

# Guidelines for Laboratory Closure

These guidelines are to facilitate the process of laboratory closure when an investigator is vacating, relocating, or renovating a lab space. These guidelines only cover the removal of regulated materials. It is the investigator's Department's responsibility to coordinate removal of all non-regulated materials (books, furniture, etc.). Both the investigator and the department/division business manager are responsible for ensuring that all necessary signatures are obtained on the Laboratory Safety Status form before renovations begin or a new investigator enters the lab.

<b>Roles:</b>	<b>Responsibilities:</b>
<b>Department Head</b>	Ensures that PIs using biological, chemical, or radioactive material are aware of the requirements for close-out prior to vacating or renovation.
<b>Responsible Party/Principle Investigator (PI)</b>	The PI is responsible for executing the required tasks as outlined in the EH&S policies & guidelines, as well as contacting EH&S for guidance as needed. The PI is responsible for ensuring the removal of all chemical, radioactive, and biohazardous materials as well as the decontamination of the surfaces of the labs and associated equipment in which their work was conducted. <b>The PI may delegate tasks to another Responsible Party, i.e. lab staff appropriate to their level of training, knowledge, and ability; however, in all cases, it remains the PI's responsibility to ensure tasks are completed according to the guidelines and specified protocols.</b> This includes proper use of personal protective equipment when needed.
<b>Department/Division Business Manager (BM)</b>	Provides only support to the vacating lab. Admin staff shall not be required to undertake tasks for which they are not qualified through experience, or training, or that are not within the normal scope of their job duties. In the event that the vacating PI cannot be held accountable for their responsibilities, the department BM assumes the responsibilities otherwise assigned to the PI and must see that the tasks are completed by other means. The department BM will ultimately become the contact at this point and may ask another qualified Responsible Party for assistance. If this is not possible, the department BM may need to expend funds to complete certain tasks in the absence of the PI or Responsible Party. The department is accountable for fees resulting from unaddressed chargeable lab closeout tasks.
<b>EH&amp;S Department</b>	Provides technical guidance and advice; prepares policies and procedures to address proper lab close-out. Provides advice in accordance with relevant outside agencies to address proper handling, transfer, and disposal of biological, chemical and radiological materials. Can offer advice regarding decontamination of surfaces found in a lab so the space will be prepared for re-occupancy or for full or partial renovation.
<b>Biological &amp; Chemical Safety</b>	Advises Responsible Parties on proper lab close-out procedure. Performs the final inspection to release the room from the vacating PI for renovation or new occupancy.
<b>Environmental Compliance</b>	Removes surplus and unwanted material/waste containers as well as biohazardous waste and universal waste. Provides advice on inter- and intracampus chemical transfer, to include identifying qualified moving companies.
<b>Radiation Safety</b>	Provides technical assistance on permitting. Provides advice on transfer of materials. Performs final surveys of the lab as well as large equipment where radioactivity was used or stored. Point of disposal for rad waste.
<b>Occupational Safety</b>	Responsible for ensuring asbestos remediation advice.

<b>Definitions:</b>	
<b>Laboratory</b>	A laboratory is a space where research or teaching is conducted, and where relatively small quantities of hazardous chemicals, biological materials and/or radiological agents are used. In a lab, much of the work involves manual manipulation of small containers or bench-top apparatus, and the work does not result in the routine production of goods.
<b>Responsible Party</b>	Principal Investigator or PI/departmental designee that has authority for the equipment or lab area and understands the hazards associated with the related chemical, biological or radioactive materials, and the training to handle those materials.
<b>Contaminant</b>	A substance found in a lab space that is potentially harmful, hazardous, or creates a nuisance.
<b>Lab Decontamination</b>	The removal of chemicals, drugs, sharps, biological materials, radioactive materials, supplies, papers/records, equipment, and the removal of gross contaminations from surfaces. Labs in a decontaminated condition do not pose a recognized hazard to staff, visitor, or contractors.
<b>Close-Out</b>	A close-out is the final inspection by EH&S to verify that the process of removing all the accessible chemical, biological and radioactive materials, equipment, consumables, and any unwanted papers/catalogs, as well as any related contamination from accessible surfaces was performed by the responsible user. This is to confirm that the space can be safely reused by other laboratory staff, or undergo renovations by contractors.
<b>Partial Close-Out</b>	This is the process by which a specified area within a lab space is closed-out with the understanding that construction in the space will be confined to the area that underwent a decontamination process and final close-out inspection by EH&S.

