

Laboratory Self-Audit Report for 2017

Overview

The following report provides a review of the information submitted during the Fall 2017 Lab Self-Audit (LSA) Session, the safety concerns and gaps identified, and the corrective actions implemented by the Environmental Health & Safety (EH&S) Lab Safety Office.

The overall goals of implementing the LSA program were to:

- Promote individual accountability for safety and regulatory compliance
- Increase awareness of and encourage a proactive approach to environmental health and safety issues
- Facilitate a better understanding of regulatory requirements
- Reduce lab-related incidents/injuries/violations/fines through 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 lab. Using the LSA allowed laboratory personnel to actively identify safety violations and implement corrective actions to reduce lab-related injuries/risks and promote good lab practices.

The EH&S Lab Safety Office will continue to collaborate with the laboratory community to maintain a culture of safety, AND educate on the importance of safety/compliance in the lab environment.

For questions or more information, please contact the Lab Safety Office at (305) 348-3387 or ehs@fiu.edu .

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Modifications and Enhancements made to the 2017 LSA Checklist and Process

Modifications were made to the checklist and process based on the following: internal assessment and findings, feedback documented via the 2016 LSA Feedback Survey, and input received from key stakeholders who may benefit from the information collected.

- EH&S extended the amount of time allowed to complete the LSA to account for researchers/lab staff on leave, teaching schedules, grant deadlines, or other situations which may impact the time completion and submission of the survey.
- Users were offered the option of requesting onsite assistance if they did not feel comfortable completing the survey online.
- EH&S requested input from the Office of Research & Economic Development (ORED) based on compliance committee and research integrity requirements (IBC, IRB, IACUC, DURC).
- The LSA was mandatory for all research lab spaces; it replaced the EH&S general safety inspection requirement. However, onsite compliance inspections were conducted for special hazards (controlled substances, BSL2, radiation, laser, nanomaterials, x-ray, etc.) and areas with a history of non-compliance.
- Users had the option of modifying submitted surveys if they determined the information was incorrect or missing. This option was managed by EH&S to prevent any changes that were not approved.
- EH&S condensed the format of the LSA to exclude the question explanations. This streamlined the appearance of the survey and required the user to refer to the LSA preview for guidance.
- EH&S created the Lab Audit survey (LA) for EH&S professionals to use as a “check and balance” for the LSA and to record onsite visits.
- EH&S identified the need for guidance on emergency procedures and required documents. The LSA was updated to provide additional information on documents/procedures that are required to be reviewed by lab occupants and posted in the lab space.
- EH&S identified that compressed gas cylinders should be classified as a special hazard due to the vessel being pressurized, and the high potential for creating hazardous atmospheres.

Initiatives Developed to Address Top 2016 Compliance Concerns

Administrative Section

<p><i>Are the emergency procedures available and/or posted?</i></p> <p>Action: EH&S included this compliance concern as one of the discussion topics during the 2017 Roundtable Sessions. Users stated that they were not sure what procedures should be posted. EH&S provided a list of general procedures for spill response, injuries/incidents, and emergency evacuations (available in section 10 of the Chemical Hygiene Plan and Section 9 of the Biosafety Manual). EH&S also offered to review current procedures and assist procedure development. The LSA was updated to include a more detailed list of required emergency procedures.</p>
<p><i>Is the signage appropriate for the hazards within the lab?</i></p> <p>Action: EH&S implemented the Lab Emergency Signage Program. The EH&S Emergency Signage Program is a mandatory initiative that ensures FIU is compliant with the Globally Harmonized System (GHS), National Fire Prevention Association (NFPA), and Hazard Communication regulatory requirements. The signage displays a primary and alternate contact for the space, special hazard pictograms, GHS pictograms, Personal Protective Equipment (PPE) pictograms, and important emergency contact numbers.</p>

General Section

<p><i>Does your lab have ground-fault circuit interrupter (GFCI) outlets installed close to a water source?</i></p> <p>Action: EH&S identified this gap during the LSA and 2017 Roundtables, and used this as a platform to spread awareness to users. EH&S continues to work closely with Facilities and various compliance committees to address areas that are required to have GFCI outlets.</p>
<p><i>Does the refrigerator have a current inventory of the item(s) stored within?</i></p> <p>Action: This concern was a topic of discussion during the 2017 EH&S Roundtables. EH&S observed an improvement with compliance (no longer a top compliance concern). EH&S continues to address this issue via random lab compliance "spot checks".</p>

Chemical Section

<p><i>Are the chemicals stored according to hazard category and compatibility (not alphabetically)?</i></p> <p>Action: EH&S (in partnership with Fisher Scientific) hosted a workshop focusing on the importance of proper chemical storage. EH&S is also addressing this issue via lab compliance inspections.</p>
<p><i>Are flammable materials being stored at least 48" from the lab exit and 36" from electrical equipment?</i></p> <p>Action: EH&S Lab Safety and Fire Safety are addressing this issue by conducting site assessments and working with the user to ensure proper storage of flammable materials.</p>

