

Date: September 25, 2016

To: Christopher Lum
Aeronautics and Astronautics
Box 352250

From: John Kushleika
Environmental Health & Safety
Box 354400
em: kush@uw.edu, ph: (206) 543-2835

Subject: EH&S Laboratory Health & Safety Survey # 2834

On September 20, 2016, the EH&S Lab Survey Team conducted a survey of your research lab space located in AERO & ENG RESCH. Enclosed is a copy of the survey report which identifies deficiencies that were observed during the survey.

When deficiencies are identified in a survey report, EH&S requires a response from each PI within 30 calendar days indicating when the deficiencies were corrected. EH&S recognizes that some deficiencies may require longer than 30 days to correct. In these cases, a response indicating the plan for making the correction is requested. Your survey file will close after 30 days and no further entries will be recorded.

As a follow-up to this report you will need to:

1. **Correct any deficiencies identified in the report and notate the date the corrections were made.**
2. **Provide EH&S with correction dates, initials, and any comments via the online dashboard found at <https://depts.washington.edu/ehas/pubcookie/prod/labsurvey/index.php>.**

Alternatively, you may send a paper copy of the survey report to us. Please email a completed, signed PDF copy of the report that shows the dates the deficiencies were corrected, along with any relevant comments, to Tracy Harvey at tdy@uw.edu. Or, please mail a hard copy of the report to Tracy Harvey, Box 354400.

The primary focus of these surveys is to identify concerns that may present a health and safety risk to lab occupants, or potential regulatory or policy violations that may present a risk to the University. The survey is intended to identify observable health and safety deficiencies related to the International Fire Code, WA State Department of Labor & Industries (L&I), WA State Department of Ecology, NIH/CDC, WA State Department of Health Office of Radiation Protection, or relevant UW Administrative Policy Statements (APS). The survey will also assess some related administrative controls, such as training and personal protective equipment records.

Please contact me if you need help clarifying any of the safety deficiencies identified, or if you have any questions on how to return the corrections.

Lab Safety Survey Report

Survey# 2834 Survey Date: 9/20/2016 Surveyor: Kushleika Dr. kush@uw.edu (206) 543-2835
 Building: AERO & ENG RESCH Rooms Surveyed: 101

RP: Christopher Lum (206) 543-0539 352250 Dept: Aeronautics and Astronautics

Lab Contact:

#	Yes	No	N/A	Question	Comments	Date Corrected & Related
Administrative Plans/Materials						
1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Do the lab staff have access to the current version of the UW Lab Safety Manual?		
2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Do all lab personnel have access to written SOPs that document safety procedures?	SOPs should be present for any chemicals used (glues), as well as processes with potential hazards such as use of power tools and use of lithium-polymer batteries.	
3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Are lab accidents and near misses reported to the OARS system?		
Signage						
4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Are emergency contact numbers for lab staff, including after-hours emergency contact numbers, posted within the laboratory?		
5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is a lab hazard caution sign posted and current?		
6	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Is a biosafety door sign posted when agents are in use and removed when not in use?		
7	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Are additional hazard warning signs (laser, magnetic fields, high voltage, etc) posted in lab near the hazard?		
8	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is a laboratory floor plan as described in the lab safety manual posted?		
Hazard Communication						
9	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Has the lab's chemical inventory been reviewed and updated within the last year?		
10	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is the lab's contact information current in MYCHEM?		
11	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Can all lab staff readily access an MSDS/SDS via MYCHEM or hardcopy in the lab?		
12	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Are all containers clearly labeled with their contents and primary hazard(s)?		
Lab Training						
13	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Has a safety training assessment been completed for laboratory personnel?		
14	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Has EHS safety training been completed and documented for all lab staff?	The PI is required to attend the 'Lab Safety Standard Compliance' course given by EH&S. See the training assessment matrix at www.ehs.washington.edu/forms/pso/ehslabsafetytrainmatrix.pdf	
15	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Has lab specific training been completed and documented?	Please add training for safe power tool usage and lithium-polymer battery safety.	
Personal Protective Equipment						
16	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Has a PPE hazard assessment been completed for the lab?		
17	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Have all lab personnel completed PPE training?	Add training regarding power tool usage as appropriate for personnel.	
18	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	If cartridge respirators are being used, have personnel been fit tested?		
Emergency Kits						

#	Yes	No	N/A	Question	Comments	Date Corrected & Related Comments
19	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>Does the laboratory have access to a chemical/biological spill kits?</u>		
20	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Do lab staff have access to a fully stocked first-aid kit?</u>		
Food/Beverage						
21	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Is food and drink prohibited in laboratory areas?</u>		
Emergency Eyewash/Shower						
22	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Are eyewashes and showers accessible within 10 seconds travel (approx. 50 ft)?</u>		
23	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Are eyewashes and showers free of obstructions?</u>		
24	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Are eyewashes routinely flushed?</u>		
Ventilation						
25	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Are processes that emit vapors, gasses, or fumes adequately captured by local ventilation (hoods, snorkel)?</u>		
26	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>Are fume hoods kept uncluttered and are rear ventilation slots within the hood not blocked or covered?</u>		
Hazardous Waste and Disposal						
27	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>Are chemical waste containers in good condition and compatible with their contents?</u>		
28	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>Are chemical waste containers closed?</u>		
29	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>Are incompatible chemical wastes segregated by hazard class ?</u>		
30	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Are all chemical waste containers labeled with a completed UW hazardous waste label?</u>		
31	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>Are hazardous chemicals that are treated for disposal via sewer documented in a log?</u>		
32	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>Is lab glass placed in sturdy cardboard boxes that are labeled with the room number and Principal Investigator's name?</u>		
Chemical Storage/Process						
33	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Are flammable liquids stored outside of flammable liquid storage cabinets limited to 10 gallons in quantity, and are they stored in approved safety containers?</u>		
34	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Are hazardous material quantities within limits allowed by the Fire Code?</u>		
35	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>If flammable liquids are stored in a refrigerator, are they in a refrigerator approved for flammable (or explosive) liquids?</u>		
36	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Are all chemical containers in good condition (not corroded or leaking)?</u>		
37	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Are all chemical containers closed?</u>		
38	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Are incompatible chemicals segregated when they are being stored?</u>		
39	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Are hazardous materials storage cabinets properly labeled, and in good condition?</u>		
40	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Are chemicals stored on the floor in DOT approved carboys, metal containers or glass containers provided with secondary containment?</u>		
41	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Are chemical containers being stored away from sinks?</u>		
42	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Are corrosive chemicals stored below eye level?</u>		
43	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>Have unopened peroxide forming compounds not exceeded their manufacturer's expiration date?</u>		
44	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>Are opened peroxide forming compounds labeled with the date they were opened and an expiration date?</u>		
Compressed Gas Cylinders/Cryogen and LPG						
45	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>Are highly toxic gas cylinders stored in a gas cabinet, ventilated enclosure, or fume hood?</u>		

