

Environmental Health and Safety SOP #EHS-004 Laboratory Closeout/Transfer Procedures Version 1.0

Effective: 09/20/22 Revised: New Document

ENABLING
DRIVER POLICIES,
REGULATIONS OR
STANDARDS

 University Policy 4.1.2, Environmental Health and Safety, https://www.fau.edu/policies/files/4.1.2%20Environmental%20Health%20and%20Safety.pdf

1. PURPOSE:

Florida Atlantic University (FAU) is committed to providing a safe and healthy environment for our faculty, students, staff and visitors. Vacated laboratories and their associated research materials (e.g., chemicals, biologicals, radioactive materials, sharps) and equipment that have not been properly cleaned, decontaminated and/or disposed of pose hazards to persons who may enter. Proper disposal or transfer of hazardous materials is required when a Principal Investigator or researcher with assigned laboratory space(s):

- is leaving the University
- is relocating to a new laboratory at the University
- is relocating to an off-campus location
- is being vacated for renovations.

This document establishes practical guidelines for lab moves or closeouts to minimize and eliminate:

- · Regulatory violations
- Hazardous Exposures
- · Chemical spills
- · Biological spills and contamination
- Disposal costs associated with unknown or high hazard chemicals
- Delays in re-occupancy or contractor activities

2. APPLICABILITY AND SCOPE:

The procedure applies to the closeout/transfer of all laboratories (academic and research) and laboratory support areas within all FAU-Operated facilities.

3. CONCEPTS AND DEFINITIONS:

3.1. Acronyms

BSC – Biological Safety Cabinet

- **BSO** Biosafety Officer
- **CFR** Code of Federal Regulations
- **DEA** Drug Enforcement Agency
- **DNA** Deoxyribonucleic Acid
- **DOT** Department of Transportation
- EH&S Environmental Health and Safety
- FAU -- Florida Atlantic University
- IATA -- International Air Transport Association
- IBC Institutional Biosafety Committee
- **LSO** Laboratory Safety Officer
- PI Principal Investigator
- **PPE** Personal Protective Equipment
- **RSO** Radiation Safety Officer
- SDS Safety Data Sheet
- SOP Standard Operating Procedure

3.2. Definitions

- 3.2.1. <u>Laboratory</u> A facility where the "laboratory use of hazardous materials, equipment or research with animals" occurs. It is a workplace where relatively small quantities of hazardous materials are used on a non-production basis.
- 3.2.2. <u>Academic Laboratory</u> A facility where curriculum-based experiments for study in science are conducted.
- 3.2.3. Research Laboratory A facility where scientific research and investigations is conducted
- 3.2.4. <u>Hazardous Materials</u> Hazardous Materials are defined in the <u>Chemical Hygiene Plan</u> and described in detail in Hazardous Material Manual, Appendix B of the Chemical Hygiene Plan. Hazardous Materials is any item or agent that can cause harm to humans, animals, or the environment. The transport and disposal of hazardous materials are regulated the U.S. Environmental Protection Agency (EPA), the U.S. Department of Transportation (DOT), and/or the U.S. Nuclear Regulatory Commission (NRC).

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- 3.2.5. Hazardous materials utilized in FAU laboratory settings typically include:
 - Flammable liquids
 - Combustible liquids
 - Flammable solids
 - Oxidizers
 - Corrosives
 - Organic Peroxides
 - Poisons
 - Explosives
 - Compressed Gases
 - Cryogenics,

- Radioactive materials,
- Biomedical/Biohazards
- Universal Waste
- 3.2.6. <u>Controlled Substances</u> A controlled substance is a drug, substance, or immediate precursor defined by the Controlled Substances Act .

4. RESPONSIBILITIES:

- 4.1. Department Head or Principal Investigator
 - 4.1.1. Ensure the environmental health and safety in their lab.
 - 4.1.2. Notify EH&S of planned lab move.
 - 4.1.3. Follow additional guidance from the depart
 - 4.1.4. Identify hazards with their lab
 - 4.1.5. Proper registration or termination of research
 - 4.1.6. Create work orders in FAMIS for any removals or repairs.
 - 4.1.7. Ensure the lab personnel follows prudent practices and complies with pertinent regulations
 - 4.1.8. Proper execution of the lab closeout or move
 - 4.1.9. Complete the Laboratory Closeout Checklist
 - 4.1.10. Assign a designee, if applicable

