

SUBJECT: RESEARCH LABORATORY SAFETY INSPECTIONS SOP

1. **PURPOSE:** To confirm compliance with safe laboratory practices in accordance with local and federal guidelines.

2. **DEFINITIONS:**
 - PI Principal Investigator
 - RSC Research Safety Coordinator
 - SRS Subcommittee on Research Safety

3. **ACTION:**
 - a) Each laboratory (PI laboratory and Common Service laboratory area) will be audited annually by a member of the Subcommittee on Research Safety (SRS) for safe use of chemicals, equipment, and facilities as detailed in the 'MVAHCS Lab Safety Audit Checklist' and the Safety Training Checklist materials ([R:\All_Staff\Training\Training_Material\Checklist and Materials](R:\All_Staff\Training\Training_Material\Checklist_and_Materials)).
 - b) **Audit:**
 1. Any deficiencies or findings found during the audit of a PI laboratory will be detailed on the MVAHCS Lab Safety Audit Checklist (see attachment A) under the "No" column.
 2. Copies of the checklist with a coversheet will be given to the principal investigator (PI) and laboratory personnel.
 3. Some deficiencies or findings can be corrected during the audit. Some require correction by the laboratory staff, some require designating an action plan and timing to correct and some deficiencies are corrected by SRS staff. Where SRS staff correct the deficiency, this is indicated on the checklist.
 - c) **Lab Responsibilities:**
 1. The deficiencies needing correction by lab staff must be corrected within **10 working days of receipt of the checklist**, or timeframe agreed upon by the lab, the lab auditor, and the RSC. If a deficiency cannot be corrected within this time frame, an action plan to correct the deficiency must be designed and noted on the checklist, in the 'Action Plan' column.
 2. Once findings are reviewed by the lab, the checklist copy with Action Plan notations and the memo must be signed by the PI, confirming they've reviewed findings, and then sent to the Research Safety Coordinator (RSC) for evaluation.
 - d) **RSC:**
 1. The laboratory will be re-audited by the RSC for correction of the noted deficiencies and review of any action plan(s).
 - e) **SRS:**
 1. The SRS is appraised of the results of each completed lab audit in summary form when performing annual protocol review of the PI's that use the lab space.
 2. Any significant items are discussed, as are any significantly outstanding corrections.
 3. This updated file is always available to the SRS Members with the monthly Agenda material.
 - f) If the checklist and coversheet have not been returned to the RSC within 10 working days, or if deficiencies have not been corrected, new safety protocols or continuing reviews of existing

protocols may not be approved by the SRS. The latter would be based on the complexity of the correction and whether the deficiency could impact current research activities.

- g) Common Service Laboratory areas will also be audited by a member of the SRS each year for safe use of chemicals, equipment, and facilities.
- h) Any deficiencies or findings found during the common service area audit will be detailed on the COMMON SERVICE AREAS – MVAHCS Lab Safety Audit Checklist (see attachment B). The Laboratory Coordinator and/or their designee will address the deficiencies found in the Common Service areas.
- i) The Lab Safety Audit Checklist records and PI acknowledgment memos will be retained for 3 years as Committee Records.

4. REFERENCES:

- 1) 29 CFR Section 1910.1450. <https://www.osha.gov/laws-regs/regulations/standardnumber/1910>.
- 2) VHA Directive 1200.08: Safety of Personnel and Security of Laboratories Involved in VA Research.
https://www.va.gov/vhapublications/publications.cfm?pub=1&order=asc&orderby=pub_Number

