety Roundtables by EH&S's Fire Prevention Officer. Participants voiced their concern of powering multiple device with the limited outlets available. EH&S reminded occupants to utilize surge protectors instead of extension cords. EHS is collaborating with ORED, Academic Space Management, and FMD to address the requests on a case by case basis.
<i>Does your lab have ground-fault circuit interrupter (GFCI) outlets installed close to a water source?</i>
Action: EH&S covered the topic of GFCI in the roundtables. EH&S provided information on low cost alternatives such as portable GFCI which meet compliance requirements. EH&S reminds the laboratory community to communicate with ORED when water sources are installed (i.e. tanks).

Chemical Section

<i>Are there stickers restricting chemical discharge displayed by sinks?</i>
Action: EH&S utilized the LSA to capture a list and distributed the chemical discharger restrictions stickers to those locations that recorded not having it by their sinks.
<i>Are the chemicals stored according to hazard category and compatibility (not alphabetically)?</i>
Action: EH&S covered this topic in detail for the 2019 roundtables. EH&S collaborated with different vendors to discuss topics during safety seminars/workshops. EH&S is conducting spot inspections to ensure compliance and/or spread knowledge to space occupants.

Initiative Developed Continued

Hazardous Waste & Satellite Accumulation Area Section

<i>Is there less than 55 gallons of waste stored in the SAA?</i>
Action: EH&S provided educational information during SAA inspections conducted throughout various of FIU's sites (i.e. MMC, BBC, & EC). EH&S continues to conduct walkthroughs of other areas to discover SAA and continues to educate occupants on regulatory compliance.
<i>Is hazardous waste kept in a secondary containment?</i>
Action: EH&S has reviewed and revamped policies and procedures for SAAs and hazardous waste protocol. EH&S continues to educate on adherence to regulations.
<i>Are incompatible waste segregated by separate secondary containers?</i>
Action: EH&S is actively working with students, faculty, and staff to spread knowledge and awareness of incompatible waste, regulatory fines, and regulatory compliance.

Top Compliance Concerns Identified in 2018

EH&S focuses efforts to address the identified concerns through safety campaigns, roundtables, and safety initiatives.

Administrative Section

Question	Percentage of Failure
The following documentation has been reviewed by all lab occupants and is current, displayed and accessible: Emergency Incident and/or Injury Procedures	19%
The following documentation has been reviewed by all lab occupants and is current, displayed and accessible: Emergency Evacuation Procedures	19%
The following documentation has been reviewed by all lab occupants and is current, displayed and accessible: Emergency Shutdown Procedures	17%

General Section

Question	Percentage of Failure
The lab does not use extension cords in the space?	33%
Does your lab have ground-fault circuit interrupter (GFCI) outlets installed close to a water source?	17%
Are there emergency spill response supplies available and appropriate for the type of materials handled within the lab?	6%

Chemical Section

Question	Percentage of Failure
Are there stickers restricting chemical discharge displayed by sinks?	13%
Are the peroxide forming materials dated to show when it was received and opened?	9%
Are the peroxide forming materials checked for peroxides OR disposed of at least every 6 months?	9%

Hazardous Waste & Satellite Accumulation Area Section

Question	Percentage of Failure
Are incompatible wastes segregated by separate secondary containers?	5%
Is hazardous waste kept in secondary containment?	4%
Is the SAA located near the point of generation and away from sinks and drains?	2%

Participation Analysis

Participation by Department

Participants	Departments
69.5*	Biology
37.5*	Chemistry
19	College of Medicine: Immunology
16	Biomedical Engineering
14	Earth and Environment
13.5*	Mechanical and Materials Engineering
10	Applied Research Center
9	Physics
7	Institute of Water and Environment/ Southeast Environmental Research Center
5	College of Medicine: Human and Molecular Genetics
5	International Forensic Research Institute
4	College of Medicine: Cell Biology and Pharmacology
4	Dietetics and Nutrition
4	Environmental and Occupational Health
4	Environmental Health Sciences
3	Civil and Environmental Engineering
3	Engineering: Advanced Materials Engineering Research Institute
2.5*	Electrical and Computer Engineering
2	Chemistry and Biochemistry
2	College of Medicine
2	Environmental Health & Safety
1	Biochemistry
1	Center for the Study of Matter at Extreme Conditions
1	Dept of Epidemiology
1	International Hurricane Research Center
1	Office of Research and Economic Development
1	Psychology
4	Participants requested assistance in completing the LSA
Total	246

*Participants that identified two (2) departments had their scores split between the departments (0.5 each).

Laboratory Self-Audit

2018 Data Analysis


The Laboratory Self Audit (LSA) is a general safety self-inspection conducted annually by FIU laboratories.