Hazardous Waste & Satellite Accumulation Section

<p><i>Is hazardous waste kept in a secondary containment?</i></p> <p>Action: EH&S implemented a safety campaign to educate users on the proper handling and storage of hazardous waste. EH&S personnel is conducting onsite training and providing educational materials and updated procedures to create a more streamlined process for users.</p>
<p><i>Is the date on the hazardous waste label left blank while it is being accumulated in the SAA?</i></p> <p>Action: EH&S adjusted the explanation to incorporate the waste relocation requirements. In addition, EH&S implemented a safety campaign to educate users on SAA requirements. EH&S personnel is conducting onsite training and providing educational materials and updated procedures to create a more streamlined approach for users.</p>

Top Compliance Concerns By Sections Identified In 2017

EH&S will focus efforts to address the identified concerns via upcoming safety campaigns, roundtables, and safety inspections.

Note: The items in “red” are classified as university-wide issues that pertain to the current use of the space and/or user responsibility. These items are being reviewed and addressed in collaboration with Facilities Management, Key Control, Office of Research & Economic Development (ORED) and Academic Space Management.

Administrative Section

Failure in %	Questions asked
13 %	Emergency Incidents and/or Injuries Procedures <i>(Emergency Procedures must be posted, accessible and reviewed by lab staff & must be updated as needed or as procedures change. Lab staff should be trained on what to do, where to go, and who to notify.)</i>
12 %	Emergency Shutdowns Procedures <i>(Emergency Procedures must be posted, accessible and reviewed by lab staff & must be updated as needed or as procedures change. Lab staff should be trained on what to do, where to go, and who to notify.)</i>
6 %	Is the access into the lab limited or restricted to authorized personnel? <i>(Per FIU Security of Special Hazards Policy, access to lab areas should be restricted to lab personnel only. Lab doors should not be propped open unless lab staff is present. Unauthorized personnel should not have access to the lab area unless lab staff is present. Check the key card access records every 4-6 months to ensure that unauthorized personnel are not listed. To prevent unauthorized entry by custodial personnel when the lab is closed, place the trash bins outside of the lab entrance door.)</i>

General Section

Failure in %	Question asked
25 %	The lab does not use extension cords in the space. <i>(Extension cords are fire and tripping hazards and are prohibited at FIU.)</i>
21 %	Does your lab have ground-fault circuit interrupter (GFCI) outlets installed close to a water source? <i>(GFCI is a fast acting circuit breaker designed to shut off electric power in the event of a ground-fault within as little 1/40 of a second [OSHA, 29 CFR 1926.404]. All electrical receptacles by the sink or by open water sources (i.e. aquariums) must incorporate GFCI outlets. A portable GFCI outlet can be used if the water source is not permanently installed. To have a GFCI outlet installed, contact Facilities Management to place a work order by either email workmanagement@fiu.edu or contact (305)348-4600.)</i>

Chemical Section

Failure in %	Questions asked
6 %	Are there stickers restricting chemical discharge displayed by sinks? <i>(Stickers must be visible and posted at each sink. If you are missing (a) sticker(s) and/or want more information email ehs@fiu.edu ; subject line "LSA: Chemical Discharge Stickers".)</i>
4 %	Are the chemicals stored according to hazard category and compatibility (not alphabetically)? <i>(For storage requirements refer to the chemical's/material's SDS label. For more information email ehs@fiu.edu; subject line "Chemical Safety Program ".)</i>

Hazardous Waste & Satellite Accumulation Section*

Failure in %	Question asked
9 %	Is there less than 55 gallons of waste stored in the SAA? <i>(SAA are not permitted to store more than 55 gallons of hazardous waste.)</i>
4 %	Is hazardous waste kept in a secondary containment? <i>(The secondary containment must be compatible with the material and should be able to hold 110% of the hazardous waste.)</i>
4 %	Are incompatible waste segregated by separate secondary containers? <i>(Only keep compatible waste in the same secondary container within the SAA to prevent potential chemical reactions. If waste is incompatible, use a separate secondary container for each incompatible waste. For more information email ehs@fiu.edu ; subject line "LSA: Hazardous Waste Compatibility".)</i>

* EH&S began the SAA Standardization Campaign in June 2018 to address the concerns identified in the "Hazardous Waste & Satellite Accumulation Section". The campaign focuses on new streamlined procedures pertaining to waste storage, disposal, and signage; taking a more hands-on approach to training users on proper waste management.

