Laboratory Closeout Procedure

THE UNIVERSITY OF TENNESSEE KNOXVILLE
DEPARTMENT OF ENVIRONMENTAL HEALTH & SAFETY

1.0 Purpose, Applicability, and Scope

1.1 Purpose – To detail the procedure for properly decommissioning a lab that may result from
- 1.1.1 Change in ownership
- 1.1.2 Change in location
- 1.1.3 Loss of faculty member through retirement, loss of funding or death
- 1.1.4 Lab renovation
- 1.1.5 Lab expansion
- 1.1.6 Other

1.2 Applicability – This shall apply to all students, staff and faculty on the Knoxville campus of the University of Tennessee.

1.3 Scope - This shall apply to all research and teaching laboratories and academic shops on the Knoxville campus of the University of Tennessee.

2.0 Abbreviations, Acronyms, and Definitions

2.1 Abbreviations/Acronyms
- 2.1.1 BSL – Biological Safety Level
- 2.1.2 EHS – Environmental Health & Safety Department
- 2.1.3 IACUC – Institutional Animal Care and Use Committee
- 2.1.4 DEA – Drug Enforcement Administration
- 2.1.5 DOT – Department of Transportation (regulates transport of hazardous materials on our roadways)
- 2.1.6 PI – Principal Investigator
- 2.1.7 STAR Team – Special Team to Assist Research (a division of Facilities Services)

2.2 Definitions
- 2.2.1 Lab Closing – Lab is closing and/or everything being removed for renovation due to retirement, loss of funding, death, etc.
- 2.2.2 Lab Securing – Lab space and contents are changing ownership due to retirement, loss of funding, death, etc.
- 2.2.3 Lab Moving – Lab is relocating to another room, building, UT campus or other University
- 2.2.4 Lab Expansion – Lab is acquiring new space and keeping the original space
- 2.2.5 Facility Supervisor – The Director or Head of a Center, Department or Joint Institute

2.2.6 Hazardous Waste - Waste that is dangerous or potentially harmful to our health or the environment. Hazardous wastes can be liquids, solids, gases, or sludges. They can be discarded commercial products, like cleaning fluids or pesticides, or the by-products of manufacturing processes. Does not include biohazardous wastes or radioactive wastes.

2.2.7 Universal Waste - a category of **waste** materials designated as "hazardous **waste**", but containing materials that are very common. It is defined in 40 C.F.R. 273.9, by the United States Environmental Protection Agency but states may also have corollary regulations regarding these materials. Includes batteries, pesticides, mercury-containing equipment and bulbs (lamps).

3.0 Roles and Responsibilities

3.1 Department Head/Facility Supervisor

3.1.1 Shall assign a Responsible Person for each lab that is to be closed out, at least one month prior to lab closing.

3.1.2 Shall ensure all applicable sections (appendices A, B, and C) are completed and sign each form upon completion

3.1.3 Shall keep the completed and signed original Lab Closeout Checklist and/or Lab Move Checklist on file in the department personnel files for a minimum of 10 years and shall send an electronic copy of the forms to Facilities Manager (if applicable), the Associate Dean's office, EHS and the Office of Research

3.2 Responsible Person

3.2.1 Shall be a person with capable skill and knowledge to carry out the required tasks as determined by the Department Head/Facility Supervisor, in most cases the occupant or PI

3.2.2 Shall ensure that all required elements of the Closeout Procedure are fulfilled and sign the Lab Closeout Checklist upon completion

3.2.3 Shall ensure that all required signatures are obtained

3.3 EHS

3.3.1 Shall coordinate with a licensed contractor to remove and properly dispose of Hazardous Waste in accordance with state and federal regulations – EHS needs a four week lead time

3.3.2 Shall coordinate with a licensed contractor to properly pack and move and hazardous chemicals in accordance with state and federal regulations in the event of a lab move – EHS needs a four week lead time

3.3.3 Shall provide Lab Door Placards (upon completion of Lab Door Placard form by lab personnel)

3.3.4 Shall keep an electronic copy of the completed and signed Lab Closeout Form for a minimum of 10 years

3.4 BioSafety Office

3.4.1 Shall coordinate with the PI or designate to ensure that biological hazards are either destroyed, transferred (either internal or external to the

University), or safely stored in accordance with federal, state, local, and/or institutional standards.

