FIU Environmental Health & Safety
FLORIDA INTERNATIONAL UNIVERSITY
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Laboratory Self-Audit (LSA) Report for 2016

Environmental Health & Safety (EH&S) launched the LSA in 2016 to spread awareness of safety and regulatory compliance.

Modifications and Enhancements made to the LSA Checklist and Process

- Initially four (4) groups were created with the same duration of two (2) weeks at different time intervals; departments were targeted through the department heads in hopes they would enforce the LSA.
    - The last group was opened to the target departments and any participants that missed deadlines.
- In the fall alterations were made to remove group targeting and have one (1) session available extending the time frame for submissions.
- Gaps in the checklist were identified through an internal analysis as well as through feedback from participants; modifications were made to the checklist including but not limited to:
    - Adding and dividing sections (incorporating safety equipment section, and dividing administrative from general).
    - Adding and removing questions (questions were examined and adjusted to ensure only the necessary questions were asked).
    - Incorporating additional answers (adjusting answers to incorporate “N/A” and multiple answers).
    - Expanding on the explanations under each question (to include additional resource links, references to regulatory agencies, quick facts guide, and email links that automated according to the question).
- During the Fall, EH&S offered the previous participants an opportunity to carry over their initials submissions by revising and answering the additional questions.

Table of Contents

PARTICIPATING DEPARTMENTS

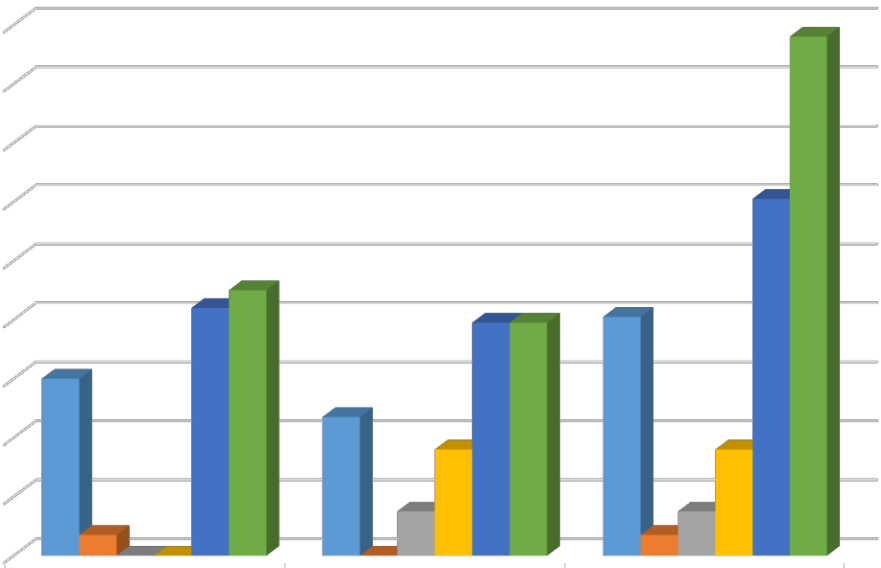
Participants	Department
20	Applied Research Center (ARC)
12	Bio Medical Engineering (BME)
27	Biology
8	Biology/Chemistry
1	Center for the Study of Matter at Extreme Conditions (CeSMEC)
17	Chemistry
8	Dietetics & Nutrition
21	Earth & Environment
7	Electrical and Computer Engineering
2	Environmental & Occupational Health (EOH)
2	Environmental Health & Safety (EH&S)
4	HW College of Medicine (COM): Cellular Biology and Pharmacology
9	HW College of Medicine (COM): Human and Molecular Genetics
6	HW College of Medicine (COM): Immunology
13	Mechanical & Materials Engineering (MME)
3	Psychology
5	Southeast Environmental Research Center (SERC)
4	Southeast Environmental Research Center (SERC): Biology

TOTAL 176

PARTICIPATION

	Spring	Fall	Total
Participants:	60	47	81 *26 submitted in both sessions
Incomplete Submissions:	7	0	7
Carry Over Participants:	0	15	15
Carry Over Submissions:	0	36	36
Locations:	84	79	121 *42 submitted both sessions
Submissions:	90	79	176

Note: some participants included multiple areas in one submission.



