



The primary responsibility for the proper disposal or transfer of hazardous materials used in laboratories lies with the Principal Investigator or Researcher so that all substances and equipment are safely moved, or disposed of, and the space has been appropriately decontaminated. Researchers are encouraged to consult the University Lab Safety Manual and Chemical Hygiene Plan, Biosafety Manual, Radiation Safety Manual, and the Hazardous Waste Manual, for guidance on the proper disposition of research materials. Departments are also responsible for ensuring that research spaces are vacated in an organized fashion, which enables the space to turn over to construction crews or the next occupant free from hazards. This guide provides standardized processes, strategies, and validation methods for screening and characterization of hazardous debris, proper decontamination of workspaces, and compliance with hazardous waste regulations. This process is used whether the lab move is within the university or to another off-campus location.

Responsibilities:

Researcher/ Principal Investigator

- Notify the department chair, department safety representative, the building coordinator and Environment, Health, and Safety (EHS) of the intent to move or close the lab. Discuss needs, concerns, and timelines of lab decommissioning with your facility coordinator, Department Safety Representative (DSR), and EHS. Several months of notice and work are generally required to properly decommission a laboratory for move out, renovation or re-occupancy.
- Provide area managers and EHS information on historical use of biohazardous materials, radioactive materials, and hazardous chemical usage for decontamination analysis.
- Plan early for the disposal of hazardous materials such as chemicals, microorganisms, tissues, and radioactive materials. Provide chemical inventory to EHS to aid in the relocation or disposal of unwanted chemicals.
- Ensure that materials generated in the conduct of research by individuals working in the lab have been properly identified or disposed of prior to them leaving the University.
- Ensure that research material cleanouts are performed by staff knowledgeable of hazards and appropriately trained in required safety procedures.

- Adhere to established EHS procedures for the safe and compliant disposal and decontamination of research materials and equipment.
- Maintain assigned facilities in clean, safe, and operable conditions during the lab closeout process. Corridors and other egress paths must remain free of trash or hazardous materials. Access to emergency equipment inside or near the lab space (Eyewash, Safety Shower, Fire extinguisher) must remain unimpeded.
- Ensure that contamination resulting from research activities or clean out has been appropriately cleaned and removed prior to vacating assigned spaces.
- Complete Laboratory Decommissioning Checklist and Research Equipment Decommissioning Form and provide them to EHS, the DSR, Facility Coordinator, or other college representatives.
- Negotiate the disposition of laboratory equipment with the Department or Research Center Administrator.

EHS

- Provide guidance on applicable federal, state, and local regulatory requirements for decommissioning of laboratories.
- Provide technical guidance and advice on decontamination and hazardous material disposal.
- Assist with risk assessments for regulatory compliance and safe work practices.
- Provide materials such as boxes and hazardous waste tags to assist in the preparation of chemical hazardous wastes for removal.
- Upon request, schedule removal of appropriately labeled and packaged wastes destined for disposal.
- Provide continual review of project decommissioning as new information is obtained.
- Provide a final walkthrough of the lab to verify space is clean and decontaminated and that equipment for disposal or moving has been adequately decontaminated and hazard signs have been removed.

Department Chairs and Unit Directors

- Allocate space appropriately and match research safety needs with facility capabilities.
- Communicate assigned spaces or changes in assignments to Researchers/Principal Investigators and facilities management staff.
- Inform the Principal Investigator of responsibilities related to management of research spaces and materials.

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- Notify Facility Director or Manager/ Building coordinator of pending changes to lab occupancy.
- Assure that vacated spaces have been cleared by EHS, the Safety Manager and/or Facility Manager prior to renovation or reassignment.
- Bear the costs of decontamination and disposal of research materials in instances where there has been a failure by the PI to meet their responsibilities or when costs cannot be recovered from the investigator.

