

March 21, 2018

From: Samir Shahat, Director, Environmental Health and Safety

Subject: Executive Summary of the 2017 Laboratory Safety Commitment and Target Areas Initiative for Teaching and Research Labs

Environmental Health and Safety launched the 2017 Laboratory Safety Commitment and Target Areas Initiative for Teaching and Research Labs in early 2017. Five areas were chosen to be the focus of the 2017 Lab Target Area Program which include:

- Chemical waste storage
- Personal protective equipment (PPE)
- Sharps and biohazard handling and disposal
- Maintain access to emergency equipment (e.g. showers, eyewashes, fire extinguishers, fire sprinklers, etc.)
- Proper fume hood use

The Association of Public and Land Grant Universities (APLU) formed a task force in 2015 that addressed how to implement an effective lab safety program within universities. The task force was formed as a result of ongoing accidents that led to injuries in labs in academic settings. Based on the recommendations of this task force, the Vice Presidents of Research and Infrastructure distributed an email to Deans, Directors, and Department Heads throughout the university titled "2017 Laboratory Safety Commitment and Target Areas for Teaching and Research Labs," in January 2017. The email stressed the university commitment to provide a safe environment for students, faculty and staff. A timeline was included in the email for the Lab Safety Commitment. The VPs asked Deans, Directors and Department Heads to share the Lab Safety Commitment to those responsible for laboratories. The Commitment was to be posted in labs by July 2017. Starting in October 2017, EHS performed lab walkthroughs checking for the posted commitment and the successful implementation of the five target areas of lab safety.

Timeline of events:

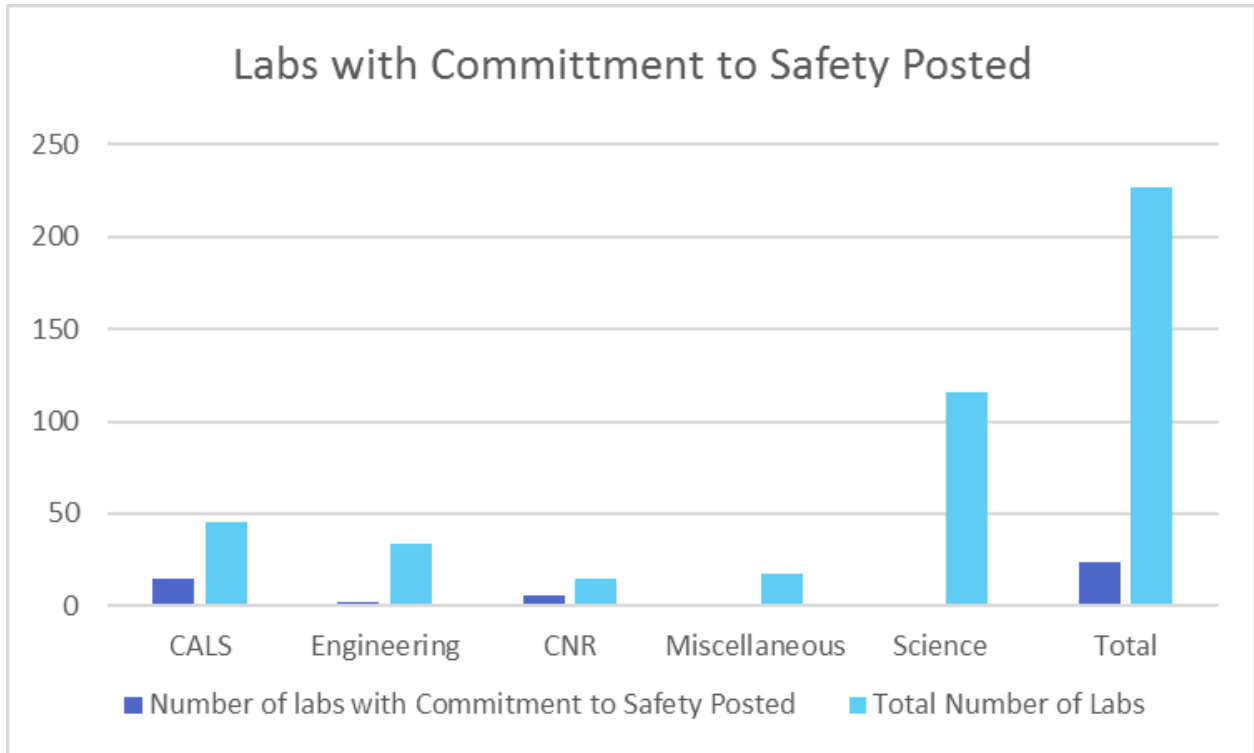
- January 17, 2017 – VPs of Infrastructure and Research distributed the 2017 Lab Safety Commitment and Target Areas for Teaching and Research Labs email to Deans, Directors and Department Heads
- July 2017 – Deadline for those responsible for laboratories to post the Lab Safety Commitment in a prominent area of their labs and implement the five target areas of lab safety.
- October 2017 – EHS began lab safety walkthroughs of labs throughout Moscow campus.

