

<b>UT Southern:</b>	
<b>SA0005-S - Minors in Laboratories &amp; Shops</b>	
<b>Version 1</b>	<b>Publication Date: 12/11/2024</b>

## I. PURPOSE

UT System Policy SA0550 (Minors in Laboratories and Shops) requires that campuses develop a written plan and appropriate supporting and administrative documents to address minors who are involved in university-sponsored activities in laboratories or shops on campus.

This document represents the plan for the University of Tennessee Southern departments or coordinated programs to protect the safety and health of minors on campus who are engaged in activities in laboratories and shops.

This plan includes:

**Written Procedures**

**Hazard Assessment**

**Training**

**Waiver Form (Appendix A)**

**Activities Requiring Exemption (Appendix B)**

**List of Prohibited Activities (Appendix C)**

Note- this procedure only addresses hazards of research in labs. It is not connected to the procedure regarding Programs for Minors.

## II. SCOPE

This plan applies to minors who are not enrolled as a university student or on campus attending classes, Governor's School, STEM Academies, and camps, but are otherwise present in laboratories, shops, or other areas that contain hazardous substances or physical hazards.

Minors shall be permitted in labs and shops as defined in this plan only if they are engaged in university-sponsored activities.

The system-wide policy does not authorize a minor who is not enrolled in the University as a student to be hired as a university employee. Approval of the appropriate Department Head is required to hire a non-university student under the age of eighteen (18) as an employee.

## III. ABBREVIATIONS & DEFINITIONS

Abbreviations

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**ACGIH-** American Conference of Governmental Industrial Hygienists

**CFR-** Code of Federal Regulations

**dBA-** Decibels, A-weighted scale

**EHS-** Environmental Health & Safety

**IDLH-** Immediately Dangerous to Life and Health

**NFPA-** National Fire Protection Association

**NIOSH-** National Institute for Occupational Safety and Health

**OSHA-** Occupational Safety and Health Administration

**PI-** Principal Investigator

**SCBA-** Self-Contained Breathing Apparatus

**SCUBA-** Self-Contained Underwater Breathing Apparatus

**TCA-** Tennessee Code Annotated

### Definitions

**Biological Hazard (Biohazard)** is defined as any agent (bacterium, virus, fungus, unicellular or multicellular parasite, or prion) or molecule/cellular product (protein, lipid, nucleic acid, etc.) capable of causing disease or other negative health effects. Biological hazards may be acquired through punctures/cuts, open or broken skin (cuts, scrapes, rashes, eczema, acne, etc.), mucous membranes, ingestion, or inhalation. Acquisition of disease and disease outcomes is influenced by route of exposure, dose, and individual differences, including age, health (particularly immune status), vaccination history, and genetics.

**Campus Safety Resources** includes the following groups:

UT Southern Office of Safety & Security

**Chemical Hazard** is defined as any chemical which can cause a physical or health hazard. Examples of physical hazards include explosive, flammable, oxidizing, corrosive, and gases under pressure. The health hazards can either be acute (short-term) and/or chronic (long-term). Factors that affect the hazard of the chemical depend upon the toxicity of the chemical, the route of exposure into the body, the dose, duration of exposure, reaction with other chemicals and individual differences (hereditary, smoking, etc.).

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**Hazardous Substance** is defined as a chemical, biological, or radiological substance capable of causing injury or harm. “Hazardous Substance” includes definitions, classifications, and criteria established by 29 C.F.R. 1910.1200 Appendix A.

**Laboratory** is defined as a location where teaching, experimentation, or research occurs that involves hazardous substances or physical hazards. Examples include, but are not limited to, chemistry labs, biology labs, engineering labs, or other similar places where the hazards described in this procedure are present. For this procedure, laboratories dealing with documents, computers, human subjects research, or other similar activities are not included.

**Minor** is defined as any individual under eighteen (18) years of age and not enrolled in the University as a student.

**Physical Hazard** includes, but is not limited to, the following:

- Exposed energized conductors operating at more than 50 volts AC
- Shear points, crush points, nip points, or run-in points that are not adequately guarded
- Pressure vessels operating in excess of 15 pounds per square inch gauge for compressed gases
- Flammable liquids, solids, or gases as defined by the National Fire Protection Association (Standard 30)
- Cryogenic fluids and reactive materials as defined by the National Fire Protection Association (Standard 45)
- Noise above 90 decibels, A-scale, averaged over an 8-hour day
- Non-ionizing radiation that exceeds standards published by the American Conference of Governmental Industrial Hygienists
- Equipment producing ionized radiation

**Principal Investigator** is the administrative head of the research laboratory or shop. The PI determines research/work objectives, designs experiments, and assigns responsibility to laboratory/shop staff and students.