Department Safety Representative / Research Center Administrator

- Represent department interests in space decommissioning process.
- Establish and communicate a timeline for space decommissioning given faculty status.
- Ensure that department assets are appropriately inventoried and reallocated.
- Ensure that spaces are returned to the department in a timely manner and in satisfactory condition.
- Update the HASP door sign to reflect the current hazards (i.e. if empty, none) and the responsible person

Facilities Manager / Building Coordinator

- Ensure that EHS, Safety Manager, Facility Director, Department Chair is informed of any potential changes in lab occupancy
- Assist EHS, Safety Manager, and/or Facility Director to coordinate the decommissioning process
- Assist the PI and research group in managing repair requests, locating equipment, and clarifying expectations as they relate to University policies and practices.
- Be knowledgeable in the decommissioning process.
- Evaluate and provide guidance on packaging, moving, or relocating hazardous materials used in research
- Arrange for proper decommissioning and decontamination of abandoned laboratory spaces.
- Review and discuss costs of decommissioning activities, including labor charges to properly segregate and label hazardous material with the Department Chair or Administrator.
- Verify that the space is free of hazardous materials and contamination prior to being released to the department.
- Ensure the space has been cleared by EHS, the Safety Manager and or Facility Director prior to reassignment or renovation.

Laboratory Decommissioning Guidance:

Procedure

The steps listed below must be taken whenever a PI or other Lab Supervisor plans to vacate their laboratory space. Laboratory space cannot be re-occupied, nor renovation work started, until the space has been inspected and cleared by all the relevant groups from Environmental Health and Safety (EHS).

1. Upon notification from, or to, the Department Chair or Administrator of a change in lab occupancy, the department or PI should contact EHS to set up a meeting to be held with the PI or researcher, Department Representatives, and Facility Manager to establish a schedule and identify appropriate action items.
2. The Safety Manager or Facilities Manager and Unit Capital Assets Manager will review the relevant spaces to determine the presence and disposition of capital assets and develop a list of actionable items for the Department, PI, and staff.
3. The findings of the initial review will be provided to the faculty member and the Department Administrator.
4. The PI and his or her team will work to address the items identified in the initial review along with items described below and complete the Laboratory Close-out Checklist.
5. If a PI is unable to address the action items identified in the initial site review, the department will implement an assisted cleanout process which entails obtaining bids for the costs of the cleanout and providing this information to the Department Administrator for approval.
6. EHS staff from the relevant chemical, biological and radiation safety groups will conduct a final walkthrough of the spaces. If spaces are found to be in unsatisfactory condition, written notification to this effect will be provided to the PI and Department detailing the remaining action items. If the spaces are found to be in satisfactory condition, written notification will be provided to the PI and the department who will then update and post the HASP signage to reflect lab vacancy.

General:

- Create a plan to remove all items from the lab (or scheduled to be removed), including items in drawers, cabinets, fume hoods, refrigerators, freezers, etc. Be considerate of custodial staff and maintenance staff who may not understand the hazards of the lab work your group conducted and dispose of items safely.
- Surplus tables, cabinets, etc. that are no longer needed or wanted, should be identified with a note and the information on these items should be provided to your DSR to see if these items could be donated to someone else in your

department. The DSR should arrange for transfer of these items to new areas or tagged for disposal once the items have been entirely cleaned and decontaminated.

- Clean out refrigerators and freezers and defrost freezers. Samples must be disposed of appropriately according to the hazards they contain.
- Ensure all surfaces have been thoroughly cleaned with detergent and water. Bench tops, storage cabinets, and drawers (both inside and outside), shelving, and the outside of large equipment that is scheduled to be moved. Areas potentially contaminated with biohazards such as bench tops, refrigerators, centrifuges, must be cleaned with a disinfectant appropriate to the organisms used in the lab.
- Identify contaminated area(s) that cannot be cleaned by researchers and work with EHS to facilitate decontamination of the area(s). This includes biosafety cabinets, fume hoods and other equipment.
- The following items are picked up by the R5 group (607-255-1666) – used oil, batteries, fluorescent bulbs, lead sheeting and block.
- Return all keys to your Key Control Coordinator and provide them with your contact information in case questions arise.