A checklist containing 25 questions was developed to assess lab compliance with the five target areas. The EHS lab walkthrough survey team included two individuals from the industrial hygiene team who are familiar with the labs on campus. The questions that were used are common for institutions performing laboratory safety audits and focused solely on the five target areas.

Lab walkthroughs typically took about 10 to 15 minutes to complete in each lab. The EHS survey team visually inspected each lab looking at compliance with the 5 target areas. The team looked for the presence of chemical waste, PPE, sharps disposal containers, emergency equipment and fume hood performance. If personnel were present, we would discuss the lab target areas and answer questions. It is important to note that some labs did not have hazardous waste, fume hoods, sharps waste, etc. In those cases, N/A was used to answer the survey.

The EHS survey team completed a total of 227 lab walkthroughs in a total of fifteen buildings on the Moscow campus. Results have been divided into colleges. The results are summarized in the following charts. The Miscellaneous category includes IRIC and general education labs within McClure Hall and Holm Research Center. EHS will collaborate with the Office of Research Assurances staff to improve lab safety throughout UI. This collaborative group will work with labs to correct discrepancies that were found on walkthroughs.

Commitment to Safety:



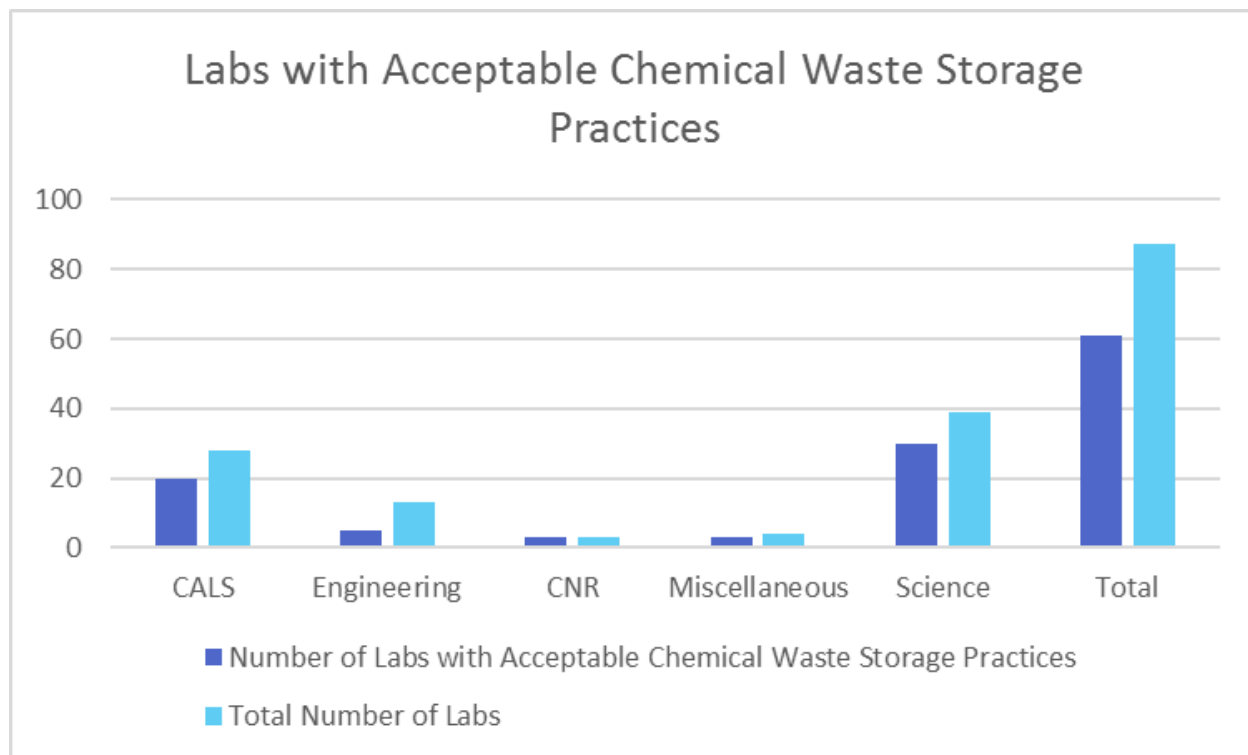
College	Number of labs with Commitment to Safety Posted	Total number of labs
CALS	15	45
Engineering	2	34
CNR	6	15
Miscellaneous	0	17
Science	1	116
Total	24	227

