RESEARCH SAFETY AFFAIRS
RS003 – Laboratory Safety Inspections

No./Title: RS003 – LABORATORY SAFETY INSPECTIONS	Resp. Office: RESEARCH SAFETY AFFAIRS	Effective Date: 09/01/2019
Category: Research Safety Affairs	**Last Review:** NEW	**Next Review:** 9/01/2022
Contact: Timothy Barton, Director of Research Safety Affairs	☎901.448.6114	✉ tbarton4@uthsc.edu
Related Policies: RS001-UTHSC Chemical Hygiene Plan, RS002-UTHSC Exposure Control Plan, RS105-New Laboratories, RS202-Controlled Substances in Research, RS102-Incident Reporting		

PURPOSE

To provide a safe and healthful environment for students, employees and visitors, the Laboratory Safety Inspections are intended to ensure that appropriate service is being provided to assist laboratories in complying with Federal, State, and Institutional requirements. Each laboratory area will receive, at a minimum, one laboratory safety inspection per year from the Office of Research Safety Affairs (RSA). Inspections are conducted with either the Principal Investigator or his or her assigned representative. Following the inspection, RSA will issue a report containing the findings and follow-up as necessary to promote compliance with applicable regulations.

SCOPE AND APPLICABILITY

The scope of this procedure includes all UTHSC research laboratories operating on the Memphis campus and subject to the oversight of the UTHSC Office of Research.

BACKGROUND

Research laboratories use a variety of hazardous materials (e.g., chemical, biological, radiological), and potentially hazardous procedures and equipment (e.g., centrifuges, x-rays, lasers) with the potential for causing physical injuries, fire or life safety hazards. This work and these materials are governed by an array of regulations including the Tennessee Occupational Safety and Health Administration (TOSHA), Tennessee Department of Environment and Conservation (TDEC), Tennessee Department of Transportation (TDOT), Nuclear Regulatory Commission (NRC), and the NIH Guideline for Research Involving Recombinant or Synthetic Nucleic Acid Molecules (under the oversight of the Office of Biotechnology Activities [OBA]), the Center for Disease Control Biosafety in Microbiological and Biomedical Laboratories Guidelines and more).

DEFINITIONS

- **Imminent Danger –** A situation that is likely to result in:
    - Death within 30 days following an injury or exposure to hazardous materials.
    - Immediate severe injury or health hazard resulting in:
        - loss of limb(s)
        - loss of vision in one or both eyes
        - cessation of respiration or heartbeat
        - severe loss of blood that is life threatening
        - loss of consciousness
        - heat stroke
        - permanent loss of function of a body part or significant loss of function
    - An atmosphere defined as immediately dangerous to life or health (IDLH) as defined by NIOSH.
    - Other hazards and situations as determined by a hazard analysis conducted by a trained professional.
- **Laboratory** – Building space allocated to a Principal Investigator or Laboratory Supervisor where the laboratory-use of hazardous materials (e.g. chemical, biological or radioactive materials) occurs.
- **Laboratory Supervisor** - Individual responsible for day-to-day supervision or oversight of the laboratory operation and personnel working in the laboratory. This is often the Principal investigator of a grant funded laboratory.
- **Laboratory-Use** – Handling or use of hazardous materials that are not part of a commercial production process, usually involving multiple hazardous materials or processes.
- **Major Finding** – Any observed condition violating safety regulations or with the potential to inflict significant damage to personnel or property.
- **Principal Investigator (PI)** - The holder of an independent grant administered by a university and the lead researcher for the grant project, usually in the sciences, such as a laboratory study or a clinical trial. The phrase is also often used as a synonym for "head of the laboratory" or "research group leader."

RESPONSIBILITIES

Research Safety Affairs personnel shall:

- Schedule and conduct a Laboratory Safety Inspection in each laboratory at least annually.
- Provide the PI or Laboratory Supervisors with a Laboratory Safety Inspection report within three business days of conducting the inspection.
- Follow-up on all findings in accordance with the Escalation Procedure defined in this document.
- Take action to address conditions that represent an imminent danger to students, staff or visitors. This may include restricting access to building space, closing labs or suspending operations until the hazard has been addressed in a manner satisfactory to RSA.