Chemicals:

- Update your current chemical inventory to aid in detailing decisions as you go through the process of decommissioning your laboratory. Questions about what hazardous waste is and what can be donated to groups within the department can be more easily answered.
- All chemicals that are not being taken to a new lab space should be separated into those going to be repurposed to another lab or disposed of through hazardous waste.
- EHS can provide research groups with information and assistance with segregation and proper packaging of hazardous chemicals.
- EHS cannot accept for waste, containers that are broken, have broken tops, containers that have glass stoppers or other non-sealable lids. Material can be transferred to a compatible container or over packed within in another sealable container.
- For questions about proper disposal of hazardous waste contact EHS at [“askEHS”](#).

- Chemicals should be moved only by trained individuals. Any highly toxic, highly hazardous, or reactive chemicals should only be moved by staff who have received special training. When moving highly toxic or highly hazardous chemicals, EHS recommends a "buddy system" be used in the event of a spill or other emergency.
- When moving chemicals, be sure all containers are properly labeled, and all are securely closed. When transporting chemicals, it is best to use DOT approved shipping containers and secondary containment.
- There are special regulations associated with transporting hazardous chemicals off campus, see the EHS webpage for Hazardous Materials Shipping for more information. Hazardous materials must not be transported in a personal vehicle. When packaging chemicals, use a packing material (such as vermiculite, ground corn cobs, shipping peanuts, cardboard, absorbent clay, etc) that is compatible with the chemicals to prevent bottle breakage during transport. Only place chemicals that are compatible with each other in the same container and do not overload containers of chemical bottles.
- When transporting chemicals, it is best to use carts with lips or trays to prevent containers from being knocked off. Other items that are useful for transport include rubber bottle carriers, five-gallon pails, or other forms of secondary containment.
- When moving chemicals, wear appropriate personal protective equipment such as safety glasses or splash goggles, lab coat, and gloves. Remove gloves when touching doorknobs and latches, and elevator buttons. If possible, avoid using passenger elevators. If you must use a passenger elevator, request that no passengers ride along with you.
- Reactive earth metals (sodium and lithium, etc.) need to be packaged in a volume of 1 pound or less (not counting the jar and oil). One pound per container is the maximum that the waste vendor can and will take for safety reasons.
- Fume hoods must be cleaned of debris and a surface decontamination completed. If there is significant contamination within the ductwork, this must be communicated with area managers and EHS so that an outside vendor may be hired to clean the ductwork of specific contaminants

Biological Materials:

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- If laboratory work involved Select Agents or Toxins, consult with EHS Biosafety prior to conducting any work in preparation for the move. Specific procedures must be followed.
- Communicate in writing, to the Cornell Office of Research and Sponsored Programs, Institutional Biosafety Committee, Institutional Animal Care and Use Committee, or Institutional Review Board to discontinue or modify all approved protocols, as appropriate.
- If a USDA or CDC permit is associated with your laboratory operations, all related materials must be destroyed, or the permit updated with the regulatory authorities to allow for intra- or inter-facility transport.
- If the lab works with plants, contact the appropriate facility managers to transfer plants to other PIs or arrange for destruction of materials.
- If the laboratory has been involved in work with live animals, contact the [Center for Animal Resources and Education](#).
- Biohazardous materials must be properly packaged and only moved by properly trained laboratory staff. Non-laboratory personnel (including moving company staff) or untrained laboratory personnel are not permitted to move biohazardous materials. Transfer permitting requirements may also apply (e.g., CDC or USDA permits) depending on the agent.
- All surfaces and equipment from laboratories must be decontaminated with an appropriate disinfectant. Appropriate choice of disinfectant may be determined by
 - Referring to the approved IBC Memorandum of Understanding and Agreement,
 - Contacting the Biosafety Office at askEHS@cornell.edu, or
 - Consulting [Pathogen Safety Data Sheets](#)
 - Referring to the EPA's website for selected registered disinfectants. Appropriate use may be determined by referring to the manufacturer's requirements for the use and contact time.
- If you have a Biosafety Cabinet (BSC) thoroughly decontaminate both the inside and outside of the cabinet. Biosafety cabinets that are moved to another location must be gas or vapor decontaminated by an appropriate vendor in addition to surface decontamination performed by researchers or lab staff. Cornell University has a contract with B&V Testing, please schedule directly with them.