1. Chemical Waste Storage

Walkthrough Questions:

- Are chemical containers labeled with contents?
- Do containers have tight fitting caps?
- Are containers compatible with accumulated waste and in good condition?
- Do waste containers have compliant labels?
- Are containers labeled with works that identify contents as soon as any waste is added?
- Is secondary containment used to store liquid waste containers?

Number of labs with acceptable chemical waste storage practices: Note that many labs did not contain hazardous chemical waste and are not included. Labs with two or more “no” responses failed this section of the walkthrough.



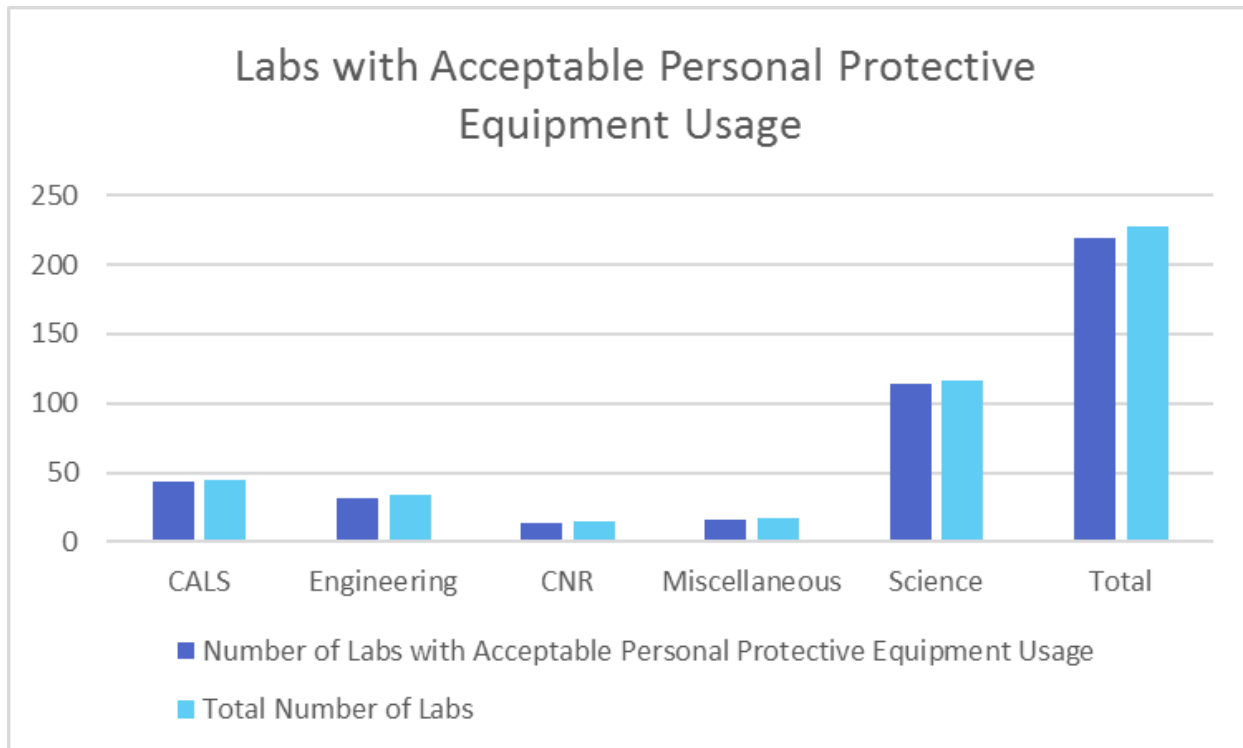
College	Number of labs with acceptable chemical waste storage practices	Total number of labs
CALS	20	28
Engineering	5	13
CNR	3	3
Miscellaneous	3	4
Science	30	39
Total	61	87

2. Proper Usage of Personal Protective Equipment

Walkthrough Questions:

- Types of PPE used in the lab
- Are the types of PPE used appropriate for the hazards in the lab?
- Do occupants wear closed toed shoes and long pants?