Participation Analysis

Participants by Departments

Participants	Department
10	Applied Research Center (ARC)
12	Bio Medical Engineering (BME)
24	Biology
13	Chemistry
4	Dietetics & Nutrition
14	Earth & Environment
1	Electrical and Computer Engineering
4	Environmental & Occupational Health (EOH)
1	HW College of Medicine (COM): Cellular Biology and Pharmacology
7	HW College of Medicine (COM): Human and Molecular Genetics
8	HW College of Medicine (COM): Immunology
1	Hospitality & Tourism Management
4	International Forensic Research Institute
2	Mechanical & Materials Engineering (MME)
1	Psychology
2	Physics
TOTAL 108	
4	Participant requested assistance in completing the LSA
27	Incomplete submissions
TOTAL 139	31 + 108 = 139

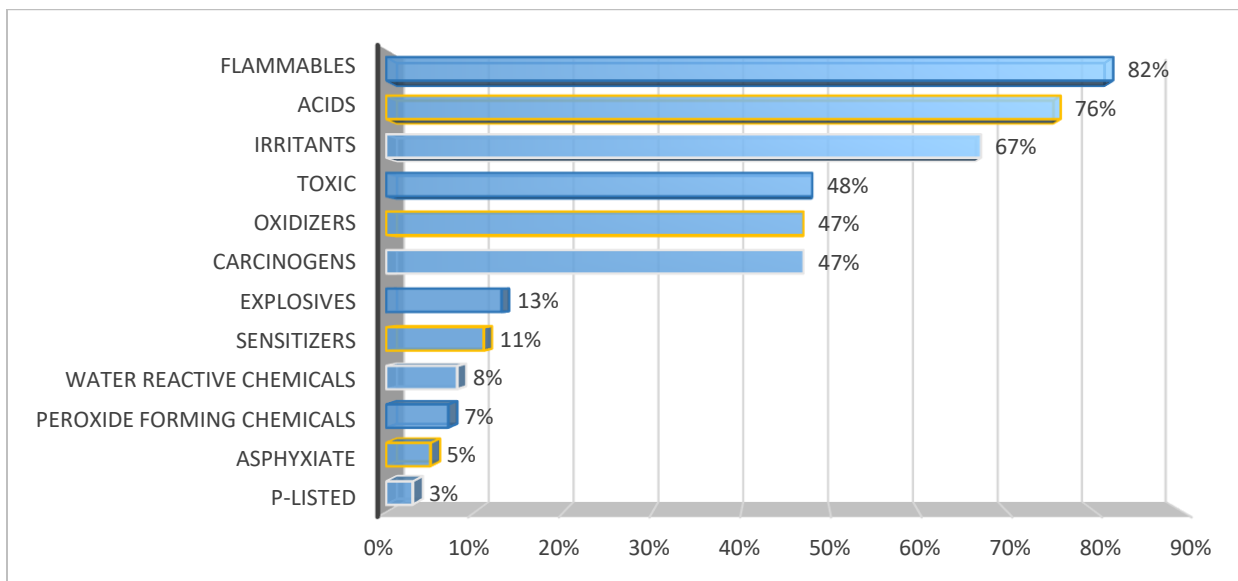
Relationship to Space

	Pilot	2016	2017
Principal Investigators:	23%	25%	34%
Lab Managers:	48%	48%	41%
Lab Staff:	18%	24%	21%
Other*:	11%	3%	4%
*Grad Student (2.7%)			

