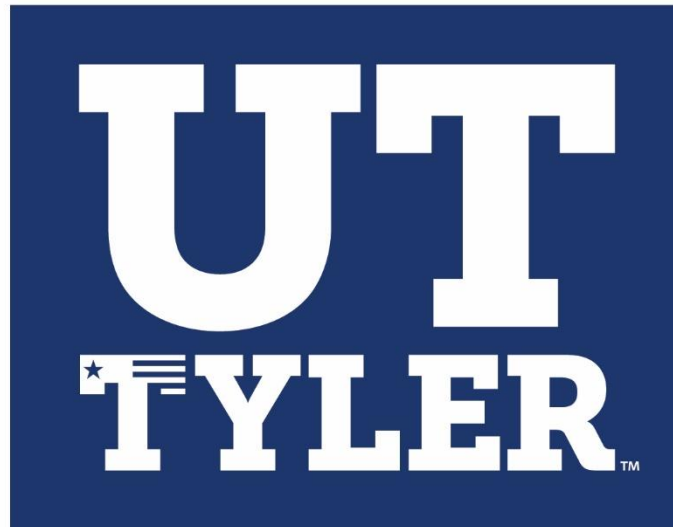


THE UNIVERSITY OF TEXAS AT TYLER



# Laboratory Decommissioning Program

March 2021

## **Introduction**

Laboratories throughout the University of Texas at Tyler provide a myriad of real-world learning activities for students, faculty and staff. The lab spaces however, because of their nature, can involve hazardous substances or materials. The safe removal of such material after a lab has served its use or undergoing retrofit is imperative for a safe and healthy work and educational environment. The Laboratory Decommissioning Program provides the tools necessary to maintain a safe environment as laboratories undergo changes in use, retrofit, or destruction, regardless of its occupancy or use.

## **Purpose**

The Laboratory Decommissioning Program defines the applicability of the program involve all UT Tyler laboratory spaces where hazardous substances had/are used. Applicable spaces are then subject to the processes of this program. Laboratory decommissioning requires risk assessment, sampling, and mitigation of hazards associated with laboratories so closely follows the guidance of ANSI Z9.11 2016. The successful completion of laboratory decommissioning provides a safe and healthy space from which to provide new services.

## **Definitions**

1. ANSI – American National Standards Institute
2. Biological agents – any substance of biological origin which also retains the properties found at the biological origin (bacteria, steroids, toxins, etc...)
3. Decommissioning – the processes involved in cleaning and decontaminating a laboratory space
4. EH&S – Environmental Health and Safety
5. Hazard – anything that poses a potential threat to life, property or environment
6. IPCC – identified potential contaminants of concern
7. Laboratory – a space from which applied scientific learning or teaching takes place
8. LS – laboratory supervisor
9. Mitigate – decrease risks of hazards for an acceptable period of time
10. NIOSH – National Institute for Occupational Safety and Health
11. PI – principal investigator
12. Remediation – safe removal of hazardous material as outlines in regulation
13. Renovation – the redesign of a space by 20% or more
14. Risk – a situation that exposes people to hazards
15. UT Tyler – University of Texas at Tyler

## **Application of the decommissioning process**

1. Laboratory decommissioning begins when the following decisions are made:
  - a) PI or LS vacate or change rooms
  - b) Principle investigators retire from research
  - c) The laboratory is retrofitted for a different occupancy or purpose.
  - d) Remediation/remodel or renovation of 20% or more of laboratory space