Number of labs with acceptable personal protective equipment usage: Based on visible PPE within the lab. Note that labs with one or more “no” responses failed this section of the walkthrough.



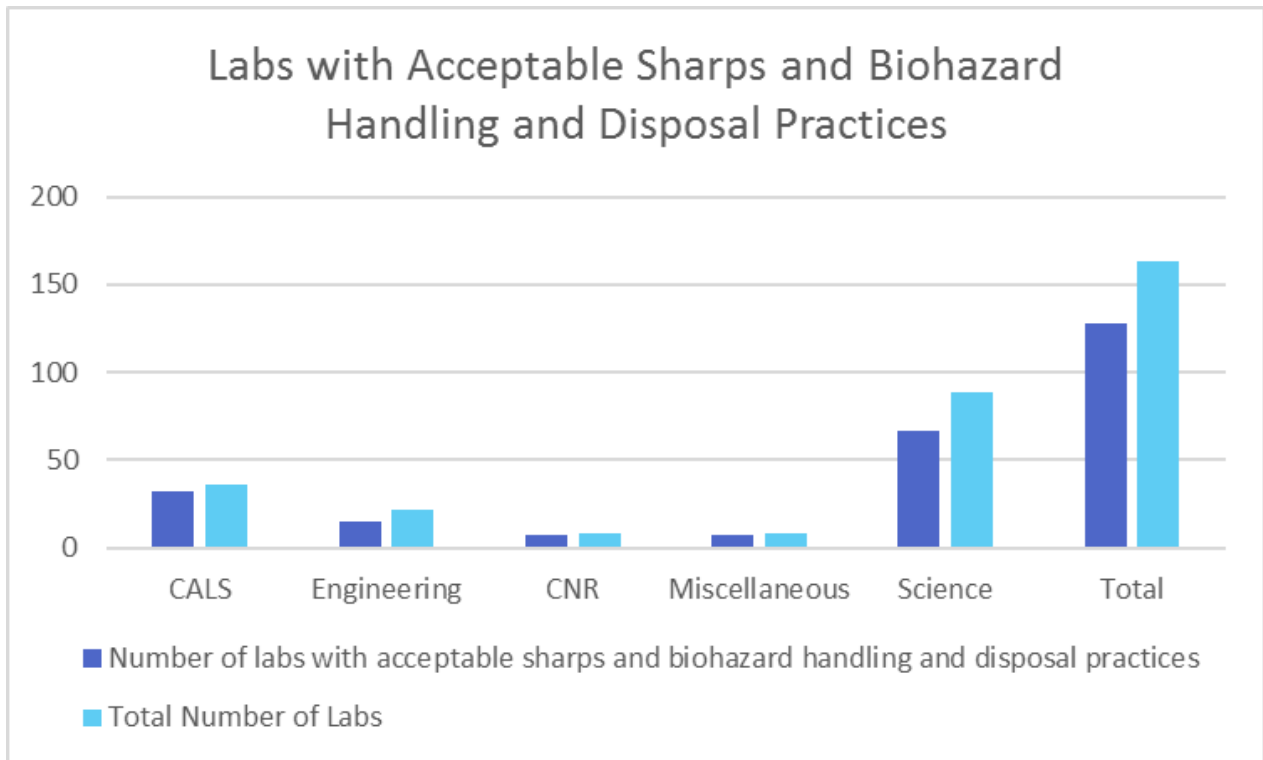
College	Number of Labs with Acceptable Personal Protective Equipment Usage	Total Number of Labs
CALS	44	45
Engineering	31	34
CNR	14	15
Miscellaneous	16	17
Science	114	116
Total	219	227

3. Sharps and Biohazard Handling and Disposal

Walkthrough Questions:

- Types of sharps used
- Is a copy of the sharps disposal flowchart present in the lab?
- Are contaminated sharps segregated for disposal?
- Are sharps containers filled to the appropriate level before disposal?

Number of labs with acceptable sharps and biohazard handling and disposal practices: Note that labs with two or more “no” responses failed this section of the walkthrough.