3.4.2 Shall perform an exit evaluation of the laboratory to verify that all affected working surfaces and equipment has been cleaned and surface disinfected as prescribed by the Biosafety Office.

3.4.3 Shall coordinate decontamination of equipment prior to moving if indicated by risk assessment.

3.4.4 Shall provide laboratory signage, labels, and other postings as appropriate.

3.4.5 Shall ensure that Institutional Biosafety Committee approvals are updated or refiled as applicable

3.5 Rad Safety Office

3.5.1 Shall remove or move any radioactive material

3.5.2 Survey potentially contaminated equipment

3.5.3 Shall perform exit survey

3.6 Facilities Services

3.6.1 Shall manage utilities as needed

3.6.2 Shall move non-sensitive equipment and non-fixed furniture

3.7 IACUC

3.7.1 An IACUC inspection may be required when a lab which uses vertebrate animals is expanding or moving to a new space

3.8 Outside Vendors

3.8.1 Shall pack, ship and dispose of hazardous waste in compliance with state and federal regulations.

3.8.2 Shall pack, ship and unpack of hazardous materials to a new location in the event of a lab move, in compliance with state and federal regulations

3.8.3 Shall remove and/or transport compressed gas cylinders in compliance with state and federal regulations

3.8.4 Shall pack, move and set up sensitive equipment in the event of a lab move

3.9 Office of Research

3.9.1 Review the lab closeout/move for any impact an existing grant or contract

3.9.2 Shall keep an electronic copy of the completed and signed Lab Closeout Form for a minimum of 10 years

4.0 Procedure

4.1 Notify EHS, BioSafety (if applicable), Rad Safety (if applicable) and Facilities Services at least four weeks prior to the lab closeout or move.

4.2 Wear personal protective equipment (PPE) appropriate for the materials being handled (e.g. safety glasses, lab coat, gloves, closed-toed shoes, etc.).

4.3 Complete the Laboratory Closeout Checklist, secure all required signatures, post a copy on the inside of the main lab door and file the signed original in the corresponding academic department.

4.4 If the lab is changing locations, complete the Laboratory Move Checklist, secure all required signatures and file in the corresponding academic department.

5.0 Recordkeeping

5.1 A copy of the Laboratory Closeout Checklist shall be posted on the inside of the laboratory door to be removed by new occupant and the signed original shall be filed in the corresponding academic department files for 10 years.

5.2 The Laboratory Move In and Move Out Checklists shall be filed in the corresponding academic department files for 10 years.

5.3 Copies of all documents should be kept by the Facilities Manager (if applicable), the Associate Dean's office, EHS and the Office of Research for a minimum of 10 years.

6.0 Training and Information Requirements

6.1 None

7.0 Attachments

7.1 Appendix A – Laboratory Closeout Checklist

7.2 Appendix B – Laboratory Move Out Checklist

7.3 Appendix C – Laboratory Move In Checklist

7.4 Appendix D - Lab Closeout Procedures Map

8.0 Associated Standards

8.1 None

Appendix A
Laboratory Closeout Checklist

THE UNIVERSITY OF TENNESSEE KNOXVILLE
DEPARTMENT OF ENVIRONMENTAL HEALTH & SAFETY

Department: _____

Lab Location: Bldg. _____ **Room(s)** _____

Responsible Person: _____ **Phone #** _____

Department Head/
Facility Supervisor: _____**Phone #** _____

Estimated Date for Moving Out of Lab: _____

Reason for Closeout: [ ] Leaving UT [ ] Moving within UT (see also Lab Move Checklist)
[ ] Retirement [ ] Other or [ ] Lab is expanding

1. ☣ **What biosafety Level applies? [ ] none (skip to Q.2) [ ] BSL-1 [ ] BSL-2**