#### **Early Closure Steps (at least six weeks prior to vacating space)**

- 1) When it is known that a PI is vacating a laboratory or that his/her current space is to be renovated, the department/division business manager is to notify a representative from EH&S Biological & Chemical Safety Division (362-6816) and from EH&S Radiation Safety Division (362-3476). Typically this notice will be given to the auditor assigned to the building and the inspector assigned to the PI from these EH&S divisions, respectively.
- 2) Please note that this document only addresses EH&S (including Radiation Safety) policies regarding laboratory closures. Any other relevant compliance offices (Animal Studies Committee, Office of Sponsored Research Services, Office of Technology Management, etc.) should be notified as they may also have applicable policies for laboratory closures.

#### **Early Closure Steps (at least four to six weeks prior to vacating space)**

- 1) If the lab space will be renovated before another PI moves in, the business manager should contact Design & Construction for the Medical School campus, or Facilities Planning & Management for the Danforth campus, to make them aware of the impending lab closure. **Regardless of the cost/size of the project, this should be done** even if the department/division is hiring an outside contractor to do the work. Design & Construction/Facilities Planning & Management will perform an asbestos survey after the final inspections by EH&S, and will request asbestos abatement by an accredited outside vendor if necessary.
- 2) If a lab group will be re-locating to a new space within Washington University, any new rooms that will be used in conjunction with radioactive materials must first be approved by the Radiation Safety Committee before any radioactive material can be moved there. You may obtain the necessary amendment form from Radiation Safety's website: <http://radsafety.wustl.edu>. The Authorized User (PI) will be notified and the room will be posted for radioactive materials upon approval. If a lab group will

be re-locating to a new space within Washington University, please contact the Biological and Chemical Safety division to review the new location and potential requirements. Please note that other regulatory and compliance offices (e.g. Animal Studies Committee) may also need to approve lab relocations. Please contact these offices directly for guidance on obtaining these approvals.

- 3) If hazardous materials are to be shipped to another university or will travel to another laboratory on either campus via public roads, the PI or another Responsible Party should consult with EH&S Environmental Compliance on vendor selection, proper packing, moving, and/or shipping of these materials.
- 4) The PI or another Responsible Party will notify EH&S Environmental Compliance Division (Danforth Campus: 935-4650/Medical School: 362-6735) of the need for unwanted material/waste pickup and disposal **at least four to six weeks** before the anticipated collection date. Please plan submissions accordingly. The greater the volume of surplus chemicals, the more time needs to be allowed for removal. Contact Environmental Compliance to evaluate volume and coordinate chemical pickups, which may need to be done in stages over the course of several weeks. If advance notice is not given or is not possible, an EH&S-approved outside vendor will be called in to clean out the materials and equipment at the expense of the department/division. Gas cylinders should be returned to the original companies according to those companies' procedures. Detailed guidance is available in the EH&S policy on Laboratory Cleanouts.
- 5) Equipment containing potentially hazardous materials may be considered regulated waste to be picked up by EH&S Environmental Compliance. Guidance on what materials are considered universal waste may be found at: [http://ehs.wustl.edu/resources/EHS\\_Documents/Hazardous, Universal and Regulated Equipment Disposal Policy.pdf](http://ehs.wustl.edu/resources/EHS_Documents/Hazardous,_Universal_and_Regulated_Equipment_Disposal_Policy.pdf). Be sure to coordinate with Environmental Compliance for equipment removal to avoid any "last minute" submissions, as this can cause delays in having the space closed out. Environmental Compliance will be able to assist in selection of an approved mover.

**Please be aware that certain equipment must have hazardous components (Freon, oil, lead, radioactive sources) removed before they are disposed of, sometimes by an outside vendor, which may take time. For example, refrigerators must have the Freon removed. Be sure to contact Environmental Compliance if you have any questions.**

- 6) If no renovation will be taking place, you may leave equipment behind that has been clearly marked for the oncoming PI, or as departmental equipment.

### **Two Weeks Before Closure**

- 1) The PI or another Responsible Party will place properly completed unwanted material/waste labels on all chemical containers that are to be picked up as unwanted material/waste by EH&S. PI or another Responsible Party will then complete Request for Pickup (RFP) forms for the disposal of all chemical, biological, sharps, and universal waste to be removed by EH&S. If biological or sharps waste is disposed of by an entity other than EH&S (such as Barnes-Jewish Hospital for WUSM labs in BJH buildings), please follow those procedures for waste disposal. RFP forms may be submitted online at the EH&S website. Unless it has been arranged for equipment to stay behind, it needs to be removed as equipment/electronic or universal waste. It is advisable to have submission of these materials coordinated and underway at this time. The PI or another Responsible Party will ensure that radioactive waste is transferred to Radiation Safety using the normal waste pickup schedule and procedure. They must also arrange (through Radiation Safety) for any remaining radioactive materials or equipment to be transferred (through Radiation Safety) to another university or another WU Authorized User. If a lab group is relocating to new space within Washington University, members of the lab group may manually move dry radioactive materials or equipment labeled for use with radioactive materials to the new space,

after the new space has been approved in writing by the Radiation Safety Committee. If radioactive materials or pieces of RAM-labeled equipment are to be shipped to another university or will travel to another WU laboratory via vehicle on public roads, then the PI or another Responsible Party must notify Radiation Safety, who will package, label, and either ship, approve for transport, or transport the items to their final destination.