#	Yes	No	N/A	Question	Comments	Date Corrected & Related Comments
46	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>Are incompatible compressed gas cylinders segregated?</u>		
47	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>Are gas cylinder valve protection caps in place for gas cylinders not in active use?</u>		
48	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>Are compressed gas cylinders secured to prevent them from falling or tipping?</u>		
Biological Safety						
49	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>If the lab works with biohazards involving recombinant DNA, human or non-human primate material, or pathogenic agents, does it have a Biological Use Authorization?</u>		
50	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>If conducting BSL1/ABSL1 practices or higher, is a sink available for hand washing?</u>		
51	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>Are biohazardous blades, needles, and other sharps promptly disposed of in a sharps container?</u>		
52	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>Is biohazardous waste autoclaved in a timely manner?</u>		
Pressure Vessel						
53	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>If pressure vessels are in use, are they approved for their operating pressure or are they mitigated to prevent injury?</u>		
Housekeeping						
54	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Is the lab free of slip and trip hazards?</u>		
55	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Is the lab adequately organized, orderly and clean to provide for sufficient work space for operations without spills, accidents and other preventable incidents?</u>		
56	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Is there minimal glassware stored in the sink or on the bench top?</u>		
57	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Is the lab free of chemicals that are old and no longer needed?</u>		
58	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Was a safety self-audit performed within the last 12 Months?</u>		
59	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Are lab coats regularly laundered by Consolidated Laundry or similar Industrial laundry service?</u>		
Electrical Safety						
60	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>Are building electrical panels accessible?</u>	A clearance of 36 inches is required in front of all building electrical panels.	
61	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Are extension cords or power strips not daisy-chained to each other?</u>		
62	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>Exposed wiring or electrical cords in poor condition are not in use?</u>	Discontinue use of the hand drill whose cord is patched with duct tape by the handle.	
63	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>Are ground fault circuit interrupters (GFCIs--either fixed GFCI receptacles/breakers or using adaptors) employed in wet locations?</u>		
64	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Are extension cords used only as temporary wiring and not running under carpets, doors or through walls and ceilings?</u>		
65	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Is equipment with motors, heaters, and other high amperage needs plugged directly into a wall receptacle?</u>		
Radiation Safety						
66	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>Are radioactive stock solutions secured in a locked cabinet when not in use?</u>		
67	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>Are all Class 3B and-or Class 4 lasers inventoried with EHS Radiation Safety?</u>		
68	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>If the answer to 67 is Yes, are laser warning signs posted (Notice, Danger)?</u>		
Fire Safety/Prevention						
69	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Are there 18 inches of clearance between stored items and fire sprinklers?</u>		
70	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Do suspended ceilings have all of their ceiling tiles in place?</u>		
71	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Are laboratory doors kept closed when unoccupied?</u>		
72	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Are fire extinguishers available, easily accessible, and free of obstructions?</u>		

#	Yes	No	N/A	Question	Comments	Date Corrected & Related Comments
Exit Access/Corridors						
73	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Are aisles and exits within the laboratory space free of clutter and obstructions?		
74	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Are corridors and exits free of obstruction and hazardous materials/processed in accordance with UW Corridor Policy?		
Seismic Safety						
75	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Are all tall bookcases, refrigerators, freezers, and tall cabinets next to the exit doorway secured?		
76	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Are chemical containers stored safely on shelves with lips or in a closed cabinet to prevent them from falling in an earthquake?		
Machinery						
77	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Are all hazardous pieces of machinery mounted or secured to prevent movement or tipping?		
78	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Are all points of operation, rotating components, and other moving parts of machinery properly guarded to prevent injury?		
RP's Comments:						

Survey Report Instructions & Signature

Survey# 2834 Building: AERO & ENG RESCH

Please initial and date all items marked “No” in the report (under ‘Date Corrected’) indicating that you have made the necessary corrections. Sign this form and return it to EH&S by the deadline.

Name: _____

Title: _____

Signature: _____

Date: _____

All items marked ‘No’ must be corrected within 30 calendar days of the survey mailed date below. Unresolved issues or lack of response may be escalated to your department chair.

If circumstance prevents you from correcting the items noted above by the deadline please explain below and indicate what plan you can take to address these issues. If you feel the report is inaccurate or the issue not applicable, please let us know. Comments/Explanation for unresolved issues:

Return this report using one of the following methods: email attachment to **Tracy Harvey** at tdy@uw.edu, or send via campus mail to her attention, Box 354400.

Survey Mailed: Sunday, September 25, 2016