**Radiological Hazard** describes types of radiation, which can be divided into two categories:

**Non-ionizing-** examples of non-ionizing radiation include visible light, ultra-violet and infrared radiation, microwaves, radio frequency radiation, and electromagnetic fields.

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**Ionizing-** examples of ionizing sources include devices which produce X-ray radiation, devices which accelerate particles, sealed radioactive sources, or loose substances (solids or liquids) which emit ionizing radiation through man-made or natural processes.

**Shop** is defined as an area where wood, metal, masonry, plastic or similar products are manipulated by any means, such as cutting, drilling, boring, fastening (nails, rivets, screws, welds, etc.), sanding, grinding, heating, priming, finishing, or any similar activities.

**Supervisor** is defined as the PI or other senior individual assigned by the PI or Department Chair. The supervisor is competent in and can responsibly oversee the research/work procedures being performed to include proper technique(s) and safety precautions.

#### IV. ROLES & RESPONSIBILITIES

The PI or designated supervisor shall:

- Complete the Safety Assurance Form (Appendix A)
- Ensure minors have received appropriate site-specific training
- Report accidents/injuries/exposures that occur to minors as soon as possible, following the UT Office of Risk Management reporting procedures
- Conduct a hazard assessment for the minors' assignments
- Consult with campus safety resources as necessary
- Provide any necessary personal protective equipment
- Ensure minors do not undertake activities listed as Prohibited Activities (Appendix C)
- Obtain exemption approval from the campus safety resources for certain hazardous activities (Appendix B)
- Maintain records as required under the Recordkeeping section below

Campus Safety Resources shall:

- Provide guidance to departments, supervisors, and PIs regarding this procedure and hazard assessment
- Provide general lab/shop safety training
- Work with campus leadership to ensure this procedure is disseminated
- Review and revise this procedure periodically
- Maintain records as required under the Recordkeeping section below

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## V. PROCEDURES

### Hazard Assessment and Safety Assurance

The PI or supervisor shall conduct a hazard assessment of the tasks likely to be conducted by the minor(s). Note that Campus Safety Resources are available to assist with the hazard assessment. The hazard assessment shall be documented.

No minor shall be permitted to participate in prohibited activities as listed in Appendix C: Prohibited Activities.

The PI or supervisor will prepare a descriptive form that describes the minor's tasks, to be signed by the minor and the parent/guardian. A template can be found in Appendix A.

This descriptive form must include, at a minimum, the following:

- A detailed description of the minor's activities so that the minor and parent/guardian can make an informed decision about all the risks associated with the proposed activity.
- Hazard specific training that must be completed by the PI or supervisor with the minor.
- Assurance that the minor will be supervised at all times while at the facility.
- Assurance that the laboratory/shop will be in full compliance with all applicable University safety programs and regulations.
- Identify the PI or supervisor responsible for the minor's activity so parents/guardians know who to contact with questions or concerns about the activity.
- The date(s) of the proposed activity for the minor's parents/guardians to consider.
- Clear, unambiguous language that is understandable to a layperson.
- A release completed by each minor's parent/guardian.
- Adequate time for each minor's parent/guardian to review the descriptive form and sign the release

### Exceptions

In view of the open and diverse research environment potential at UT Southern, this plan provides for limited exceptions to these requirements based upon review and

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written approval by campus leadership. In considering whether an exception to this plan is warranted, local departments should forward their request to the Provost & Vice Chancellor of Academic Affairs.

Relevant information to consider includes: the specific laboratory environment; the minor's previous lab course work and/or related experience; the safety training the minor will receive; the ability of the lab to provide close supervision; and the purpose of the proposed lab experience (See Appendix B for more information on exemptions).

#### Personal Protective Equipment

All minors working in labs and shops must adhere to a laboratory dress code and use personal protective equipment (PPE) when working in potentially hazardous situations or around potentially hazardous materials and/or equipment. The PI or supervisor will provide the necessary PPE and any instruction on how to properly wear the PPE.