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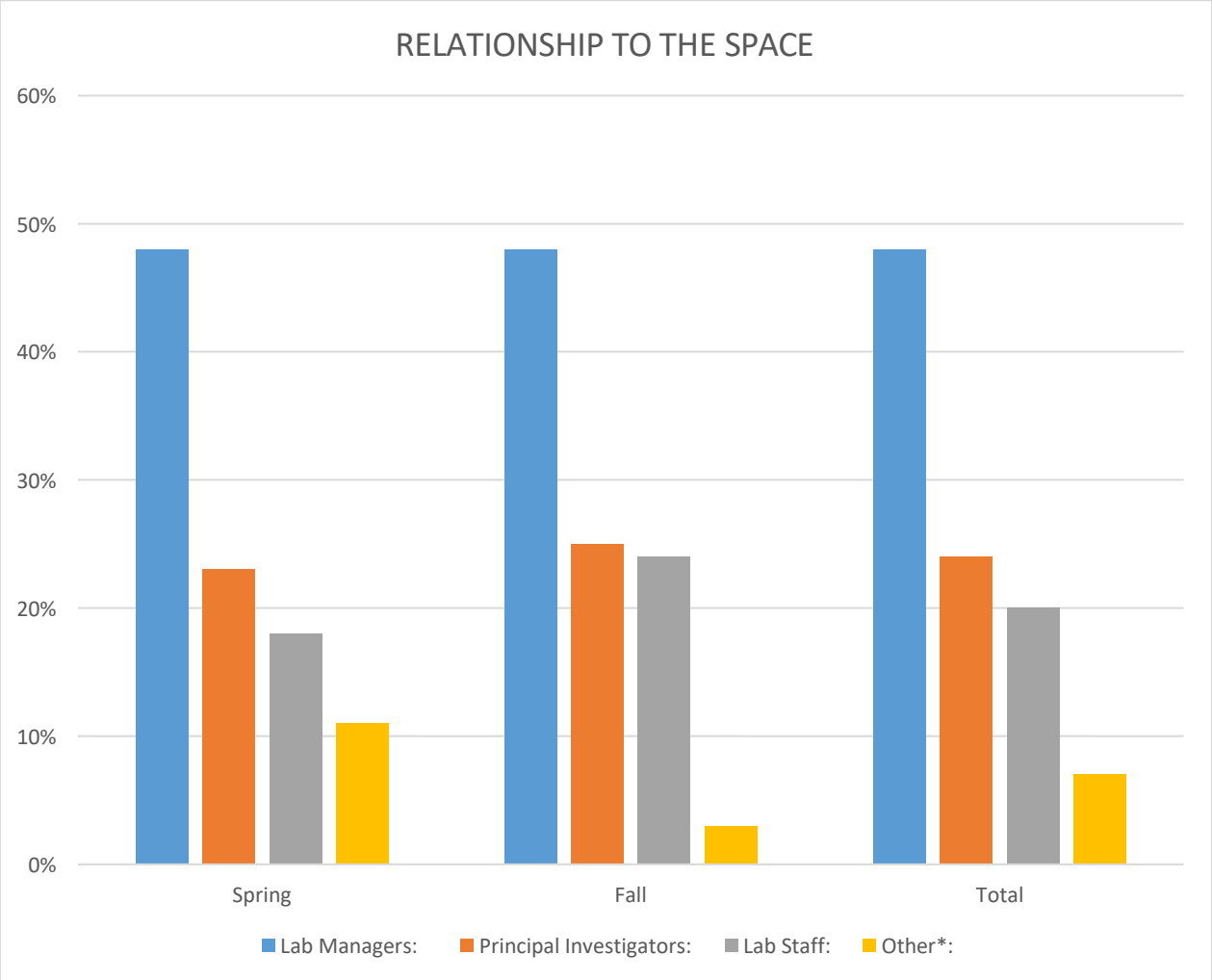
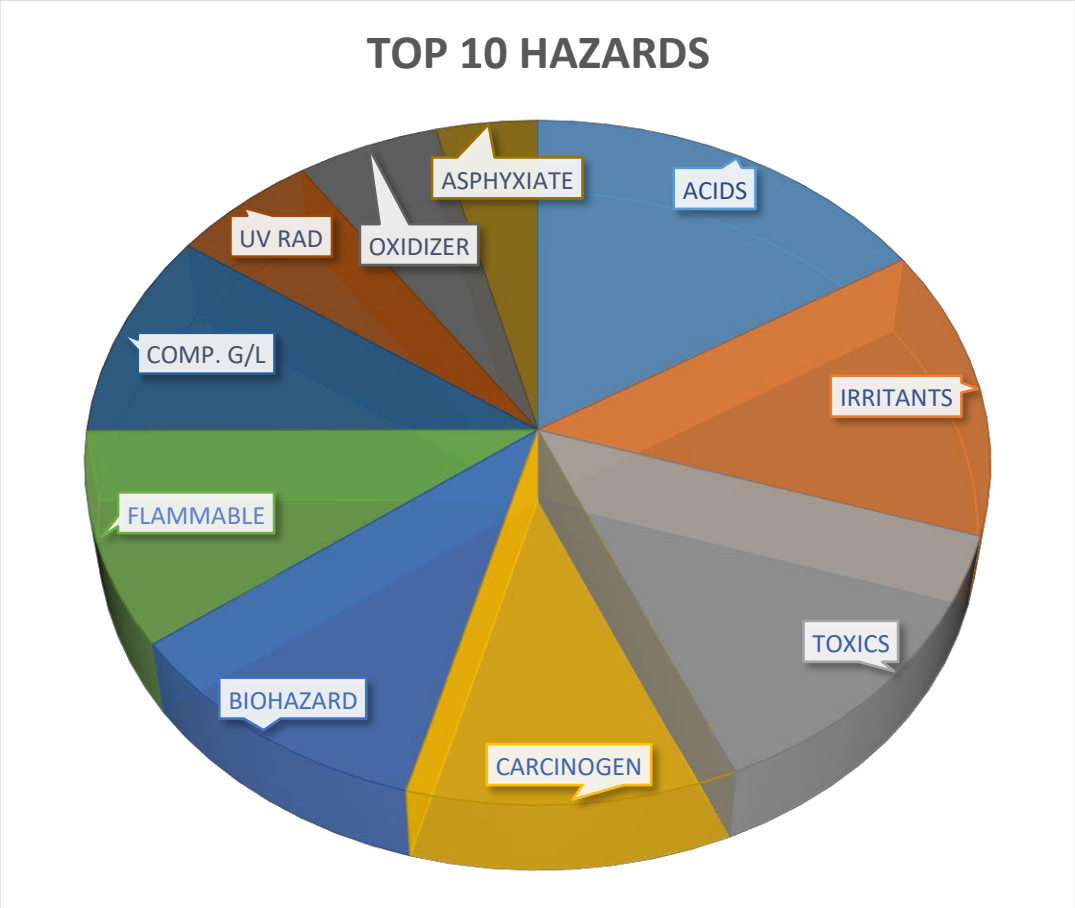
RELATIONSHIP TO THE SPACE