4.2. Environmental Health and Safety

- 4.2.1.Conduct an initial laboratory inspection with the PI or designee to identify and assess the hazards within the lab.
- 4.2.2.Conduct a final laboratory inspection with the PI or designee to ensure that all surfaces/equipment have been cleaned and surfaces have been disinfected as prescribed by the BSO
- 4.2.3. Coordinate the decontamination of equipment prior to any move, if applicable.
- 4.2.4. Coordinate the proper disposal of hazard waste in accordance to federal and state regulations.
- 4.2.5.Coordinate the proper destruction, transfer or storage of biological hazards in accordance to federal and state regulations.
- 4.2.6. Provide laboratory signage and labels.
- 4.2.7. Ensure all applicable portions of the lab closeout checklist has been executed
- 4.2.8.Coordinate unresolved environmental health and safety issues that remain in the space after the departure of the PI.
- 4.2.9. Keep the completed and signed original Laboratory Closeout Checklist for a minimum of 3 years.

- 4.2.10. Remove or relocate all radioactive material.
- 4.2.11. Survey potentially contaminated equipment and surfaces.
- 4.2.12. Conduct an exit survey.

5. SPECIFIC PROCEDURES/PROCEDURAL STEPS:

5.1. Inspection Process

- 5.1.1.Pre-closeout Inspection Upon notification that a lab is being vacated or moved, EH&S will contact the Principal Investigator to schedule a pre-closeout inspection of the space with the PI and/or a designee. During the inspection, the identification of all chemical, physical, biological and radiological hazards present and the actions required to properly close out the lab, to include the general guidelines listed below will be discussed.
- 5.1.2.PI or lab designate should print and complete the Laboratory Closeout/Transfer Checklist (Appendix I). Complete the checklist items and make sure of documentation.
- 5.1.3.Once the PI has completed the Laboratory Closeout/Transfer Checklist, they must contact the Laboratory Safety Officer to schedule the Final Inspection
- 5.2. Closeout Procedures for Hazardous Materials in Laboratories
 - 5.2.1.General Housekeeping
 - 5.2.1.1. Remove trash from the space including empty containers, papers, and disposable materials.
 - 5.2.1.2. Remove all lab matting, absorbents or chucks from all benches and cabinets and empty all drawers. Non-hazardous material may be disposed of as general waste.
 - 5.2.1.3. Remove all hazard identification signs and labels.
 - 5.2.1.4. Empty Chemical fume hoods of all chemicals and equipment/materials. Interior surfaces of the hood shall be wiped down with a mild detergent/water solution.
 - 5.2.1.5. Dispose of uncontaminated broken glass or unwanted glassware in a glass waste box with a clear plastic liner.
 - 5.2.1.6. Remove all non-fixed equipment and supplies from laboratories for closeout or relocation and appropriately decontaminated if necessary.

5.2.2.Laboratory Equipment/Supplies

- 5.2.2.1. Empty equipment (fume hoods, refrigerators, freezers, centrifuges, biological safety cabinets, incubators, ovens, countertops, cabinets, etc.) of all hazardous materials.
- 5.2.2.2. All laboratory-specific research equipment must be dismantled, correctly packaged and removed from the laboratory prior to decommissioning.
- 5.2.2.3. Decontaminate equipment contaminated or potentially contaminated with chemicals or biological materials.
- 5.2.2.4. Disinfect surfaces that may be contaminated with biological agents should be disinfected. See FAU Biological Safety Manual.

5.2.2.5. Visible (liquid or solid) hazardous material contamination should be cleaned in accordance with the FAU Chemical Hygiene Plan and (M)SDS. All other surfaces can be cleaned with warm, soapy water.

5.2.3.Chemicals

- 5.2.3.1. Update the chemical inventory in <u>SciShield ChemTracker</u> and in the lab segregate the chemicals by class and compatibility in preparation for the closeout/move.
- 5.2.3.2. Do not dispose of any chemicals in the sewer or drain or trash.
- 5.2.3.3. Check all common areas (fume hoods, chemical storage cabinets, refrigerators, freezers) for chemicals to be disposed of, moved or donated.
- 5.2.3.4. If moving chemicals between campuses or buildings or labs see the guidelines in the Laboratory Safety Manual
- 5.2.3.5. Label all chemicals with the chemical names. Abbreviations, chemical structures or trade names are not acceptable.
- 5.2.3.6. Please characterize all unknown chemicals.
- 5.2.3.7. Place properly labelled hazardous waste in the containers in the satellite accumulation area

5.2.4.On Campus Transfers - Chemicals

Departmental staff may move chemicals from one laboratory or building to another only if preapproval has been obtained from EH&S and if the following conditions are met:

- 5.2.4.1.1. Staff who will be doing the moving of the chemicals must be trained in the proper handling of chemicals
- 5.2.4.1.2. Chemicals to be exchanged should be in their original, undamaged containers, with the original label still affixed to the container
- 5.2.4.1.3. Before transfer check chemical containers for expiration dates. Dispose of all expired chemicals
- 5.2.4.1.4. Boxes can be used for solid containers, if in good condition
- 5.2.4.1.5. Do not use excessively large boxes to avoid overloading or unsafe handling
- 5.2.4.1.6. Bottles or containers containing liquids can be packed in boxes but must have secondary containment
- 5.2.4.1.7. All bottles and containers must be packed according to hazard classes. Non-compatible chemicals may not be packed or moved in the same box (Contact EH&S for assistance)
- 5.2.4.1.8. Each box should have inventories for their contents and attached to each box during movement. Required information will include chemical name, number of bottles and quantity in each
- 5.2.4.1.9. Carts used to move boxes must be sturdy enough to handle the weight of the boxes and terrain.
- 5.2.4.1.10. Any compressed gas cylinder being moved must be secured on a cart or rack.

Small lecture bottles must be packed as bottles

- 5.2.4.1.11. Adequate spill control material must be available for use by the moving crew
- 5.2.4.1.12. Contact EH&S (ehs@fau.edu) at the beginning and end of the move

5.2.5.Off Campus Transfers - Chemicals

Off campus transfers/shipments should only be conducted/supervised by EH&S personnel. Following these procedures will help to ensure that your package will arrive at its destination on time and intact. More importantly, it will ensure that everyone involved in the transport of the material will know what it is and how to safely deliver it. The following procedures apply to all biological materials, hazardous material/dangerous goods packages except radioactive materials. For assistance shipping radioactive materials call the Radiation Safety Officer (561- 297-3129).

- 1. Sender brings hazardous materials to EH&S along with the Safety Data Sheet (SDS).
- 2. EH&S will package, label and complete the proper shipping papers for the material.
- 3. EH&S will arrange for the shipping by a Commercial Carrier.
- 4. EH&S will be reimbursed by sender for all shipping costs, including packaging, labels, and shipping.

Note: Certain University employees may be authorized by EH&S to ship hazardous materials and/or dangerous goods provided they have successfully completed the training requirements specified in the DOT and IATA regulations (49 CFR 172.700 and DGR 1.5 respectively). See "Training Requirements" in the Laboratory Safety Manual.

Biological materials classified as Category A or Category B dangerous goods (Class 6.2) may NOT be transported in FAU vehicles. To ship infectious biological material outside of our local area, a commercial carrier must be used. Please refer to Section 13 in the Biological Safety Manual for shipping guidelines.

5.2.6. Biological Material

- 5.2.6.1. Ensure that all IBC protocols are updated to either transfer protocols to a new PI or simply closed if no further work with materials will be done.
- 5.2.6.2. Decontaminate with the appropriate disinfectant all refrigerators, drawers, counters, shelves and lab equipment used for biological materials
- 5.2.6.3. Decontaminate all biological equipment (biosafety cabinets, incubators, refrigerators, freezers, centrifuges, etc.) with an appropriate disinfectant prior to moving (see Appendix B in the FAU Biological Safety Manual).
- 5.2.6.4. Rinse Biological Safety Cabinets (BSCs) with water after disinfectant is used to avoid corrosion
- 5.2.6.5. Contract an outside contractor to decontaminate the BSC if infectious agents have been used in the cabinet.
- 5.2.6.6. Wrap Biosafety cabinets with plastic before moving and place a sign on the BSC indicating that it has been decontaminated and requires recertification before use in the new location.

5.2.6.7. Do not leave biological materials in the lab.

5.2.7. Animals or Animal Tissue or Unrecognizable Human Tissue

- 5.2.7.1. Contact the BSO (bso@fau.edu) prior to disposal of unrecognizable biological materials.
- 5.2.7.2. If the animal or tissue is held in a liquid preservative, separate the animal/tissue from the liquid. Dispose of the liquid as chemical hazardous waste. Do not pour the preservative liquid down the drain.
- 5.2.7.3. Place animals or tissue in a biohazard waste bag for disposal in the Biological Waste container.