5. SRS APPROVED: August 29, 2023

6. RESCISSION: SRS-016 Research Laboratory Safety Inspections Standard Operating Procedures (SOP), March 29, 2022

7. EXPIRATION DATE: N/A

8. FOLLOW-UP RESPONSIBILITY: Subcommittee on Research Safety (SRS)

9. ATTACHMENTS:

Attachment A - MVAHCS Lab Safety Audit Checklist

Attachment B - COMMON SERVICE AREAS – MVAHCS Lab Safety Audit Checklist

Attachment A: MVAHCS Lab Safety Audit Checklist

A. General Lab Safety	Yes	No	N/A	Comments	Action Plan
1. Laboratory doors are kept closed and locked if unattended. Current emergency contact numbers are posted. (Orange phone sheet)					
2. <u>Good housekeeping (no clutter, clean floors, available work surfaces, etc.) is observed.</u>					
3. The sink is uncluttered and accessible.					
4. The eyewash is tested weekly, and testing is documented on the eyewash tag.					
5. Emergency shower location is mapped.					
6. There is no evidence of eating, drinking, vaping, or smoking in the lab.					
7. The "20 Tips" sheet is posted.					
8. No glass containers are stored on the floor.					
9. No trip hazards are evident.					
10. Lab furniture is impervious to spills.					
11. All employees know the location of the Research Safety Manual (or posted note).					
12. Freezers are defrosted.					
13. Lab specific SOPs are included in the current "Safety Training Checklist Notebook"					
B. Biological	Yes	No	N/A	Comments	Action Plan
1. The Biological Safety Cabinet is certified annually and functioning properly.					
2. Appropriate disinfectant is available.					
3. Laboratory entrance signage is correct (annually dated BSL level and precautions).					
4. Sharps/biological containers are closed when not in use and replaced when $\frac{3}{4}$ full.					
5. Biological waste containers are closed when not in use and are labeled "Biohazard Waste"					
6. In use vacuum lines are protected with overflow traps (req.) and HEPA filters (opt.).					
7. Areas used for storage of biological materials are labeled with a Biohazard symbol and "Not for Food or Drink" labels.					

C. Chemical	Yes	No	N/A	Comments	Action Plan
1. Chemicals are stored properly (i.e., segregated according to compatibility and in secondary containment as required). Liquid hazardous chemicals are stored on shelves below eye-level.					
2. Label all containers with complete contents and hazard type if there is a hazard. <u>NOTE</u> : If contents are non-hazardous, acronyms are accepted if they are found in the SDS inventory system or if “non-hazardous” is on the label.					
3. Proper waste management procedures are utilized (appropriately labeled satellite collections, secondary containment, using sewer log evaluations, etc).					
4. Chemical Fume Hoods are certified and functioning as evidenced by flutter strip.					
5. Peroxide formers are dated for receipt, opening and expiration.					
6. Spill control materials are easily accessible and in good condition.					
7. Non-mercury thermometers are used.					
8. Nitric acid is stored separately from other chemicals in 4P-103.					
9. Personnel indicate understanding of HEFP Chemical Inventory Service					
10. Chloroform is <1 year old if un-stabilized and not open for >1 year if stabilized. (Dated for both receipt and opening)					
11. SDS/Chemical Inventory is up to date. Spot check of 5 chemicals listed below:					
NOTES:					
D. Physical	Yes	No	N/A	Comments	Action Plan
1. All gas cylinders are properly secured					
2. Microwaves are clearly labeled “No food or drink”.					
3. Any room UV lights are on interlock switch.					
4. Pallets are used for floor storage.					
5. Floor tiles are not chipped or loose, exhaust fan covers are clean, and drawers /cupboards are not rusty or in need of paint.					

6. Absorbent materials; e.g. towels, paper or cardboard are not stored under sink(s) - (to prevent mold growth).					
7. Refrigerators have a yellow “Not safe for Flammables” sticker.					
8. Freezers/refrigerators and contents have appropriate contact information posted.					
9. PPE is available for all liquid nitrogen tanks and Dewars – a note near the tank is posted with the PPE location if they’re not nearby.					
NOTES:					
<u>E. Work Practice Controls</u>	<u>Yes</u>	<u>No</u>	<u>N/A</u>	<u>Comments</u>	<u>Action Plan</u>
1. Proper use of personal protective equipment (PPE) (gloves, lab coat, etc.) is employed.					
2. Personnel know basic contents of updated Hazard Assessment and where to find it.					
3. Proper attire is worn.					
4. Hands are washed after removing gloves, gloves are not worn outside the lab, and lab coats are worn only in or between lab areas.					
5. Unattended computers are secured.					
6. Lock box for Controlled Substances has a “Check expired substances” note.					
NOTES: The notation “N/O” above, indicates “Not Observed”					
<u>F. Electrical Safety</u>	<u>Yes</u>	<u>No</u>	<u>N/A</u>	<u>Comments</u>	<u>Action Plan</u>
1. There are no extension cords or daisy chains (2+ power strips connected) in use.					
2. Power strips are not used for anything other than computers and are surge protected.					
3. Electrical cords do not present a hazard (frayed, draped across or under equipment).					
4. Electrical equipment has an EE# sticker or a UMN sticker or a Biomed inspection sticker.					
5. Computers are off the floor (on pallets is ok)					

NOTES:					
G. Fire Safety	Yes	No	N/A	Comments	Action Plan
1. The locations of fire extinguishers, red pull stations and exit signs/routes are known and staff knows how to report a fire.					
2. Sprinklers are clear of stored items (clear space of 24 inches from ceiling).					
3. Egress is unobstructed.					
4. Water baths are equipped with low water level and overheat shutoff.					
NOTES:					
Additional Summary Notes:					