	Spring	Fall	Total
Principal Investigators:	23 %	25 %	24 %
Lab Managers:	48 %	48 %	48 %
Lab Staff:	18 %	24 %	20 %
Other*:	11 %	3 %	7 %

*Other Includes: Associate Scientist; Grad Student; Grant Coordinator/Faculty Administrator/ Lab Technician / No answer / PhD. Candidate



TOP HAZARDS IDENTIFIED



HAZARD		HAZARD	
ACIDS	53%	NANO MATERIALS	10%
IRRITANTS	45%	MICRO-WAVE PRODUCING EQUIPMENT	9%
TOXICS	44%	WATER REACTIVE MATERIALS	9%
CARCINOGEN	35%	HIGH VOLTAGE MATERIALS	8%
BIOHAZARD	35%	RADIOACTIVE MATERIALS	8%
FLAMMABLE	33%	PEROXIDE FORMING MATERIALS	5%
COMPRESSED GASES OR LIQUIDS	32%	HIGH ELECTRIC FIELDS	4%
UV RADIATION PRODUCING EQUIPMENT	19%	EXPLOSIVES	3%
OXIDIZER	18%	HIGH MAGNETIC FIELDS	2%
ASPHYXIATE	13%	X-RAY PRODUCING EQUIPMENT	1%
CRYOGENIC MATERIALS	13%	IR RADIATION PRODUCING EQUIPMENT	0%
SENSITIZERS	13%	RADIO-WAVE PRODUCING EQUIPMENT	0%
LASER EQUIPMENT	10%	OTHER	0%

TOP TWO (2) COMPLIANCE GAPS BY SECTIONS

Administrative Section

Failure in %	Questions asked
8 %	Are the emergency procedures available and/or posted? *(Emergency procedures for hazardous spills, incidents, injuries, evacuations, and lab shutdowns should be posted, accessible to and reviewed by lab staff, and updated as needed or as procedures change. Lab staff should be trained on what to do, where to go, and who to notify.)*
2 %	Is the signage appropriate for the hazards within the lab? *(Signage should be appropriate for the type of hazards present in the lab. Signage should be posted on the entrances to the lab areas and any equipment where the hazards are used or stored, and should be consistent with the GHS requirements. Warning signs should be posted where special or unusual hazards exist.* *For more information refer to the FIU Chemical Hygiene Plan or email ehs@fiu.edu; subject line "Lab Signage")*

General Section

Failure in %	Question asked
9 %	Does your lab have ground-fault circuit interrupter (GFCI) outlets installed close to a water source? *(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.)*
7 %	Does the refrigerator have a current inventory of the item(s) stored within? *(An inventory of the items stored in the refrigerator/freezer should be posted on the unit's door. If it is hazardous chemicals, each chemical must be listed and correspond with the information provided in EHS Assist. Biological samples must be labeled as the type of sample (i.e. human blood, cell lines, etc.). Radioactive materials must be labeled for the type of radioactive material.)*