Responsible Person Responsibilities:	✔	**N/A**	**Initials**
Contact the Biosafety Office to evaluate biohazards to be moved or discarded	○	○	_____
Unwanted biological materials should be transferred to another investigator (*requires Biosafety approval*) or destroyed by an approved method (e.g. autoclaving) prior to disposal	○	○	_____
All biosafety cabinets (BSCs), clean benches, centrifuges, incubators, or other equipment used to process and store biological hazards should be surface cleaned and disinfected. Full gaseous decontamination of internal components of such equipment is generally not required, but may be necessary depending on risk assessment	○	○	_____
Notify the BioSafety Office of any equipment or areas that cannot be fully decontaminated	○	○	_____

2. ☢ **Were radioactive materials used in the lab? [ ] Yes [ ] No (skip to Q.3)**

Responsible Person Responsibilities:	✔	**N/A**	**Initials**

Prepare radioactive waste for Radiation Safety to pick up. All waste containers should be labeled with radionuclide and activity.	○	○	_____
Contact Rad Safety for an exit decommissioning survey of the lab space	○	○	_____
Notify the Rad Safety Office if there are items/equipment that may be contaminated with radioactive materials	○	○	_____
Radiation Safety Office Responsibilities:			
Remove/move any radioactive materials	○	○	_____
Survey all equipment that is labeled, or could possibly be contaminated	○	○	_____
Perform an exit decommissioning survey of the lab space, and remove radiation postings from doors	○	○	_____

3. Were chemicals used in the lab? [ ] Yes [ ] No

Responsible Person Responsibilities:	**✔**	**N/A**	**Initials**
Label all chemical containers with the proper chemical name. Abbreviations, chemical formulas or structures are not acceptable.	○	○	_____
Close all containers securely	○	○	_____
Empty all beakers, flasks, evaporating dishes, oil/water bathes into the proper container and dispose of appropriately (all hazardous materials must be disposed of as hazardous waste).	○	○	_____
Dispose of empty containers in the trash after removing all markings and writing “EMPTY” on the container. Triple rinse empty acid containers before disposal. Empty containers which held acutely toxic chemicals should be disposed of through EHS. Do not dispose of **any** chemicals in the trash or down the drain, regardless of hazard rating	○	○	_____
Check containers for expiration dates and signs of corrosion crystallization. Peroxide-forming materials should be disposed of if the container has been opened and is more than six months old, or if it has not been opened and is more than one year old. **Always dispose of by the expiration date listed by the supplier**.	○	○	_____
Dispose of old chemicals and lecture bottles to EHS at one of			

the waste rooms located at either Walters (open from 1:00-2:00 every Wednesday) or the Science and Engineering Research Facility (SERF - open from 2:00-3:00 every Wednesday). If you have a large amount of chemicals to dispose of, contact EHS to coordinate a lab chemical cleanout at least 4 weeks before needed.	○	○	_____
Contact DEA to dispose of any controlled substances	○	○	_____
Clean and decontaminate all chemical cabinets, refrigerators, freezers and any other chemical storage areas, benchtops and equipment from any spilled chemicals. Remove all bench paper.	○	○	_____
Make sure that shared equipment and locations are included in the cleanout and are decontaminated from any radioactive, biohazardous or chemical contamination.	○	○	_____
Remove regulators, replace cylinder caps and return all compressed gas cylinders to the vendor (AirGas).	○	○	_____
Contact EHS for disposal of any compressed gas cylinders which are non-returnable	○	○	_____
Properly dispose of all sharps waste (Bio, Rad or Chemical)	○	○	_____
Notify EHS of any materials or procedures that could leave hazardous chemical residues (e.g., perchloric acid in a chemical fume hood) or areas that cannot be fully decontaminated (e.g., materials potentially containing asbestos; fume hoods; refrigerators used in the storage of highly toxic chemicals, etc.).	○	○	_____
EHS Responsibilities:	**✔**	**N/A**	**Initials**
Perform Exit Survey	○	○	_____
Dispose of all chemicals, lecture bottles, and other hazardous materials left remaining in lab	○	○	_____
Address any chemical residue hazards	○	○	_____

