Laboratory Closeout

Procedure Revision 3rd

November 10, 2016

Overview
All laboratory rooms, chemical storage areas, or areas where hazardous equipment or materials are used or stored must be cleared by EHS before assigned to new occupants or scheduled for renovation activities. The Principal Investigator and Department are responsible for ensuring that the transfer and/or disposal of chemical, biological, radioactive materials are properly completed prior to vacating the space. In addition, the decontamination of equipment, hoods, storage cabinets, and counters must be done and arrangements made for the removal of unwanted lab equipment, supplies, electronics, and furniture.

Applicability
The procedures described here must be followed when laboratories, chemical storage areas, or areas where hazardous equipment or materials at Northeastern University are to be vacated whether due to a Principle Investigator leaving the institution, research activities in a laboratory are being relocated or terminated, or a renovation project is scheduled. The Office of Environmental Health and Safety (EHS) should be notified at least 30 days prior to the anticipated departure. Once notified, EHS can provide additional guidance or assist with a pre-close out inspection to outline the safety issues that need to be addressed.

Responsibilities
- Laboratory Safety Committee will provide proper guidance for the close-out requirements for vacating laboratories
  - Environmental Health and Safety will guide Principal Investigators and Departments through the process of cleaning up a laboratory for clearance purposes. EHS will issue a laboratory clearance form for those vacated laboratories found to be compliant with these guidelines.
  - Departments are responsible for ensuring that all Principal Investigators follow these guidelines to ensure laboratory clearance by EHS. Departments are ultimately responsible for the clearance of laboratory space and equipment of Principal Investigators that have left NU.
  - Principal Investigator(s) are responsible for following these guidelines to ensure that laboratories are left in a suitable condition for EHS to issue a laboratory clearance form.
  - Facilities Services personnel and Outside Contractors must not work in laboratories that have not been cleared. Cleared laboratory equipment will have a signed (by EHS) Clearance Form posted (see page 6 of this document).
Procedure
Laboratory space cannot be re-occupied nor renovation work started until the space has been inspected and cleared by Environmental Health and Safety. The vacating Principal Investigator and Department must complete the following procedures before the laboratory space will be cleared by Environmental Health and Safety. Please consult the applicable documents on EHS website [http://www.northeastern.edu/ehs/] for additional information or guidance on proper disposal.

1. **Radioactive Materials (RAM)**
   - If the laboratory has been authorized for use of radioisotopes or radiation-producing devices, you must call EHS at (617) 373-2769, for assistance with clearance. All radioactive waste, lead pigs, lead bricks, sheeting, and radioactive sources from equipment must be properly transferred or disposed. A final contamination survey must be performed by the authorized user and EHS.
     - Perform a thorough radiation contamination survey of the laboratory, including equipment, to determine if allowable contamination levels are achieved. Those areas found to exceed background readings must be decontaminated and resurveyed.
     - Remove all “Radioactive” or “Caution – Radioactive Materials” labeling and signs from equipment once it is decontaminated.
     - If the radioactive material is to be transferred to an authorized user at Northeastern, contact EHS for approval. If the radioactive material is to be transferred to another licensee or returned to the manufacturer, make arrangements for EHS to pick up the material for shipment. Radioactive waste must not be transferred to another authorized user or laboratory; arrange with EHS for disposal.
     - Equipment that cannot be decontaminated must be disposed of as radioactive waste or arrangements made to have it specially transported.

2. **Biological Waste Materials**
   - Place all sharps (syringes, Pasteur pipettes, serological pipettes, razor blades, etc.) in a sharps container and follow the set disposal procedures, see the following factsheet: [http://www.neu.edu/ehs/ehs-programs/biosafety/].
   - Dispose of all solid media and supplies in the laboratory as red bag waste for autoclaving or make arrangements with EHS for other disposal.
   - Dispose of all other potentially biohazardous waste from the laboratory either through autoclaving or arrangements with EHS.
   - Decontaminate all liquid media by autoclaving or by treating for 30 minutes with bleach solution (or other appropriate disinfecting solution) before drain disposal.
   - Decontaminate all work surfaces using freshly prepared 10% mercury free bleach solution or 70% alcohol.
   - Remove fixed tissue from preservative before disposal.
   - Dispose of chemical preservatives as hazardous chemical waste.
   - Dispose all human pathological waste through procedures established by the department responsible for managing the remains.
   - Animal tissue and remains should be placed in a sealed double plastic bag and disposal coordinated through the Laboratory Animal Medicine Department.