2. Laboratory supervisors or principle investigators are responsible for ensuring the laboratory decommissioning process is started and completed.
3. In the event of a sudden leave of absence of the PI or LS, the department head becomes responsible for the decommissioning
4. The person or persons responsible for the laboratory must contact EH&S once the decision is made to decommission and before any work begins toward the decommissioning processes
5. The decommissioning processes must be done during normal business hours in order to handle any emergency situations.
6. Funding
  - a) The department to which the laboratory belongs is responsible for acquiring funding for the decommissioning.
    - 1) EH&S may fund the sampling and validation of hazardous materials unless otherwise stated after completion of the initial Risk Analysis (Section 8.)
  - b) Remediation of hazardous materials will be the responsibility of EH&S.
7. Scope of Work for Decommissioning
  - a) Once the decision to decommission a laboratory has been made, the PI or LS of the laboratory will fill out the Faculty Decommissioning Checklist and send to EH&S at [safety@uttyler.edu](mailto:safety@uttyler.edu)
  - b) The checklist can be found in Appendix 1 of this document or online here: <https://www.uttyler.edu/safety/files/faculty-decommission-checklist.pdf>
  - c) The following information will be made available to EH&S:
    - 1) Current data on laboratory space usage
      - i. Equipment
      - ii. Chemicals
      - iii. Agents/species
      - iv. Other potentially hazardous materials (i.e. radioactive sources, biological toxins)
    - 2) All protocols and/or kits known to have been used in the laboratory
  - d) After receipt of the Faculty Decommissioning Checklist, EH&S will perform an initial site survey of the decommissioning site with the LS/PI and fill out the Laboratory Decommissioning Form with the following goals:
    - 1) Findings of identified potential contaminants of concern (IPCC) will start a broad scope of risk analysis, sampling, validation and remediation of IPCC
    - 2) EH&S will and notify LS/PI of the estimated time to validation and advise on remediation and mitigation of the risk
    - 3) Remediation of IPCC
      - i. Decommissioning procedures through remediation must be completed prior to remodel or renovation
8. Risk analysis
  - a) The purpose of the risk assessment is to identify possible hazards and implement controls to minimize harm to life, property or the environment until sampling and remediation is complete
  - b) The risk assessment composition includes five integral pieces

- 1) Identify risk
  - i. The initial risk assessment is to identify all risks associated with IPCC of the decommissioning space
  - ii. Identification of risk shall include references to literature, historical analysis of the laboratory usage, expertise and/or sampling the decommissioning area
- 2) Assess the hazard
  - i. Once identified, steps shall be taken to ascertain the physical and chemical properties of the risk
  - ii. Steps will be taken to determine the breadth of the risk inside the space
- 3) Develop controls and make decisions
  - i. Clearly outline the best possible approach to contain the hazard using the initial assessment (if applicable or possible) until after remediation
- 4) Implement the controls
  - i. Lay controls into place
  - ii. Once controls are in place the risk assessment process starts over until the risk is mitigated to a level that causes the least possible hazard to life, property or the environment
- 5) Supervise
  - i. The goal of supervision is to maintain the controls developed for each risk
  - ii. EH&S will assign a supervisory protocol for each IPCC control and include at a minimum:
    - a. How controls should be supervised
    - b. Duration of the supervision
- c) Risk Analysis may be done by EH&S or through a third-party
  - 1) Initial Risk Analysis is broad in scope and limited in use of equipment scope unless otherwise stated
  - 2) Subsequent Risk Analysis may be necessary after thorough initial Risk Analysis

## 9. Sampling

- a) If IPCC is found in the decommissioning area, EH&S must determine the scope and magnitude of the risk through sampling the area
- b) EH&S will determine the necessity of using in-house or contracted sampling of IPCC
  - 1) Sampling methods shall be compared to predetermined acceptance criteria such as exposure limits, and limits immediately dangerous to life or health (IDLH)
    - i. Predetermined acceptance criteria shall conform to at least the standard of 29 CFR 1910.120.
  - 2) Sampling results will be verified and documented
    - i. Verification shall come from either third-party companies and/or EH&S.

- 3) Documentation of the sampling will be noted in the Laboratory Decommissioning Form by EH&S.
- c) Once sampling is completed, EH&S will make a recommendation to the department on how to remediate and mitigate the hazards.
  - 1) EH&S will be involved in all clean-up operations

#### 10. Review

- a) The Director of Environmental Health and Safety, or designee, will be responsible for reviewing all sample data and completed Risk Analysis
- b) The reviewer will verify compliance with the scope of work and applicable regulations for the sampling work being performed