Inventory of Spaces

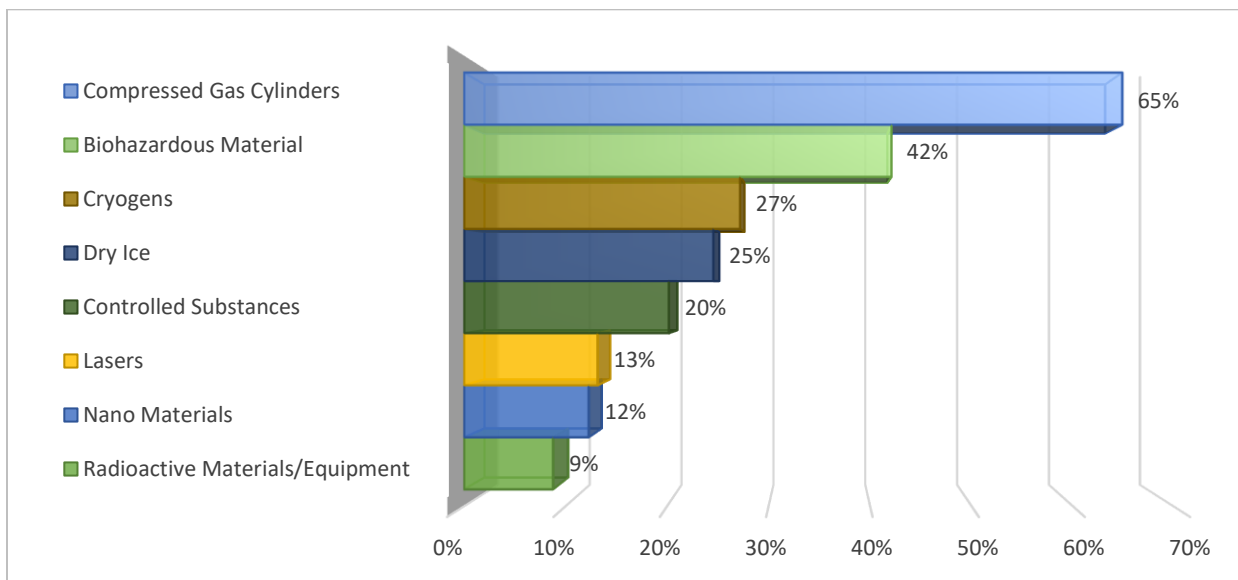
Chemicals Hazards

NOTE: The chemical hazard with the highest percentage reported in the 2016 LSA was acids (53%). The top three chemical hazards were acids (53%), irritants (45%), and toxics (44%).



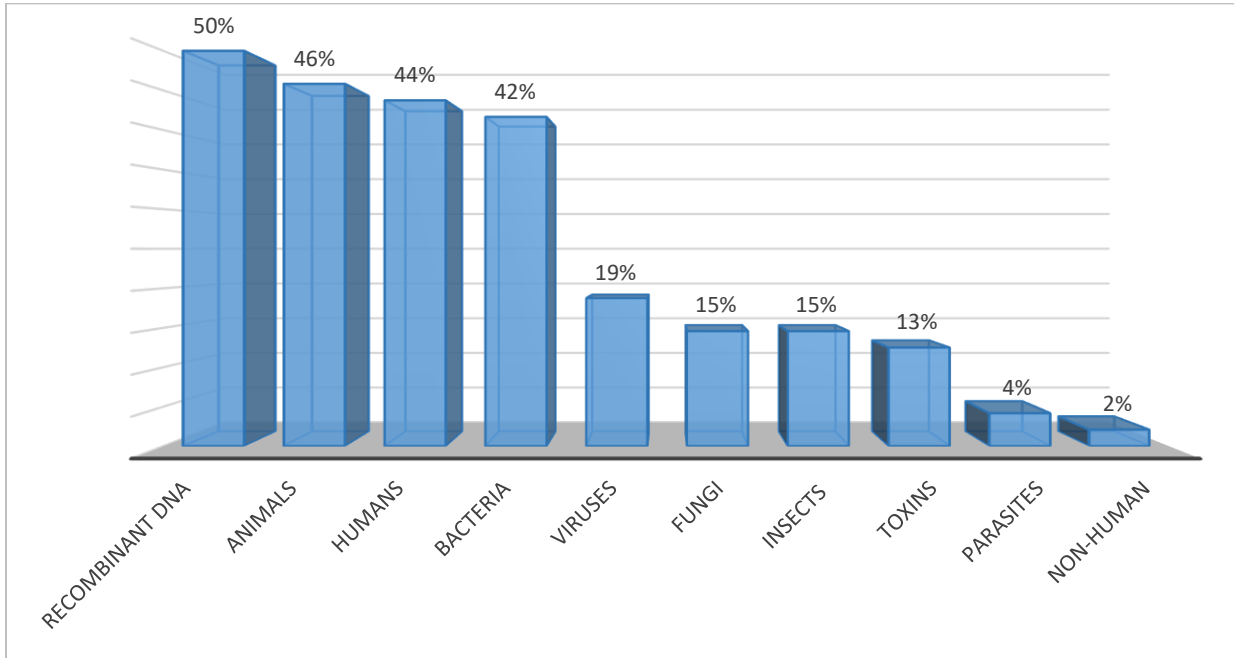
Special Hazards

NOTE: The special hazard with the highest percentage reported in the 2016 LSA was biohazardous materials (36%). The top three special hazards were biohazardous materials (36%), lasers (12%), and nano materials (10%). Note: compressed gas cylinders were previously identified as safety equipment/control.



Biohazardous Materials Breakdown

NOTE: The biohazardous material with the highest percentage reported in the 2016 LSA was human materials (46%). The top five biohazardous materials were human (46%), bacteria (32%), recombinant DNA (24%), animals (16%), and viruses (10%).



Safety Equipment/Controls

NOTE: The safety equipment/controls with the highest percentage reported in the 2016 LSA was emergency wash units (64%). The top three safety equipment/controls were emergency wash units (64%), fume hoods (62%), and biosafety cabinets (30%).