3. **Biological Safety Cabinets (BSC)**
   - Remove all of the contents.
   - Disconnect tissue culture media vacuum flask.
   - Decontaminate all accessible surfaces with an appropriate disinfectant.
o Decontaminate the BSC by a certified contractor, if a BSC is being relocated to a location outside of the building.

o Re-certify the BSC using a certified contractor when a BSC is relocated.

o If the BSC is not being moved and repair work will not open the contaminated inner space, a surface decontamination with an appropriate disinfectant is sufficient.

4. **Controlled Substances**
   o The US Drug Enforcement Agency (DEA) issues controlled substance permits to individual personnel or departments.
   o Abandonment of a controlled substance is a violation of the DEA permit under which it was held.
   o Permission to dispose or transfer ownership of a controlled substance to another department or individual must be received from DEA.
   o Licensed departments may dispose of controlled substances through EHS. Call (617) 373-2769 for information.
   o If controlled substances are found and the licensee is unknown, contact EHS.

5. **Internal Relocation of Chemicals**
   Qualified lab personnel are allowed to transport limited quantities and types of chemicals from their current laboratory to the new laboratory, if it is within the main Boston Campus and using an appropriate cart (no use of personal vehicles). Lab personnel must contact EHS to discuss transportation procedures including cart usage, secondary containment, and proper incompatible chemical segregation. Upon relocation, the chemical inventory for the laboratory must be updated. If the lab does not wish to move the chemicals themselves, the lab can utilize the procedure for “External Relocation of Chemicals”.

6. **External Relocation of Chemicals**
   Chemical moves to laboratories in external locations (off the main Boston Campus) must be transported by a U.S. Department of Transportation approved hazardous material hauler. EHS has agreements with vendors to provide this service. The vendor will prepare all paperwork necessary for the chemical move. In order to utilize these services, lab personnel are required to:
   o Segregate all chemicals from shelves, cabinets, etc., which require moving and place them in a designated location within the laboratory. Label the area “Chemicals to be moved”.
   o Upon relocation, the chemical inventory for the laboratory must be updated.
   o Relocated chemicals will be unpacked by the vendor and placed in an area where lab personnel can place them into appropriate storage.
   o Hazardous waste will not be transported to a new laboratory and must be properly labeled and left behind for later disposal.

7. **Hazardous Chemical Waste Disposal**
   All hazardous chemical waste must be managed in accordance with the NU Hazardous Waste Disposal Procedures. See the following EHS program site for additional information:
   http://www.northeastern.edu/ehs/ehs-programs/hazardous-waste-management/
   At a minimum the following procedures must be used:
   o EH&S has developed a Chemical Recycling Program for unused chemicals. Chemicals collected through the program or donated by laboratories that are unused are made available to all Northeastern researchers and faculty free of charge.
Keep an appropriate hazardous waste label on all waste containers. Hazardous waste labels are available free-of-charge by contacting EHS or by downloading them from our website.

- Keep all hazardous chemical waste in an appropriate container (screw type lid) and closed at all times.
- Keep an area of the laboratory or other points of waste generation designated for hazardous waste only and label utilizing Hazardous Waste Satellite Accumulation Area poster available by contacting EHS.
- All waste must be clearly labeled and sealed. Label unmarked or unclearly labeled containers as soon as they are located. Abbreviations or chemical symbols are not acceptable labeling. Identification and disposal of unknown substances is one of the most costly closeout activities, with average disposal fees of approximately $100 per container. If an item is truly unknown, please segregate it for identification during waste collection.

8. **Disposal of Compressed Gas Cylinders**
   Remove regulators and replace the valve stem cap. Return gas cylinders to the supplying vendor. Contact EHS for non-returnable cylinders.

9. **Relocating Compressed Gas Cylinders (including Liquid Nitrogen Cylinders)**
   When laboratory relocations require crossing a public road compressed gas cylinders (including Liquid Nitrogen Cylinders) **must** be transferred by the supplying vendor. Please call the appropriate vendor prior to relocating to arrange the move.

10. **Liquid Nitrogen-lined Freezers**
    The vendors supplying liquid nitrogen recommend that liquid nitrogen-lined freezers be drained to a minimum level (to sustain freezing of cells) prior to relocating. Liquid nitrogen freezers are moved by the moving company and should be scheduled for refill as soon as possible at the new location by the vendor.

11. **Laboratory Equipment Relocation or Disposal**
    The following procedures must be completed before laboratory equipment will be cleared:
    - Remove all contents from laboratory equipment, e.g. chemicals, media, and glassware.
    - Remove all bench coat and disposable liners/covers from equipment and dispose of properly.
    - Decontaminate all surfaces of contamination prone equipment, e.g., refrigerators, freezers, incubators, water baths, biological safety cabinets and centrifuges, with an appropriate disinfectant. Contact EHS for assistance.
    - Most freezers which have been used for the storage of biological materials must be unplugged and defrosted. Minus 140 degree freezers can be left intact and do not need to be defrosted.
    - Incubators and water baths must be drained of all standing water, including water inside the jacket.
    - If laboratory equipment is to be discarded, be aware that capacitors, circuit boards, transformers, mercury switches, mercury thermometers, radioactive sources and chemicals must be removed before disposal. Contact EHS for assistance.