4. **All Labs:**

Responsible Person Responsibilities:	**✔**	**N/A**	**Initials**
Notify Facilities Services to bleed any stored electrical energy			

from equipment (e.g., capacitors) bound for trash or surplus to the warehouse.	○	○	_____
Ensure all keys unique to closing lab have been turned in by all members of the research group	○	○	_____
STAR Team:	**✔**	**N/A**	**Initials**
Equipment disconnected from fixed facilities and utility connections in room made safe	○	○	_____
Bleed stored electrical energy from equipment	○	○	_____
Department Head/Facility Supervisor:	**✔**	**N/A**	**Initials**
Ensure the Responsible Person has completed the lab closeout to their satisfaction	○	○	_____
Approve release of final paycheck pending required signatures	○	○	_____

5. **Required Signatures:**

Responsible Person: _____Date_____

Department Head/
Facility Supervisor: _____Date_____

EHS Representative: _____Date_____

Rad Safety Rep. (Rad Labs only):_____Date_____

BioSafety Rep. (BSL-2 Labs only): _____Date_____

STAR Team Representative: _____Date_____

This record shall be kept in the PI's (or responsible person's) permanent personnel file in their respective departmental office for a minimum of 10 years. Electronic copies shall be kept by the Office of Research and Environmental Health & Safety for a minimum of 10 years. A copy of the signature page shall be attached to the back of the laboratory door to be removed by the new occupant.

Appendix B

Laboratory Move Out Checklist

THE UNIVERSITY OF TENNESSEE KNOXVILLE
DEPARTMENT OF ENVIRONMENTAL HEALTH & SAFETY

Department: _____

Current Lab Location: Bldg. _____ Room(s) _____

Lab or Dept. Contact: _____ Phone # _____

Principle Investigator: _____ Phone # _____

Scheduled Date for Moving out of Lab: _____

This checklist is provided to direct you in the requirements for a safe and efficient transfer of your hazardous chemicals, radioactive and biological materials, gas cylinders, and lab equipment to your new location.

A Laboratory Closeout Checklist must be completed along with this checklist. Please indicate whether the current lab is closing or expanding.

All Labs:

Responsible Person Responsibilities:	✔	**N/A**	**Initials**
Ensure that material to be moved or discarded is not stored in hallways or otherwise blocking fire exits or other emergency equipment such as safety showers.	○	○	_____
Discard or have repaired damaged electrical equipment (e.g. with frayed wiring) prior to moving.	○	○	_____
Contact surplus and fill out the surplus equipment decontamination form on any unwanted equipment from the lab that will not be included in the move. http://warehousing.utk.edu/	○	○	_____
Leave old batteries and fluorescent lamps in a safe location in the lab for disposal as Universal Waste by Facilities Services.	○	○	_____
Return rented compressed gas cylinders and lecture bottles that are no			

longer needed to the vendor (Airgas). Be sure the caps are on the cylinders. *Do not* attempt to move any compressed gas cylinders or lecture bottles in personal or UT owned vehicles. Contact EHS for assistance in moving lecture bottles and specialty gases. ○ ○ _____

Notify EHS if you have any of the following items to move (not being moved by a contractor or the manufacturer) as these may need special attention: ○ ○ _____

Large Batteries, Power Supplies	Acid
Autoclaves, Ovens, Furnaces, Gloves, Incubators, Fume Hoods, Lab Bench Tops	Asbestos
Internal Cylinders, Ampoules, Canisters	Compressed Gases
Manometers, Thermometers, Barometers, Silent Switches	Mercury
High Voltage Systems, Power Supplies, Microscope Immersion Oils, Capacitors, Transformers, Hydraulic Fluid	PCBs
Degreasing Equipment	Solvents

Facilities Services Responsibilities:	✔	**N/A**	**Initials**
Utilities	○	○	_____
Move equipment/furniture	○	○	_____

Chemical Packing and Transport:

Responsible Person Responsibilities:	✔	**N/A**	**Initials**
Sort out unwanted chemicals prior to the move. Unopened and unexpired chemicals may be added to the Chemical Exchange Program. Contact EHS at 974-5084 for more information. Do not dispose of **any** chemicals in the trash or down the drain, regardless of hazard rating.	○	○	_____
Check containers and lids for damage and cracks. Replace any faulty caps or containers. Damaged containers cannot be transported. Do not move unknowns or leaky containers. Unknowns or leaky containers should be disposed of as hazardous waste (all containers must be spill-proof so please place any leaky containers in a secondary container).	○	○	_____
Thoroughly check all storage areas to ensure no chemicals are left behind. Abandoned and unknown chemical containers can be difficult, expensive and dangerous to dispose of properly.	○	○	_____