Principal Investigators or Laboratory Supervisors shall:

- Respond to the RSA request to schedule a Laboratory Safety Inspection by making their laboratory and research personnel available at the pre-determined date and time.
- Verify that all personnel under their supervision have completed the required safety training courses.
- Ensure compliance with federal, state and local regulations and institutional procedures, including the UTHSC Chemical Hygiene Plan and UTHSC Exposure Control Plan.
- Provide corrective action for all findings identified during the Laboratory Safety Inspection.
- Make their laboratory available to Research Safety Affairs personnel conducting follow-up inspections to ensure that corrective actions have been completed.

Research Personnel shall:

- Comply with federal, state and local regulations and institutional procedures including the UTHSC Chemical Hygiene Plan and UTHSC Exposure Control Plan.
- Complete training requirements as determined by RSA and conduct laboratory operations in accordance with the information conveyed in that training.
- Be available at the time of scheduled Laboratory Safety Inspections to answer questions, demonstrate work practices and identify laboratory resources.

UTHSC Office of Research Administration, College Deans and Department Chairs shall:

- Promote compliance with federal, state and local regulations among personnel within their Office, College or Department.
- Provide the administrative oversight, resources (e.g. funding) to ensure that major findings are addressed by PIs and Laboratory Supervisors in a timely manner.

PROCEDURE

1. RSA will annually conduct at least one laboratory safety inspection of the space occupied by each PI. Additional risk-based inspections may be conducted depending on the presence of specific laboratory hazards and in consideration of the work practices employed within the laboratory. RSA will contact the PI or Lab Supervisor to schedule a date and time for the annual lab safety inspection.
2. RSA will provide the PI or lab supervisor with a Pre-Laboratory Safety Inspection Form to be filled out by the PI, Lab Supervisor or their designee. This form provides RSA with essential information about laboratory operations including personnel, hazardous materials, operations etc. The Pre-Laboratory Inspection Form must be returned to RSA at least one week prior to the inspection.

3. The RSA inspector will prepare for the inspection by reviewing the following materials as appropriate:
    - IBC protocols
    - IACUC protocols
    - RSC protocols
    - IRB approvals
    - Exempt Toxin forms (usage, training and documentation)
    - Training records (current documentation)
    - Chemical Inventory and SDSs (complete and accessible)
    - Incident and injury reports
4. The RSA inspector will arrive at the laboratory at the pre-determined time and place. RSA personnel will speak with the Principal Investigator, Laboratory Supervisor and research personnel about laboratory operations, work practices and other applicable information. The Laboratory Safety Inspection will also be used to provide information about updates to institutional procedures, recent incidents, upcoming events and other relevant information. The Laboratory Safety Self-Inspection Checklist included in Appendix A provides a list of issues that will be checked during the inspection.
5. While conducting the inspection the RSA inspector will correct any findings that can be addressed during the inspection. Once the RSA inspector has completed the inspection of all lab space assigned to the PI, the findings will be reviewed with the PI or Lab Supervisor and any necessary corrective actions will be discussed.
6. After the inspection the RSA inspector will compile a report of the findings and corrective actions. RSA will email this report to the PI within 3 business days of the inspection. The PI and lab staff will have 30 calendar days to address any findings.
7. After 30 days, RSA will conduct an unannounced revisit to verify that the corrective actions have been implemented for the identified issues. Additional safety-related observations will also be made at this time (e.g. researcher use of personal protective equipment, etc.).
8. If all corrective actions have been implemented RSA will send an email to the PI closing out all lab safety findings. If all corrective actions have not been implemented or if new issues are identified a follow-up report will be issued. The PI will have an additional 15 days to provide the necessary follow-up. A second unannounced revisit will take place and be followed with either a close-out email or a report of unaddressed findings.
9. Any findings that have not been resolved at the time of the second re-inspection will be referred to the RSA Director. Major findings will be addressed in accordance with the Escalation Procedure articulated in this document.

ESCALATION PROCEDURE

If an observed safety issue is deemed imminently dangerous, a stop-work order may be issued irrespective of the outlined escalation process. This order may be escalated to any or all levels to facilitate prompt remediation.

Conditions violating safety regulations or with the potential to inflict significant damage to personnel or property (i.e. major findings) that have been brought to the attention of the Principal Investigator or Laboratory Supervisor and have not been resolved within the established timeframe or are repeated will be reported in writing to the Department Chair, Dean of the College, Vice Chancellor for Research, and the applicable compliance committee as relevant (e.g. IACUC, IBC, RSC, IRB, etc.) with a copy to the Principal Investigator or Laboratory Supervisor.