#### 11. Remediation

- a) The goal of remediation is to lower the risk level to life, property or the environment to acceptable levels as defined in the predetermined acceptance levels (Section 9.)
  - 1) Levels will be below those defined in 29 CFR 1910.120
  - 2) This process should: isolate hazard(s), physically remove hazard(s), inactive hazard(s) or a combination of methods
- b) Individual departments of which the laboratory to be decommissioned belongs are responsible for remediation of hazards found during the risk assessment and sampling
  - 1) Departments must first be advised by EH&S
  - 2) EH&S can make the determination as to whether the remediation can be handled in-house (by EH&S) or contracted
  - 3) If contracted out, a plan of remediation is required for review by EH&S before the remediation process begins
- c) EH&S can verify remediation and mitigation through visual check or through sampling data
  - 1) This will be documented on the EH&S Laboratory Decommissioning Form
- d) EH&S will make the determination whether the lab is safe for renovation or the next user of the space
- e) Once remediation and mitigation are complete the results are reported on the EH&S Laboratory Decommissioning Form

#### **Waste management during the decommissioning process**

1. Waste will be handled according to UT Tyler's Hazardous Waste Program.
  - a) Unknown chemicals and biological agents
    - 1) The department will be responsible for any costs incurred from analytical and consulting services procured in the identification of any unknown chemical substances.

#### **Training**

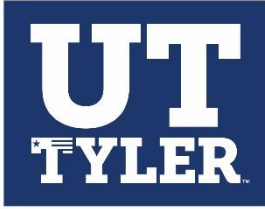
1. In the event of a retrofit or renovation, the contractor is responsible for training and hazard communication to its employees.

- a) Hazard Communication requirements will be discussed with the contractor during preconstruction meetings
2. The contractor is responsible for identifying and provided other training as required by EH&S depending on the job and laboratory
  - a) Blood borne pathogens, radiation safety, etc... are possible
3. No contract work will begin without documentation of training
4. Certification of Decommissioned Laboratories
  - a) Decommissioned laboratories must be certified by EH&S
  - b) Department heads will call EH&S and schedule an inspection
  - c) EH&S will inspect the laboratory and decide whether the laboratory meets decommissioning criteria
  - d) Tamper evident tape will be placed on the doors once certified
  - e) A placard will be placed on the door of the lab
    - 1) The placard can be removed once personnel again utilize the space

### **Program Oversight**

1. This program shall be periodically reviewed by EH&S
2. Comments, questions, or suggestions about this program should be emailed to [safety@uttyler.edu](mailto:safety@uttyler.edu).
3. Revisions
  - a. September 18<sup>th</sup>, 2020: Wording and organization revision.

# **Appendix 1**



## Faculty Decommissioning Checklist

### **Upon starting laboratory decommissioning:**

- Notify EH&S of lab decontamination
- Set up meeting with EH&S to determine current usage and date for finishing general cleanup
- General cleanup done by vacating lab personnel

### **Dispose of hazardous waste. Notify EH&S if you were using any of the following material (or similar):**

- Heavy metals (including heavy metal azides such as copper azide)
- Radiation sources or equipment
- Mercury or compounds containing mercury (2-mercaptoethanol/ $\beta$ -mercaptoethanol)
- Perchloric acid
- Controlled substances
- Ethidium bromide
- Hydrofluoric acid
- Peroxide formers
- Phenol
- Benzene
- Toxic gasses
- Polychlorinated biphenyls
- Dioxins
- Pesticides
- Steroids
- Antineoplastic agents
- Vinyl chloride
- Any other RCRA controlled substances



**Dispose of biological/medical waste. Notify EH&S if you were using any of the following:**

- Select agents
- Agents with genetic alterations that make them less/not infectious (i.e. E. coli)
- rDNA research
- Sharps
- Medical/biological waste

**Dispose of radiological waste. Notify EH&S if you were using any of the following:**

- Radioisotopes (sealed or not)
- Radiation containing equipment (i.e. x-ray machines, scintillation counters, etc...)

Equipment removal:

- Decontamination and removal of experimental or research equipment. Check with EH&S if you have questions about appropriate cleaning materials:
- Send EH&S a report that you have finished cleanup along with chemicals listed above

\_\_\_\_\_  
Name if person responsible for laboratory decommissioning

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Building and room number of laboratory to be decommissioned