Check containers for expiration dates and signs of corrosion crystallization. Peroxide-forming materials should be disposed of and not moved to the new laboratory if the container has been opened and is more than six months old, or if it has not been opened and is more than one year old. **Always dispose of by the expiration date listed by the supplier**.	○	○	_____
Chemicals must be removed from freezers, refrigerators, cabinets, and other equipment prior to moving. Temperature sensitive items may be transported in coolers, or stored in other areas until they can be moved to the new location. Ensure refrigeration is available at new location before moving temperature sensitive chemicals/items.	○	○	_____
If temperature-sensitive chemicals are moved, a lab representative should be present during packing and unpacking to ensure these items remain at the correct temperature.	○	○	_____
Include mercury thermometers and other mercury-containing devices or equipment with hazardous materials to be shipped rather than moving these yourself.	○	○	_____
Contact DEA if applicable, before moving any controlled substances.	○	○	_____
Following the move, place unpacked chemicals in their designated locations (cabinets, etc.) within the laboratory.	○	○	_____
Hazardous Waste Contractor Responsibilities:	✔	**N/A**	**Initials**
Provide all of the materials required to pack the chemicals in accordance with DOT regulations.	○	○	_____
Package, transport and unpack the chemicals, place chemicals on lab benches. (Off-site transportation of hazardous chemicals must only be done by DOT licensed hazardous material carriers.)	○	○	_____

Biological Material Moving Safety:

Principle Investigator Responsibilities:	✔	**N/A**	**Initials**
Contact Biosafety Office to coordinate biological hazard packaging and movement	○	○	_____
Contact Biosafety Office if equipment is to be moved so that decontamination can be arranged (as deemed appropriate by risk assessment) and records can be updated.	○	○	_____
Biosafety Office Responsibilities:	✔	**N/A**	**Initials**

Ensure that biological hazards are properly contained for movement (in accordance with DOT regulations)	○	○	_____
Ensure that equipment has been cleaned and disinfected. Where equipment cannot be satisfactorily disinfected, the Biosafety Office will arrange for gaseous decontamination of equipment	○	○	_____

Radioactive Material Moving Safety:

Principle Investigator Responsibilities:	**✔**	**N/A**	**Initials**
Contact Radiation Safety to coordinate the events involved with moving materials and equipment that have been used with radioactive materials.	○	○	_____
Contact Radiation Safety if any X-ray machine or device is to be moved in order to submit the necessary forms indicating the move and the new room location to the State of Tennessee within 10 days of the relocation (the University could potentially face monetary fines of $30k).	○	○	_____
Radiation Safety Office Responsibilities:	**✔**	**N/A**	**Initials**
Assist with the packing and moving of any contaminated equipment that can't be cleaned.	○	○	_____

Required Signatures:

Responsible Person: _____Date_____

Department Head/
Facility Supervisor: _____Date_____

EHS Representative: _____Date_____

Rad Safety Rep. (Rad Labs only): _____Date_____

BioSafety Rep. (BSL-2 Labs only): _____Date_____

STAR Team Representative: _____Date_____

Appendix C

Laboratory Move In Checklist

THE UNIVERSITY OF TENNESSEE KNOXVILLE
DEPARTMENT OF ENVIRONMENTAL HEALTH & SAFETY

Department: _____

New Lab Location: Bldg. _____ **Room(s)** _____

Lab or Dept. Contact: _____ **Phone #** _____

Principle Investigator: _____ **Phone #** _____

Scheduled Date for Moving into Lab: _____

Responsible Person Responsibilities:	✔	**N/A**	**Initials**
Chemical Labs:			
Store your chemicals using a good compatibility plan.	○	○	_____
Only order chemicals you need.	○	○	_____
Keep a chemical inventory of what you have in stock and update inventory once move is completed (change building and room number, remove chemicals that have been disposed of, add new chemicals ordered).	○	○	_____
Contact the Environmental Health & Safety Office to test fume hood(s), evaluate safety eyewash/shower locations and fire safety requirements, to obtain relevant safety training and update door sign emergency contact information.	○	○	_____
Properly secure all compressed gas cylinders.	○	○	_____
Develop/update the Chemical Hygiene Plan for the new location http://ehs.utk.edu/safety%20manual/Guides/LabSafetyManual2015_09_08.pdf. _____		○	○
Obtain safety training through EHS for everyone working in the new laboratory: http://ehs.utk.edu/training/training.htm.	○	○	_____