- 2) The PI should determine how remaining viable chemicals, supplies, and equipment will be reallocated if he/she no longer wishes to keep these materials. The PI should donate chemicals and supplies to other labs and determine if equipment will be given to other investigators or if they will become departmental property.

**There are limitations and restrictions to relocating and donating materials:**

**\*Highly hazardous/regulated materials should not change hands without prior approval!**

Some examples include, but are not limited to, the following materials:

- Select agent materials
  - DEA materials
- Potentially explosive materials:
  - Ether cans, picric acid, perchloric acid
- Radioactive materials
  - Hydrofluoric acid
  - Lecture cylinders
- Toxic gas cylinders (CO, fluorine, NO, etc.)

- 3) The donation or disposal of any radioactive materials or equipment used with radioactivity should first be cleared with Radiation Safety, as they will need to survey the equipment and approve the transfer of radioactive materials.

**Just Before Closure**

- 1) The PI and lab staff or another Responsible Party may need to continue to submit surplus chemicals and chemicals determined to be unwanted material/waste to Environmental Compliance. Unwanted material/waste must be submitted for pickup by completing a Request for Pickup (RFP), found online at the EH&S website. Any unwanted material/waste, abandoned chemicals, or leftover equipment may delay closure of the lab and subsequent renovation. If necessary, an EH&S-approved outside vendor will be called in to collect the unwanted material/waste and equipment at the expense of the department/division.

**Please do not wait until the last minute to request removal of equipment and materials.**

- 2) The PI and lab staff or another Responsible Party will pack, move, and/or ship all non-hazardous materials in the laboratory. If large appliances or other equipment are being left behind for the next investigator, mark them in some fashion to state this intent.

**As a reminder, do not attempt to transport or ship hazardous materials without prior approval. Transportation of hazardous materials on the public roads, even inter-campus moves, must be done by a licensed hazardous materials transporter.**

For intracampus moves, please contact EH&S for guidance on packing container selection and route selection in order to avoid high traffic, carpeted areas.

- 3) The PI or another Responsible Party will perform a final survey of the lab spaces to ensure that no unwanted material/waste, chemicals, gas cylinders, or other materials remain in the lab. Glass waste should be sealed in a plastic bag-lined cardboard box for regular trash collection. Remember to empty

refrigerators, desk drawers, and under-sink areas. All lab spaces and other rooms (dark rooms, scope rooms, supply storage) under the control of the PI should be emptied. In addition, all materials belonging to the vacating lab should be removed from common use areas (cold / warm rooms, equipment rooms, etc.).

- 4) The PI or another Responsible Party is responsible for making sure all items are removed from the laboratory space. Please be sure to submit all materials for proper disposal within an appropriate amount of time. The lab close out cannot take place if any material is left behind. Do not abandon materials; last-minute submissions may cause a delay in the close out of the lab.
- 5) The PI or another Responsible Party will perform a final meter and/or wipe survey of the lab, as appropriate, to ensure that no radioactive contamination remains. After disposal of these last used scintillation vials as radioactive waste, the lab group should perform a final visual inspection of the lab spaces to ensure that no radioactive stock vials, samples, wastes, etc. remain in the lab.
- 6) The lab is responsible for wiping down all surfaces with an appropriate disinfectant or detergent solution.