Chemical Section

Failure in %	Question asked
3 %	Are the chemicals stored according to hazard category and compatibility (not alphabetically)? *(For storage requirements refer to the chemical's/material's SDS label. For more information email ehs@fiu.edu; subject line "Chemical Safety Program ")*
3 %	Are flammable materials being stored at least 48" from the lab exit and 36" from electrical equipment? *(Flammable materials must be stored in a flammable storage cabinet, or in a laboratory fume hood. (Note: do not permanently store any chemicals inside the fume hood. If the lab is temporarily storing flammable material in the fume hood then: storage of other materials/chemicals are not permitted, conducting experiments inside the same hood is not permitted, and/or the acceptable amount is as small as practical.) Flammable materials must be stored at least 48 inches away from doors or emergency exits and 36 inches away from electrical equipment.)*

Hazardous Waste & Satellite Accumulation Section

Failure in %	Question asked
3 %	Is hazardous waste kept in a secondary containment? *(The secondary containment should be compatible with the material and should be able to hold 110% of the hazardous waste.)*
2 %	Is the date on the hazardous waste label left blank while it is being accumulated in the SAA? *(The "Accumulation Start Date" is the date in which the container is full and/or ready to be moved to the Central Accumulation Area (CAA); hazardous waste must be transferred 72 hours from that date to the CAA. The date must be added when one (1) 55 gallon drum is reached or exceeded; OR one (1) quart of p-listed (acute) waste is reached or exceeded.)*

SPECIAL HAZARD AND SAFETY EQUIPMENT ANALYSIS

Labs that handle, store, or use:

36 % Biological Hazards (top 5 listed below)
- 46 % Human
- 32 % Bacteria
- 24 % Recombinant DNA
- 16 % Animals
- 10 % Viruses

12 % Lasers

10 % Nano materials

9 % Radioactive materials

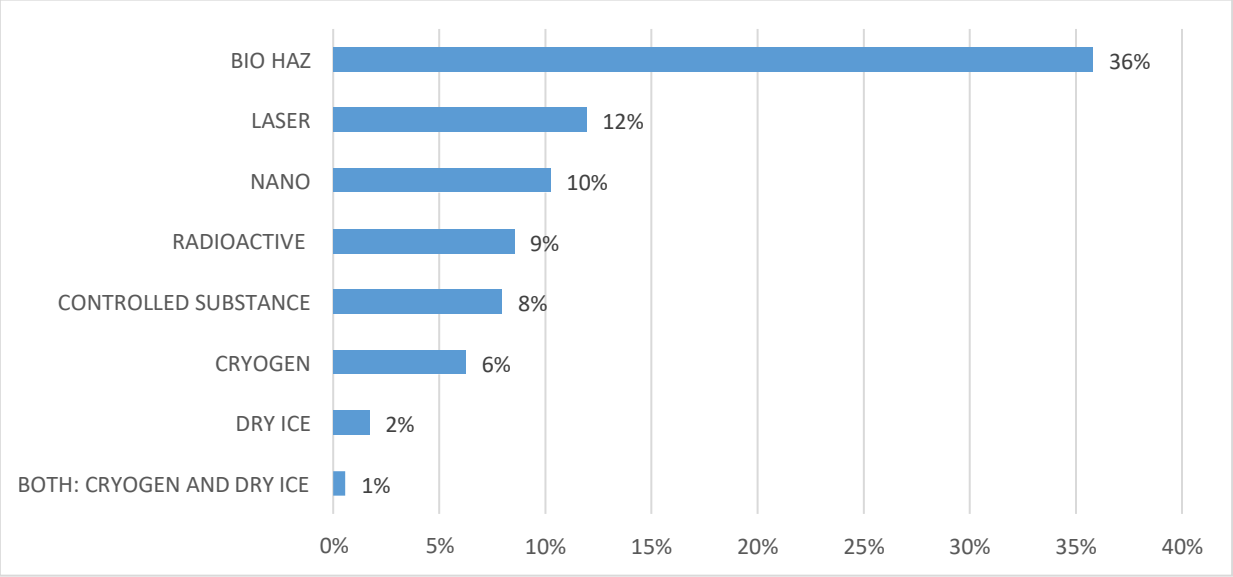
8 % Controlled Substances

6 % Cryogen*

2 % Dry Ice*

1% Cryogen and Dry Ice*

*Note: question was not asked during Spring Session



Equipment/machines in space:

64 % Emergency Wash Units (Ex. safety shower, eyewash, etc.)

62 % Fume Hoods

56 % Gas cylinders

30 % Biological Safety Cabinet

12 % Equipment/Machines that are capable of injuring a worker *

4 % Sterilization Equipment*

*Note: question was not asked during Spring Session