ANIMAL AND HUMAN TISSUES

This includes animal carcasses, tissues or animal or human origin.

- Separate tissue from liquid preservative. Liquid preservatives may be hazardous waste. Do not assume that preservatives may be flushed down drains. Contact the Safety Manager if you have questions.
- Place any tissues of human origin, animal tissues, cell lines, Risk Group 2 organisms or other infectious tissue in a red biohazard waste bag per University Regulated Medical Waste procedures.
 - Regulated medical waste includes cultures and stocks of infectious agents, culture dishes and devices used to transfer, inoculate or mix cultures that have come into contact with or are known to be contaminated with biological agents infectious to humans, or agents of economic concern (e.g., foreign animal diseases); human pathological wastes, body fluids, human blood and blood products or components, animal waste, including animal carcasses, body parts, body fluids, blood or bedding originating from animals known to be contaminated with infectious agents.
- Decontaminate all waste materials and unwanted stocks, generally by autoclaving. This may involve disposal of regulated medical waste or recombinant materials through the appropriate waste pipeline. Devitalize arthropods by freezing before autoclaving.
- Recombinant materials are to be disposed as appropriate. Please refer to the Laboratory Waste Disposal Guide for more details on appropriate waste pathways.
- Submit a request to EHS for the disposal of regulated medical waste. To request a pickup, fill out the form on the [EHS website](#).
- Contact the EHS Biosafety Officer for a final walkthrough. The biosafety office will remove agent placards/signage from doors, equipment, etc. at the time of the final walkthrough and upon demonstration that decommissioning has been completed

Radioactive Materials: Refer to Radiation Safety Manual Section 9.4 for [Disposal of Radioactive Material](#) and the Waste Procedure for [Disposal of Radioactive Materials](#).

- NOTE: All the following steps must be coordinated through one of the EHS staff members from the Radiation Safety Group. Advance notification of your planned move is required, contact askEHS@cornell.edu.

- If any equipment contains any radioactive material (e.g., static eliminators in balances, electron capture devices in gas chromatographs), X-rays, or lasers, contact radiation safety in EHS for assistance with transfer or disposal. These items may be on university inventory lists that must be maintained accurately. Identify any new locations for these items.
- Contact EHS to remove any stocks, samples, and contaminated supplies.
- Properly dispose of any radioactive waste. To request a radioactive material waste pickup, fill out the form on the EHS website: Waste Pickups
- Perform a complete survey using a calibrated meter, including all authorized rooms, equipment, and high touch areas.
- All vacated rooms must be certified as contamination free before they are turned over to custodians, maintenance workers, or new lab occupants.
- For the removal of equipment that has been used with radioactive materials, these must be certified as contamination-free before the equipment is handled by movers and not by laboratory staff.
- Only properly trained staff may move radioactive materials and small equipment used with radioactive materials. All materials must be properly packaged and shielded.
- If there is significant contamination within the fume hood ductwork, this must be communicated with area managers and EHS so that an outside vendor may be hired to clean

Compressed Gases:

- Before moving any compressed gas cylinders, remove the regulator and replace the safety cap over the cylinder valve. Only use an appropriate cylinder handcart to move compressed gas cylinders. Do not attempt to "roll" or "walk" cylinders from one area to another.
- Any compressed cylinders containing highly toxic or highly reactive gases should only be moved by staff with special training in the use and hazards of these materials.
- Do not leave compressed gas cylinders unsecured at any time.
- If possible, avoid using passenger elevators. If you must use a passenger elevator do not ride in the elevator with the gas cylinder.