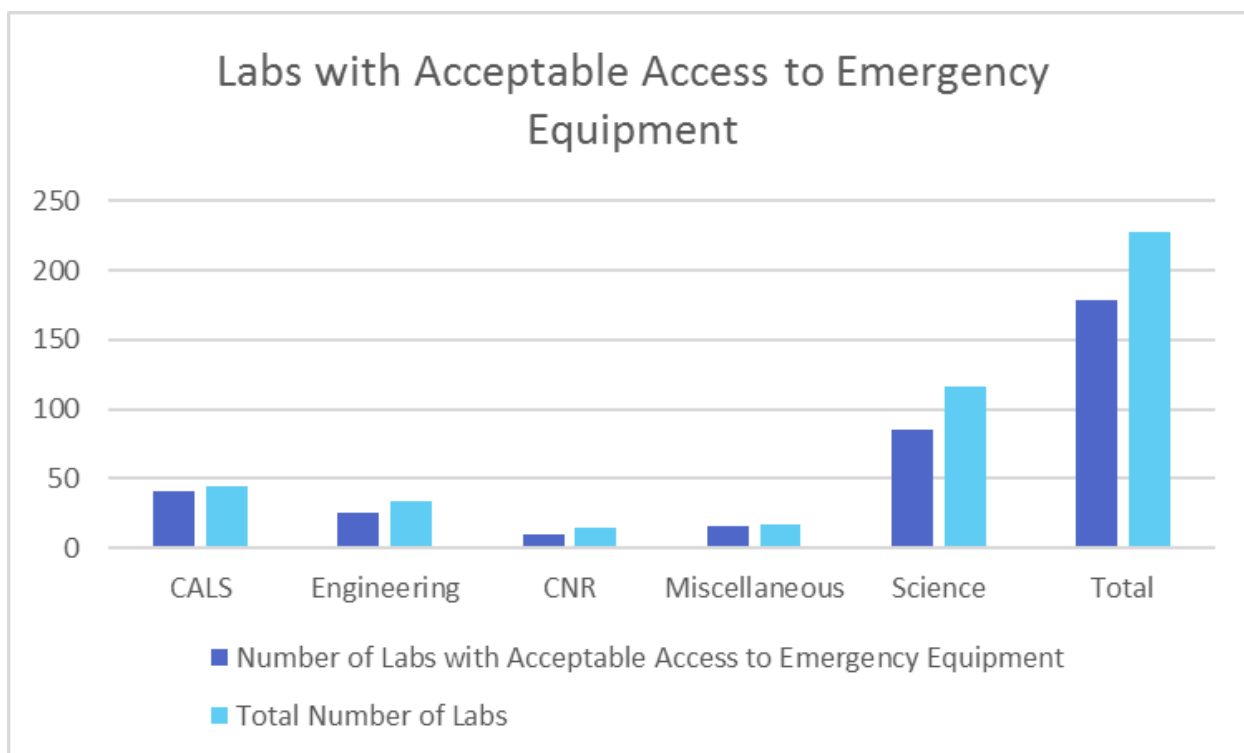
College	Number of labs with acceptable sharps and biohazard handling and disposal practices	Total Number of Labs
CALS	32	36
Engineering	15	22
CNR	7	8
Miscellaneous	7	8
Science	67	89
Total	128	163

4. Access to Emergency Equipment

Walkthrough Questions:

- Is area surrounding emergency shower clear and unobstructed?
- Is area surrounding eye wash/drench hose clear and unobstructed?
- Is area surrounding electrical panel clear and unobstructed?
- Is area surrounding fire extinguisher clear and unobstructed?
- Is there 18" clearance of combustible materials from ceiling in rooms with sprinklers (24" clearance in rooms without sprinklers)?

Number of labs with acceptable access to emergency equipment: Note that labs with one or more "no" responses failed this section of the walkthrough.