### **Closure (when lab has been vacated)**

- 1) The business manager, the PI or another Responsible Party will notify the appropriate Biological & Chemical Safety and Radiation Safety auditor/inspector that the lab spaces have been cleared. Please give the auditors advanced notice so they can schedule accordingly.
- 2) The EH&S Biological & Chemical Safety auditor and the EH&S Radiation Safety inspector will inspect the lab areas and perform final radiation surveys. The EH&S auditor/inspector that performs the initial closure inspection will post the Laboratory Safety Status form.
  - a. The EH&S Radiation Safety inspector will perform a visual inspection, instrument surveys, and wipe tests in the lab. If the wipe tests show residual radioactivity, the lab staff will be required to clean the contaminated areas and a second wipe test will be performed. If the investigator and lab personnel have already left the university, Radiation Safety will clean the contaminated areas and bill the appropriate department/division for its services. The EH&S Radiation Safety inspector will sign the Laboratory Safety Status form and remove radioactivity signage only when the wipe tests show that the lab is free of radioactivity.
  - b. The EH&S Biological & Chemical Safety auditor will perform a visual inspection of the lab spaces to ensure that all unwanted material/waste, chemicals, gas cylinders, equipment, and other materials have been removed. If any of these items still remain in the lab, the auditor cannot sign the Laboratory Safety Status form until the items are removed or properly disposed of by the investigator or another Responsible Party. If the investigator and lab personnel have already left the university, the department/division is responsible for the proper disposal of any remaining materials in the lab. The department/division may ask another Responsible Party, or may choose to hire an outside EH&S-approved contractor or EH&S to remove the remaining materials. If EH&S personnel must perform any packing, cleaning, or materials disposal beyond the normal pickup and disposal of hazardous materials, the appropriate department/division will be billed for services rendered at a rate of \$40 per man-hour. When the lab passes inspection, the auditor will sign the Laboratory Safety Status form.
- 3) Once the Laboratory Safety Status form has been signed by the auditor and inspector, the business manager will contact Design & Construction (Medical School), or Facilities Planning & Management (Danforth) to let them know that EH&S has officially closed the laboratory and the space is now ready for asbestos surveys, if necessary.
- 4) It is the responsibility of PI or another Responsible Party to update the Institutional Biological and Chemical Safety Committee (IBC) protocol to reflect the change in location.
- 5) When Design & Construction/Facilities Planning & Management has completed the asbestos survey and any necessary abatement, the business manager or investigator may contact Custodial Services (Medical School), or Custodial Services (Danforth) to have the room cleaned or notify the contractors in charge of the renovation to begin construction.

**Note: Custodial services will not be able to enter for their routine cleaning, and no construction can begin until all the appropriate signatures are on the Laboratory Safety Status form.**

Routine cleaning by custodial services is separate from the cleaning that labs need to perform. Custodial services will not clean up chemical residues/spills, which can cause delays in construction. Therefore, labs need to be sure to wipe down all surfaces in which lab chemicals were used.

### **After Closure (when space is reoccupied)**

The department/division business manager should notify the appropriate EH&S Biological & Chemical Safety auditor when a new investigator occupies the lab space, so that he/she may be given an Environmental Health & Safety Handbook ("Blue Book"). Any investigator moving into a new space must request authorization from

the Radiation Safety Committee before obtaining, using or storing radioactive materials in any laboratory. For existing Authorized Users, use of a new space will require an “Application to Amend a Radioactive Materials Authorization”. Primary Investigators who are not currently approved as Authorized Users should contact EH&S Radiation Safety for information on how to apply.

## Quick Laboratory Closure Overview

### At Least Six Weeks:

- Notify EH&S Biological & Chemical Safety auditor and EH&S Radiation Safety inspector of investigator departure/lab renovation. Also notify Design & Construction, if necessary.

### At Least Four to Six Weeks:

- Notify EH&S Environmental Compliance of impending unwanted material/waste removal **at least four to six weeks** before it needs to be collected.
- Pack all chemicals, equipment, supplies, and samples for moving or shipping. Donate unwanted materials to other labs or the department/division. Have EH&S Radiation Safety ship or transfer any radioactive materials.
- Have all chemical, biological, radioactive, and sharps waste and gas cylinders removed from the lab by submitting a Request for Pickup (RFP) form online at the EH&S website. Properly dispose of any remaining glass or non-hazardous materials.

### Just Before Closure:

- Clean out all cabinets, drawers, desks, refrigerators, freezers, fume hoods, biosafety cabinets, incubators, etc. in the lab. Do not leave any materials in the area unless prior arrangements have been made with the new investigator or the department/division to take responsibility for these materials.
- Wipe down all surfaces, cabinets, and fume hoods with an appropriate disinfectant or detergent solution.

### Closure:

- Notify EH&S Biological & Chemical Safety auditor and EH&S Radiation Safety inspector that the lab is empty and ready for final inspection.
- When the lab passes the final EH&S inspections (auditor/inspector have signed the Laboratory Safety Status form), notify Design & Construction (Medical School) or Facilities Planning & Management (Danforth), if necessary, that the lab is ready for an asbestos survey.
- When all the necessary signatures are obtained on the Laboratory Safety Status form, notify Custodial Services that the lab is ready to be cleaned or notify the contractors that the lab is ready for renovation.

### After Closure

- Notify EH&S Biological & Chemical Safety auditor and EH&S Radiation Safety inspector when a new investigator arrives.

## **Contact Information:**

EH&S Main Office:	362-6816
Radiation Safety Main Office	362-3476
Environmental Compliance (WUSM)	362-6735
Environmental Compliance (Danforth)	935-4650
Animal Studies Committee (ASC)	362-3229
Design and Construction (WUSM)	362-8145
Facilities Planning & Management (Danforth)	935-5550
Design and Construction (BJH)	953-1900
Custodial Services (WUSM)	362-3563
Custodial Services (Danforth; Aramark)	935-5030
Housekeeping (BJH)	747-7000
Request for Pickup (RFP) forms	<a href="http://ehs.wustl.edu">http://ehs.wustl.edu</a>