Mixed Hazards

- Occasionally it is necessary to dispose of materials that may contain more than one hazard. Contact EHS at 607-255-8200 for information on the disposal of any combination of bio-hazardous materials, and chemicals and/or radioactive materials.

Export of Materials or Data out of the Country

- Contact the [Cornell University Export Controls Office](#)

Computers & Electronics: Refer to list of materials and [recycling guidelines for R5](#).

- Work with the department equipment asset coordinator to determine the fate of equipment remaining in the spaces.
- Decontaminate computers or electronics that are potentially contaminated with hazardous materials prior to disposal.
- Dispose of or remove personal computers and other non-fixed electronics not slated for disposal.
- Notify the Facility Manager/ Coordinator if you suspect that an item may contain hazardous materials such refrigerants, coolants or, PCB oil, etc.
- Contact others to determine if items can be used by another researcher.

Laboratory Decommissioning Checklist

Chemicals

- Unwanted materials in beakers, flasks, evaporating dishes, etc. have been disposed via appropriate means.
- A hazardous waste pickup request has been placed by filling out the form on the [EHS website](#).
 - Small bottle(s) have been placed in a Ziplock bag and the waste label attached to the Ziplock bag.
- Unwanted chemicals that could potentially be used by other labs are segregated and identified. Department safety representative has been contacted to facilitate any transfer of chemicals.
 - Chemicals that will be repurposed to another lab are in clean original containers.
 - Chemicals transferred to another owner have been incorporated into the new owner's chemical inventory.
- Materials or chemicals to be retained are properly labelled and stored in appropriate containers.
 - Chemicals are segregated in accordance with compatibility, packed into a sturdy container/box and [labelled](#) for transportation.
- Lab has been searched including drawers, cabinets, refrigerators, and freezers to make sure all samples and chemicals have been identified.
- Completed a new chemical inventory for the items to be retained.

Compressed Gas Cylinders

- Gas connections have been removed, cylinder caps replaced, and cylinders placed in an appropriate area for pick up.
- EHS has been contacted for disposal of any lecture bottles of non-returnable cylinders such as those obtained through military surplus

- Gas vendor contacted and pickup arranged for the removal of any compressed gas cylinders that will no longer be used or for return of any empty cylinders. If you need assistance having the cylinders removed, contact your Department Safety Representative or Facility Manager.

Controlled substances:

The US Drug Enforcement Agency (DEA) issues controlled substance permits to individual researchers. Abandonment of a controlled substance is a violation of the DEA permit under which it was held. Permission to dispose or transfer ownership of a controlled substance to another individual must be received from DEA.

- Investigators leaving Cornell University must properly dispose of controlled substances through reverse distribution prior to expiration/surrender of state license and DEA registration and prior to leaving Cornell University. EHS has been contacted through askEHS@cornell.edu to arrange for reverse distribution.
- Documentation of disposal must be kept and maintained in records log for 2 years with the department and EHS. Documentation has been forward to department and EHS.
- All Senior authorized users and authorized users have had their access revoked and signed off by licensee/registrant in records.
- Licensee/Registrant has contacted proper agencies to surrender Active NYSDOH license and DEA registration.
- Keys to lockbox and/or combinations to safe or key boxes have been given to department business office and/or EHS once controlled substances have been removed.
- Records / Logbook have been handed in to department and maintained for a minimum of 2 years following licensee/registrant's surrender of license/registration.
- EHS has been contacted for completion of a final inspection for controlled substances prior to licensee/registrant's final working day.

Biological Materials

- Unwanted samples and specimens have been rendered non-viable by a method appropriate for the organisms present.