Attachment B: MVAHCS Common Service Area Safety Audit Checklist

A. General Lab Safety	Yes	No	N/A	Comments	Action Plan
1. Laboratory doors are kept closed and locked if unattended. Current emergency contact numbers are posted. (Orange phone sheet)					
2. <u>Good housekeeping (no clutter, clean floors, and work surfaces, etc.) is observed.</u>					
3. The sink is uncluttered and accessible.					
4. The eyewash is tested weekly, and testing is documented on the eyewash tag.					
5. There is no evidence of eating, drinking, vaping, or smoking in the lab.					
6. No glass containers are stored on the floor.					
7. No trip hazards are evident.					
8. Lab furniture is impervious to spills.					
9. Research Safety Manual/SDS site is posted.					
10. Emergency shower location is mapped.					
11. Freezers are defrosted.					
NOTES:					
<u>B. Biological</u>	Yes	No	N/A	Comments	Action Plan
1. The Biological Safety Cabinet is certified annually and functioning properly.					
2. Laboratory entrance signage is correct (annually dated BSL level/precautions).					
3. Sharps/biological containers are closed when not in use and replaced when $\frac{3}{4}$ full.					
4. Biological waste containers are closed when not in use and labeled "Biohazard Waste".					
5. In use vacuum lines are protected with overflow traps (req) and HEPA filters (opt).					
6. Areas used for storage of biological material are labeled with a Biohazard symbol and "Not for Food or Drink" storage labels.					

NOTES:					
<u>C. Chemical</u>	<u>Yes</u>	<u>No</u>	<u>N/A</u>	<u>Comments</u>	<u>Action Plan</u>
1. Chemicals are stored properly (i.e. segregated according to compatibility and in secondary containment as required). Liquid hazardous chemicals are stored on shelves below eye-level. (No Chloroform kept in area.)					
2. Label all containers with complete contents and hazard type if there is a hazard. NOTE: If contents are non-hazardous, acronyms are accepted if they are found in the SDS inventory system or if “non-hazardous” is on the label.					
3. Proper waste management procedures are utilized (appropriately labeled satellite collections, secondary containment, using sewer log evaluations, etc).					
4. Chemical Fume Hoods are certified and functioning as evidenced by flutter strip.					
5. Spill control materials are easily accessible and in good condition.					
6. Non-mercury thermometers are used.					
NOTES:					
<u>D. Physical</u>	<u>Yes</u>	<u>No</u>	<u>N/A</u>	<u>Comments</u>	<u>Action Plan</u>
1. All gas cylinders are properly secured.					
2. Excess/empty cylinders are not kept in area.					
3. Microwaves are labeled “No food or drink”.					
4. Pallets are used for floor storage.					

5. Floor tiles are not chipped or loose, exhaust fan covers are clean, and drawers/ cupboards are not rusty or in need of paint.					
6. Absorbent materials: e.g., towels, paper, or cardboard are not stored under sink(s) - (to prevent mold growth).					
7. Refrigerators have yellow "Not safe for Flammables" sticker.					
8. Freezers/refrigerators and contents have appropriate contact information posted.					
9. Unused equipment or computers are not stored in the area.					
10. PPE is clearly available for all liquid nitrogen tanks and Dewars.					
NOTES:					
<u>E. Work Practice Controls</u>	<u>Yes</u>	<u>No</u>	<u>N/A</u>	<u>Comments</u>	<u>Action Plan</u>
1. Unattended computers are secured.					
NOTES:					
<u>F. Electrical Safety</u>	<u>Yes</u>	<u>No</u>	<u>N/A</u>	<u>Comments</u>	<u>Action Plan</u>
1. There are no extension cords or daisy chains (2+ power strips connected) in use.					
2. Power strips are not used for anything other than computers and are surge protected.					
3. Electrical cords do not present a hazard (frayed, draped across or under equipment).					
4. Electrical equipment has an EE# sticker or a UMN sticker or a Biomed inspection sticker.					
5. Computers are off the floor (pallets ok)					
NOTES:					

G. Fire Safety	<u>Yes</u>	<u>No</u>	<u>N/A</u>	<u>Comments</u>	<u>Action Plan</u>
1. The locations of fire extinguishers, red pull stations and exit signs/routes are posted.					
2. Sprinklers are clear of stored items (24 inches from ceiling).					
3. Egress is unobstructed.					
4. Water baths are equipped with low water level and overheat shutoff.					
NOTES:					
Additional Notes:					