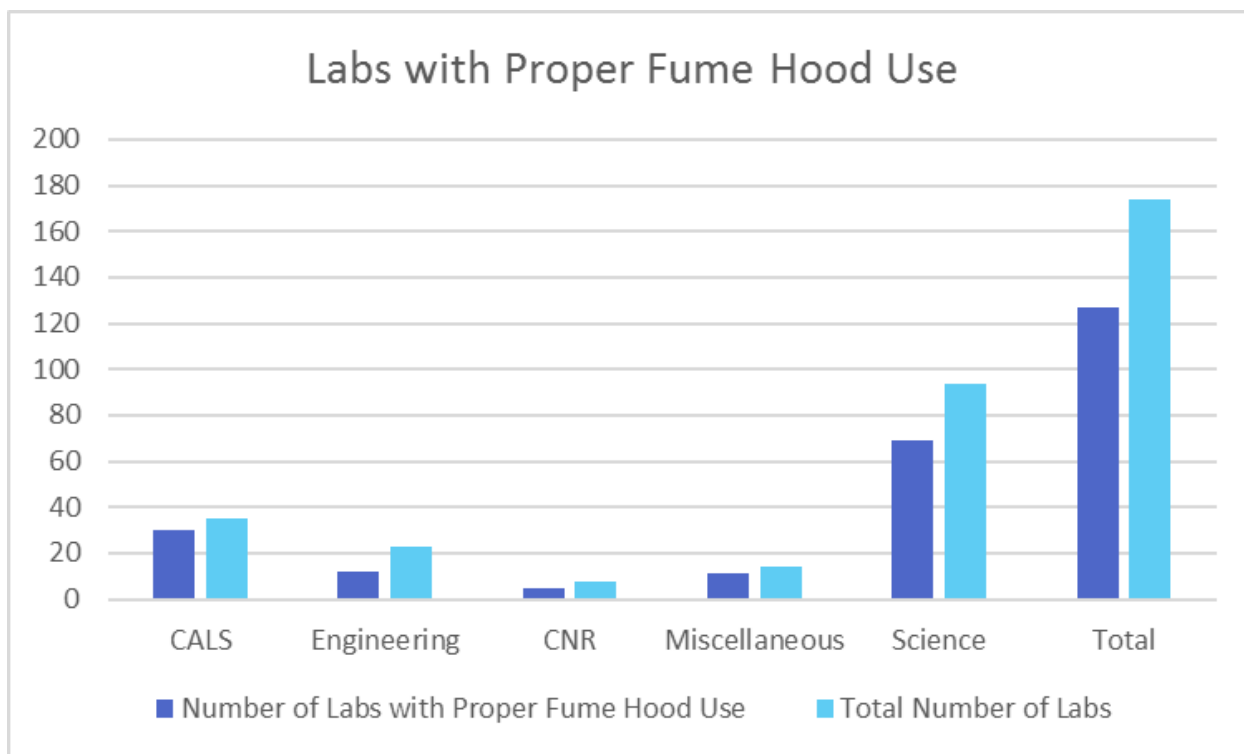
College	Number of Labs with Acceptable Access to Emergency Equipment	Total Number of Labs
CALS	41	45
Engineering	25	34
CNR	10	15
Miscellaneous	16	17
Science	85	116
Total	178	227

5. Proper Fume Hood Use

Walkthrough Questions:

- Is fume hood being used appropriately?
- Is work being performed 6” away from sash opening?
- Is equipment inside of fume hood elevated or positioned such that it is not blocking baffles or airflow?
- Is there adequate working space in front of the fume hood?
- Is sash lowered when fume hood is not in use?

Number of labs with proper fume hood use: Some labs do not contain fume hoods and are not included.



College	Number of Labs with Proper Fume Hood Use	Total Number of Labs
CALS	30	35
Engineering	12	23
CNR	5	8
Miscellaneous	11	14
Science	69	94
Total	127	174

The most frequently failed questions on the EHS walkthroughs were:

Failed Item	Number of Labs that Failed this Item
Is a copy of the Sharps Disposal Flowchart present?	119
Is secondary containment used to store liquid waste containers?	42
Are containers labeled with words that identify contents as soon as any waste is added?	37
Is there 18" clearance of combustible materials from ceiling in rooms with sprinklers (24" clearance in room without sprinklers)?	32
Are contaminated sharps segregated (chem, bio, rad) for disposal?	29
Is sash lowered when fume hood is not in use?	28
Is fume hood being used appropriately? (example: not used for chemical storage, no large equipment)	25
Do waste containers have compliant labels? (example: no conflicting labels, no "empty" label)?	21
Is equipment inside of fume hood elevated or positioned such that it is not blocking baffles or airflow?	21

APLU Recommendations (<http://www.aplu.org/projects-and-initiatives/research-science-and-technology/task-force-laboratory-safety/Recommendations.html>)