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- All material from centrifuges, incubators, refrigerators/freezers/ liquid nitrogen dewars has been removed.
- Regulated medical waste pickup request has been submitted to EHS and has been scheduled or pick up has already occurred.
- Liquid media, cultures, human bodily fluids, or other liquid potential infectious materials have been autoclaved or treated with an appropriate disinfectant for the recommended contact time and then drain disposed.
- Biohazardous materials are properly packaged and only moved by properly trained laboratory staff. Non-laboratory personnel (including moving company staff) or untrained laboratory personnel are not permitted to move biohazardous materials.
- Infectious or recombinant materials to be retained at Cornell have been transferred to an active IBC Protocol.
- Biosafety Cabinet (BSC) is thoroughly decontaminated both inside and outside with an EHS or IBC approved disinfectant. An external vendor has disinfected the filter of the unit with vaporized hydrogen peroxide or formaldehyde. Users will not attempt to do this.
 - After moving to a new location, BSC has been recertified by a third-party vendor. Check with the manufacturers guidelines before moving your BSC.
- Non-flammable gas lines have been disconnected.
- Benchtops and all equipment (e.g., centrifuges, incubators, refrigerators/freezers/ liquid nitrogen dewars) have been cleaned and disinfected, with an EHS approved disinfectant.
- Guidance for the decontamination of other equipment has been reviewed and signage attached indicating it is decontaminated.

Sharps

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- Biohazardous sharps have been placed in red sharps container which must be labeled with group contact information and placed in RMW accumulation. Biohazardous sharps include all hypodermic needles and syringes, broken or unbroken plastic ware, glass, or sharp metal that has been in contact with infectious material or products of human or mammalian origin.
- Scheduled a [waste pickup](#) of sharps containers.

Residual amounts of Chemotherapeutic Agents

- This includes antineoplastic agents, hormones or hormone-like drugs, synthetic analogs and other carcinogens used in molecular biological applications (e.g., BrdU).
 - Placed in yellow chemotherapeutic waste container (rigid container, bag) and deposited in the Regulated Medical Waste bin.

Radioactive Materials

- Radiation Safety has been contacted to assist with termination of the Radioactive Use Permit - askEHS@cornell.edu
- Scheduled a [waste pickup](#) to dispose all remaining stocks, samples, waste, and contaminated supplies.
- Used a calibrated meter to perform a complete survey of the entire area and documented results. Unshielded dose rates must be ALARA below the regulatory limits specified on the survey form.
- Documented all results, both before and after any decontamination.
- Disposed of materials used for decontamination as radioactive waste.
- Filed the final contamination survey results with the laboratory's monthly survey records and send a copy to EHS.
- Scheduled a visit with EHS radiation safety staff to conduct the terminal survey for fixed and removeable contamination.
- EHS removed all material, performed, and documented an in-lab "final" contamination survey, including all authorized rooms and labeled equipment as well as high-touch locations like doorknobs, faucet handles, etc.
- EHS removed any final radioactive waste.

- EHS removed all remaining radioactive material postings.
- All Permit documentation has been given to EHS for archiving and compliance with NYS record retention requirements.

Equipment

- Fume hoods are clean of debris and a surface decontamination with detergent has been completed. If there is significant contamination within the ductwork, this has been discussed with area managers and EHS so that an outside vendor may be hired to clean the ductwork of specific contaminants.
- EHS and Facilities Management have been alerted to any exhaust or filtration equipment used with extremely hazardous substances or organisms.
- EHS has removed, defaced, or covered hazard labels on equipment to be moved or discarded.
- All stored electrical, mechanical, pressure hazards have been discharged.
- Department representative has been contacted to remove any unwanted equipment after it has been decontaminated.

General

- Cleaned all work and storage surfaces with detergent and water, with special attention given to areas with visible contamination.
- Broken glass boxes disposed.
- Floors are swept and are "broom clean" (e.g., no spills of hazardous materials present).
- Notified Facility Manager/ Coordinator Management when laboratory clean-up is complete.
- Inspected lab including drawers, cabinets, refrigerators, and freezers to make sure all hazards have been accounted for.

- Returned keys to Key Control Coordinator and provided them with your contact information in case questions arise.
- Submitted this form to EHS, and Department Representative.

I have completed the decommissioning of my laboratory, properly disposed of all hazardous material, and appropriately decontaminated all surfaces and equipment.

PI signature _____ Date _____

Building _____ Rooms _____