5.2.8.Recognizable Human Tissue

- 5.2.8.1. If the tissue is held in a liquid preservative, separate the tissue from the liquid. Dispose of the liquid as chemical hazardous waste. Do not pour the preservative down the drain.
- 5.2.8.2. Place identifiable human tissue into a biohazard bag and EH&S for pick up. For any questions concerns or assistance, please contact the Biosafety Officer (BSO@fau.edu).
- 5.2.9. Microorganisms, Cultures, and Recombinant DNA
 - 5.2.9.1. Inactivate, label and place all infectious and/or recombinant material in the appropriate biohazard bag and box.
 - 5.2.9.2. Inactivate liquid material by the addition of commercial bleach at a dilution of 1:10 and drain dispose after 24 hours. Please refer to the FAU EH&S Biological Waste Program.
 - 5.2.9.3. If samples need to be saved, appropriate action will need to be taken by the PI, including transferring IBC registration to a new PI and finding a secure location to store the materials.
- 5.2.10. Sharps

Place all used needles, syringes, vacutainers, scalpels, contaminated glass, etc. into the biohazard sharps containers, Tape container when full. Please refer to the <u>FAU EH&S Biological Waste Program</u>.

5.2.11. On Campus Transfers – Biological Materials

Contact the BSO (BSO@fau.edu) for specific instruction prior to transport. Departmental staff may transport biological material from one laboratory or building to another on the same campus if the following conditions are met:

- 5.2.11.1. Staff who will be doing the moving of the containers must be trained in the proper handling of biological material
- 5.2.11.2. A Laboratory-Specific SOP has been developed to accomplish this transfer
- 5.2.11.3. The laboratory has reviewed Appendix C of the Biological Safety Manual and incorporated the guidelines into their SOP
- 5.2.11.4. The SOP is reviewed and approved by the BSO
- 5.2.11.5. Proper personal protection equipment (PPE) is worn when preparing the material for transport, but not during transport
- 5.2.11.6. Carts used to move secondary containers must be sturdy enough to handle the weight

of the containers and terrain.

- 5.2.11.7. The recipient of transported biological materials is be prepared to receive the materials
- 5.2.11.8. Adequate spill control material must be available for use by the moving crew
- 5.2.11.9. Notify EH&S at the beginning and end of the move.
- 5.3.11.10. If biological materials are being transported between campuses, contact the BSO for guidance. (BSO@fau.edu)
- 5.2.12. Off-campus transfers—Biological Material
 - 5.2.12.1. Off campus transfers/shipments should only be conducted/supervised by EH&S personnel. Following these procedures will help to ensure that your package will arrive at its destination on time and intact. More importantly, it will ensure that everyone involved in the transport of the material will know what it is and how to safely deliver it. The following procedures apply to all biological materials, hazardous material/dangerous goods packages except radioactive materials. For assistance shipping radioactive materials call the Radiation Safety Officer (561- 297-3129).
 - Sender brings hazardous materials to EH&S along with the Safety Data Sheet (SDS).
 - EH&S will package, label, and complete the proper shipping papers for the material.
 - EH&S will arrange for the shipping by a Commercial Carrier.
 - EH&S will be reimbursed by sender for all shipping costs, including packaging, labels, and shipping.

5.2.13. Radioactive Materials

The Radiation Safety Officer (RSO) will perform a final clearance survey prior to laboratory closure. Permitted radiation users must perform the following prior to survey:

- 5.2.13.1. Return all remaining radioactive isotopes and waste to the RSO for disposal
- 5.2.13.2. Ensure that all personnel have returned their dosimetry badge to the RSO
- 5.2.13.3. Perform a final radiation survey of all laboratory areas, equipment and furniture to ensure that no contamination is present. Report these findings to the RSO in writing.
- 5.2.14. Contact EH&S for specific equipment decontamination procedures involving chemical, biological, or radiological materials.
- 5.2.14.1. Lasers

Notify the LSO (ehs@fau.edu) when any Class 3, Class 4 laser, or laser system is relocated, transferred, or removed from service.

5.2.15. Controlled Substances

Controlled substance use, storage, and disposal requirements are defined in the Controlled Substance Permit issued by the U.S. Drug Enforcement Agency (DEA) to the individual PI. A central record of Controlled Substance permits is not maintained at FAU and is the sole responsibility of the Controlled Substance Permit holder. If controlled substances are found and the licensee is unknown, contact EH&S at ehs@fau.edu.

5.3. Recordkeeping

Upon completion of the closeout inspection, EH&S will notify the Department Chair and Principal Investigator in writing of the results. EH&S will maintain documentation of the laboratory closeout for a minimum of three years.