The 2018 LSA yielded the highest participation to date. 2018's data shows:


 **242** Total Submissions

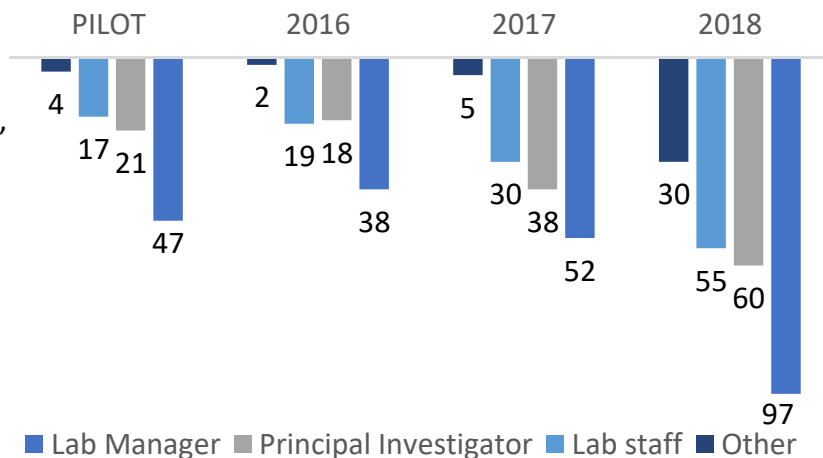
Annual Participation Analysis By Role

The figure on the right displays annual submissions by the participant's role or relationship to the space. In comparison to 2017, 2018 yielded a:

 **94%** Increase in Participation

Through the years, Laboratory Managers have participated the most; from 2017 to 2018, there was an:


 **87%** Increase in Lab Manager Participation



Inventory Analysis of Special Hazards

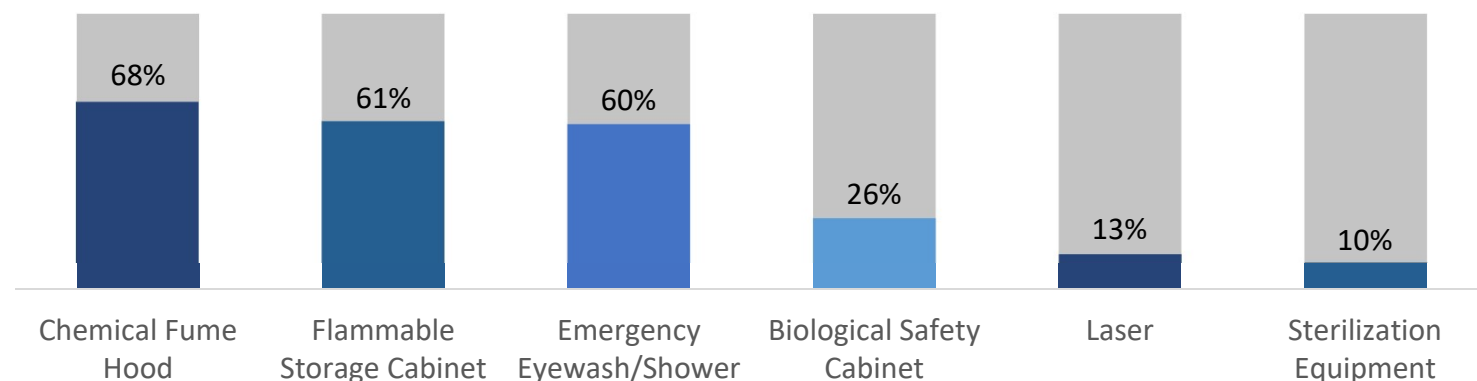
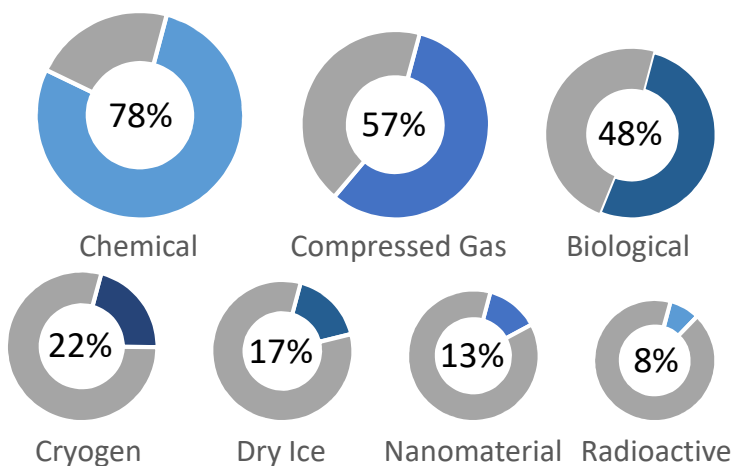
Participants identify the types of special hazards handled, used, stored, or operated in their laboratories.

In comparison to 2017, in 2018 there was a:

 **96%** Increase in Identification of Special Hazards

Illustrated on the left are the 2018 percentages of identified Hazardous Materials.

Displayed below are the 2018 percentages of identified Safety Equipment.



Biological Material Analysis

52% of all participants identified handling, storing, using, or producing biological materials; displayed below is a breakdown of the types of biological materials. **In 2017, the top 3 biohazardous materials were Recombinant DNA (50%), Animals (46%), and Materials Derived from Humans (44%).**



Chemical Material Analysis

78% of all participants identified handling, storing, using, or producing chemicals; illustrated below is a breakdown of the class of chemicals. **In 2017, the top 3 chemical hazards were Flammables (82%), Acids (76%), and Irritants (67%).**