12. **Electronics Recycling**
    All electronics (central processing units, monitors, keyboards, printers, televisions, and scanners) must be separated from general trash and placed into a designated
area for collection by Facility Services (617-373-2754). Follow published asset disposition procedures located at: [http://www.northeastern.edu/facilities/policies-forms/](http://www.northeastern.edu/facilities/policies-forms/). For computers to be re-allocated within the University, all data must first be "wiped" from the disk drive(s), prior to reallocation. Conventional formatting or "FDISK" is not sufficient to assure data destruction. Disk "wiping" service is currently offered FREE OF CHARGE by the Information Security department. For service, contact help@Northeastern.edu. Computers awaiting pickup for reallocation or recycling must be stored inside an office or other non-public physical space, and must remain there until picked up. Storage in publicly-accessible areas such as hallways or loading docks is not permitted.

13. **General Laboratory Cleanup**

All laboratory areas must be thoroughly cleaned to assure removal of all hazardous residues. All surfaces where hazardous chemicals have been used or stored must be washed with detergent and water. This includes bench tops, cabinets, drawers, floors, and etc. For furniture and other items that are to be removed from the laboratory, thoroughly decontaminate accessible surfaces to prevent harm to movers.

- Remove all bench coat and disposable liners/covers from work surfaces and dispose of appropriately.
- Empty and properly dispose of material from all drawers, cabinets, and fume hoods.
- Properly clean laboratory bench tops, cabinets, drawers, floors and fume hood surfaces (preferably with soap and water)

**Close Out Inspection**

Once you have completed all the applicable laboratory close out procedures, contact EHS to arrange for an inspection. Once clearance is completed, the Laboratory Clearance Form (see page 6 below) will be posted conspicuously in the laboratory or area that has been cleared.

Any regulatory action or fines resulting from improper management or disposal of hazardous materials will accrue to the responsible department.

Questions regarding these procedures should be directed to the Office of Environmental Health and Safety at x2769 or [www.Northeastern.edu/ehs](http://www.Northeastern.edu/ehs).
# Laboratory Closeout Procedure Clearance Form

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<tr>
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<th>Yes</th>
<th>NO</th>
<th>N/A</th>
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<tbody>
<tr>
<td>1. <strong>Radioactive Materials</strong> have been properly transferred/disposed and a final contamination survey has been completed.</td>
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<tr>
<td>2. <strong>Biological Materials</strong> have been properly transferred/disposed and appropriate decontamination has been completed.</td>
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<td>3. <strong>Biological Safety Cabinets</strong> has been properly emptied and decommissioned.</td>
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<td>4. <strong>Controlled Substances</strong> have been properly transferred and disposed</td>
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<td>5. <strong>Internal Relocation of Chemicals</strong> has been properly transferred and the chemical inventory has been updated.</td>
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<tr>
<td>6. <strong>External Relocation of Chemicals</strong> has been properly transferred and completed.</td>
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<td>7. <strong>Hazardous Chemical Waste Disposal / Recycling</strong> has been completed and no chemicals remain in the lab.</td>
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<td>8. <strong>Compressed Gas Cylinders</strong> have been returned to vendors or EHS contacted for non-returnables</td>
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<td>9. <strong>Relocating Compressed Gas Cylinders</strong> (including Liquid Nitrogen Cylinders) has been properly transferred and completed.</td>
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<td>10. <strong>Liquid Nitrogen-lined Freezers</strong> have been properly drained in preparation for moving.</td>
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<td>11. <strong>Laboratory Equipment Relocation or Disposal</strong> has been properly arranged.</td>
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<td>12. <strong>Electronics Recycling</strong> has been arranged according to University procedures.</td>
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<tr>
<td>13. <strong>General Laboratory Cleanup</strong> has been completed including cleaning of all surfaces, emptying of all drawers and removal of all rubbish.</td>
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<td>14. <strong>Closeout Inspection</strong> has been arranged with Environmental Health and Safety.</td>
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</table>

Questions regarding these procedures should be directed to the Office of Environmental Health and Safety at x2769 or ehs@neu.edu.

Laboratory Location ________________________ Department ________________________

Principal Investigator Signoff ________________________ Date __________________

EHS Sign-off ________________________ Date __________________