6. RELATED DOCUMENTS:

Laboratory Safety Manual
Chemical Hygiene Plan
Biological Safety Manual
Radiation Safety Manual
Hazardous Material Manual
Biological Waste Program Manual
Animal Research Health and Safety Plan

7. DOCUMENT MANAGEMENT AND CONTROL:

SOP Owner/Contact	Wendy Ash Graves
SOP Preparer	Wendy Ash Graves
Approved by	Wendy Ash Graves
Date Approved	9/20/2022
Last Revision Date	New Document
Last Revision By	Wendy Ash Graves
Next Review Due	09/20/2027
Review Frequency	5 years
Version	01
Time Sensitive Items	

8. RECORD OF CHANGES:

Version	Date	Summary of Change	Reviewed By				
	09/20/2022	New Document	W. Ash Graves				

APPENDIX I

Laboratory Closeout/Transfer Checklist

Laboratory Closeout/Transfer Checklist										
Building:			Room #:							
Principal Investigator:			Department:							
Person Completing Form:			Date:							
Signature:										
Reason for Closeout: Leaving FAU										
Item		C	omp	Date Completed						
ADMINISTRATIVE										
Terminate, reassign or modify all IBC Projects.		Yes		No		N/A				
Terminate, reassign or modify all IRB Projects.		Yes		No		N/A				
Terminate, reassign or modify all IACUC Projects.		Yes		No		N/A				
Terminate, reassign or modify all registrations for use of Radioactivity with the Radiation Safety Officer		Yes		No		N/A				
BIOLOGICAL	SAFETY									
Properly dispose of all sharps waste		Yes		No		N/A				
Remove and discard all absorbent pads		Yes		No		N/A				
Disinfect the contents of aspiring flasks		Yes		No		N/A				
Disinfect all equipment used to store and handle										
infectious or potentially infectious material		Yes		No		N/A				
Decontaminate and clean BSC.		Yes		No		N/A				
Cover and seal with impervious material any										
contaminated part that cannot be disinfected.		Yes		No		N/A				
Removed or deface all biohazard warning sticker on										
decontaminated equipment		Yes		No		N/A				
Package and seal biological waste		Yes		No		N/A				
Contact EH&S for a Biological Waste Pickup		Yes		No		N/A				
RADIATION										
Contact the RSO to collect and reuse or recycle lead										
bricks, pigs, shielding, aprons and stock containers		Yes		Nο		N/A				

Item	Completed					Date Completed	
Dispose of all radioactive solutions, samples and waste properly.		Yes		No		N/A	
Clean all radioactive equipment and work areas.		Yes		No		N/A	
Contact EH&S for a Radioactive Waste Pickup		Yes		No		N/A	
Contact the RSO to schedule a survey		Yes		No		N/A	
Contact the RSO to cancel all radiation badges and to return dosimeters.		Yes		No		N/A	
Lasers	6						
Notify LSO of Laser (Class 3 or Class 4) transfer or removal.		Yes		No		N/A	
CHEMICA	ALS						
Contact EH&S for additional hazardous waste supplies (containers, labels etc.)		Yes		No		N/A	
Complete chemical inventory (SciShield ChemTracker) and physically segregate them by class and compatibility		Yes		No		N/A	
Label all chemical and chemical waste containers with the chemical name (Abbreviations, chemical formulas or structures are NOT acceptable)		Yes		No		N/A	
Dispose of peroxide- forming materials that are opened or are more than 6 months old.		Yes		No		N/A	
Alert EH&S of leaking or compromised containers		Yes		No		N/A	
Collect all hazardous waste		Yes		No		N/A	
Dispose of all sharps (needles, syringes, blades, glass Pasteur pipettes, chemically contaminated broken glass		Yes		No		N/A	
Clean and decontaminate all surfaces.		Yes		No		N/A	
Remove regulators and replace caps on all compressed gas cylinders		Yes		No		N/A	
Contact compress gas cylinder vendor to return all cylinders.		Yes		No		N/A	

Item Completed							Date Completed		
CONTROLLED SUBSTANCES									
Arrange for disposal/reverse distribution of any DEA substance or drugs		Yes		No		N/A			
Return unused and remaining DEA substances and drugs to the controlled substances administrator if you are not the DEA permit holder		Yes		No		N/A			
Contact the building manager to relocate narcotics cabinet.		Yes		No		N/A			
GENERAL									
Identify wanted equipment and move once emptied		Yes		No		N/A			
Identify working equipment for surplus		Yes		No		N/A			
Drain oil from vacuum pumps		Yes		No		N/A			
Cleanout darkrooms and photo processing equipment with service vendor		Yes		No		N/A			
Decontaminate chemical fume hoods with detergent.		Yes		No		N/A			
Bag, or box all non-hazardous trash		Yes		No		N/A			
Remove all glassware, paper, general lab materials, other materials		Yes		No		N/A			
Remove all door signs and placards		Yes		No		N/A			
CLOSEOUT									
Lock lab doors		Yes		No		N/A			
Contact the LSO for a final inspection.		Yes		No		N/A			

Send the completed checklist to EH&S at ehs@fau.edu