Provide lab specific training (by the PI or lab manager) that is current and documented for everyone working in the new laboratory.	○	○	_____
Establish a chemical spill kit for the lab.	○	○	_____
Fill out new Door Placard forms and turn in to EHS: http://ehs.utk.edu/LabDoorPlacards.html. (EHS will install new door placards)	○	○	_____
Biological Hazard Labs:	**✔**	**N/A**	**Initials**
All BSCs used for manipulating infectious agents, primary human/animal tissues, plant pathogens under USDA restrictions, and/or biological toxins **must** be recertified per NSF 49 standard prior to reuse. The Biosafety Office strongly recommends, but does not necessarily require, recertification of other HEPA-filtered equipment (e.g. BSCs used only for "sterile field" applications, laminar clean benches, etc.) to ensure that the motor function, filter housing, and filters have not been damaged during the move. The new location of equipment and recertification records should be provided to the Biosafety Office/IBC so that existing records can be updated accordingly.	○	○	_____
Register recombinant DNA, infectious agents, human-derived materials, and/or acute biological toxins with the Institutional Biosafety Committee.	○	○	_____
Placard lab doors and label equipment used to process and/or store biohazards with a biohazard symbol.	○	○	_____
For biohazards: securely store (e.g. lockable freezer or lab door), thoroughly label, and contain to prevent drips, leaks, spills, etc.	○	○	_____
All lab personnel must receive and document site-specific and programmatic biosafety training as required by the Biosafety Office.	○	○	_____
Establish a Biosafety Manual for labs designated Biosafety Level-2.	○	○	_____
Radioactive Material Labs:	**✔**	**N/A**	**Initials**
Notify Radiation Safety of the new room location for any laser equipment.	○	○	_____
Contact Radiation Safety to walk through new lab area to establish storage areas for radioactive materials, security, rad fume hood testing, postings and labeling.	○	○	_____
EHS Responsibilities:	**✔**	**N/A**	**Initials**
Test face velocity of fume hood(s)	○	○	_____

Inspect eyewashes	○	○	_____
Inspect fire extinguishers	○	○	_____
Print and install new door placards	○	○	_____
Provide General Lab Safety, HazCom and Haz Waste Training	○	○	_____
Radiation Safety Office Responsibilities:	**✔**	**N/A**	**Initials**
Provide Radiation Safety training	○	○	_____
Issue dosimeters where required	○	○	_____
BioSafety Office Responsibilities:	**✔**	**N/A**	**Initials**
Provide BioSafety training	○	○	_____
Provide biosafety door placards/signage and biohazard labels	○	○	_____
Provide biosafety manual template	○	○	_____
Facilities Services/STAR Team Responsibilities:	**✔**	**N/A**	**Initials**
Test safety showers	○	○	_____

Required Signatures:

Responsible Person: _____Date_____

Department Head/
Facility Supervisor: _____Date_____

EHS Representative: _____Date_____

Rad Safety Rep. (Rad Labs only): _____Date_____

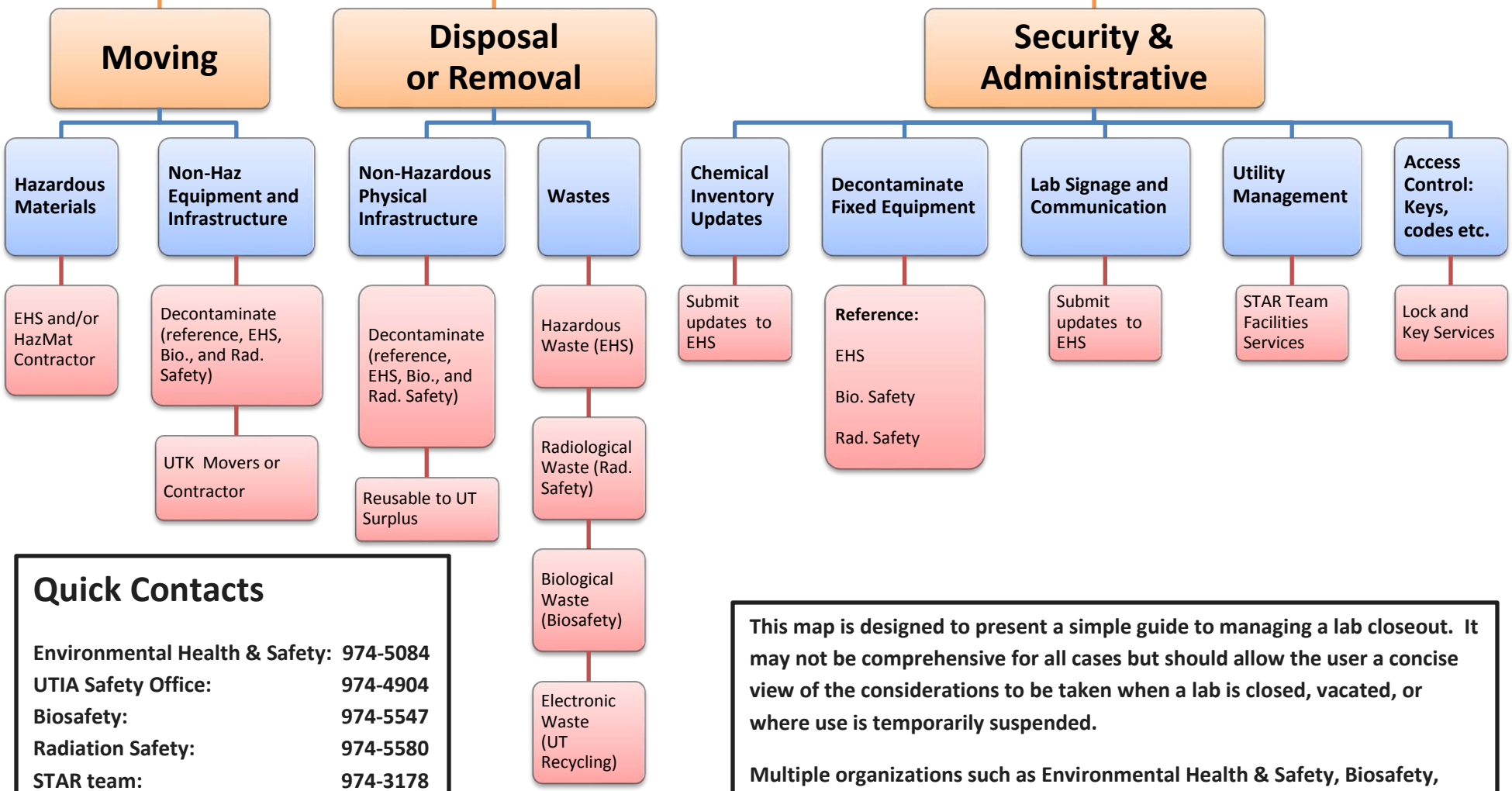
BioSafety Rep. (BSL-2 Labs only): _____Date_____

STAR Team Representative: _____Date_____

THE UNIVERSITY OF TENNESSEE KNOXVILLE

DEPARTMENT OF ENVIRONMENTAL HEALTH & SAFETY

Appendix D: Lab Closeout Procedures Map



Quick Contacts

Environmental Health & Safety:	**974-5084**
UTIA Safety Office:	**974-4904**
Biosafety:	**974-5547**
Radiation Safety:	**974-5580**
STAR team:	**974-3178**
UT Warehousing (Surplus) :	**974-7925**
UT Recycling:	**974-3480**

This map is designed to present a simple guide to managing a lab closeout. It may not be comprehensive for all cases but should allow the user a concise view of the considerations to be taken when a lab is closed, vacated, or where use is temporarily suspended.

Multiple organizations such as Environmental Health & Safety, Biosafety, Radiation Safety, the UTIA Safety Office, and the STAR team with Facilities Services can assist to ensure a safe and effective transition.