## **VI. TRAINING MINORS**

A general safety orientation shall be made available and maintained by Campus Safety Resources. The general orientation can be conducted in-person by the PI or supervisor.

Minors shall take all applicable modules (e.g. chemical safety, biological safety, etc.) of the general self-study safety orientation before beginning work.

The minor's primary supervisor or PI shall address site-specific safety subjects.

#### Principal Investigators or Designated Supervisors

Safety training is a specialized topic that may not every PI may be prepared to undertake. PIs should contact Campus Safety Resources for methods to ensure best practices for minors. At a minimum, PIs shall ensure they are familiar with this document and understand how to comply with the procedure. If they require assistance they should consult appropriate resources.

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### Parents/Guardians

Parents/guardians can only make informed decisions regarding their children's participation if they are properly informed of the risks. Both the PI or supervisor will provide educational materials to assist parents and guardians.

## **VII. RECORDKEEPING**

The PI or supervisor is responsible for maintaining the lab or shop specific safety training documentation, safety assurance forms, and written assessments as listed above.

General and specific training documents shall be maintained by the PI or supervisor for a minimum of 3 years. These records should be combined with the other documentation that the PIs must complete for the Programs for Minors programs.

### Written Hazard Assessment

Written hazard assessments to cover any hazardous materials or associated procedures in the lab or shop are required (e.g. chemical hygiene plan; safety data sheets; Institutional Biosafety Committee-approved registration documents for recombinant DNA, infectious agents, or biological toxins; standard operating procedures which address risk and risk mitigation).

### Safety Assurance Form and Rules for Minors in Shops and Labs Form

Completed Appendix A forms shall be maintained for at least three years. Records shall be kept "at least 10 years" in the event a minor is injured or if litigation is expected.

## **VIII. APPENDICES**

Appendix A: Safety Assurance

Appendix B: High Hazard Activities that Require Exemption

Appendix C: Prohibited Activities

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## Appendix A: Safety Assurance

Name of Minor: \_\_\_\_\_

Worksite Location(s):

\_\_\_\_\_  
\_\_\_\_\_

Activities:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Attach additional information if necessary

**Responsible Principal Investigator or Supervisor:**

I agree to sponsor the minor identified above and my signature below agrees that:

1. I have read, understand, and will adhere to The University of Tennessee System policy and to the University of Tennessee Southern procedure outlined above.
2. I will ensure the minor has received the necessary training before participating.
3. I have reviewed or will review with the minor at the time of arrival on campus the hazards involved with participating in the lab or shop.
4. I have confirmed that necessary personal protective equipment appropriate for, and specific to, hazards will be provided.
5. This individual will be supervised at all times while in the laboratory or shop and never left alone. The laboratory or shop in which the minor will be working is in compliance will all applicable University of Tennessee safety programs and regulations.



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Name of Principal Investigator or Supervisor \_\_\_\_\_

PI/Supervisor Phone \_\_\_\_\_ PI/Supervisor Email \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_

Form continues

**Minor:**

1. I have read, been told, and agree to follow the safety policies of The University of Tennessee System and The University of Tennessee Southern.
2. I acknowledge and agree that there are risks involved with the activities described above.
3. I have read, understand, and signed the Rules for Minors in Laboratories and Shops.
4. I agree to complete safety/hazard or other required training provided by the University of Tennessee Southern before participating in the activities described above.
5. I choose to voluntarily participate in this activity with full knowledge that the activities described above may be hazardous to me.
6. I agree that my participation may be suspended at any time, at the discretion of the University of Tennessee Southern and its officers, agents, and employees.
7. I agree to immediately report any accidents/injuries/exposures to the PI or supervisor as soon as possible.

I have carefully read this document and had sufficient time to ask questions and be given answers. I sign this document voluntarily.

Name of Minor (print) \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

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**Parent/Guardian:**

I, \_\_\_\_\_ am the parent or legal guardian of the participant who has signed above.

1. I have read and understand what my child will be doing and the risks involved.
2. I understand that I may contact the PI or supervisor if I have questions or concerns.
3. I agree that my child's participation may be suspended at any time, at the discretion of the University of Tennessee and its officers, agent, and employees, if the safety of my child or others becomes a concern.
4. I certify my child has adequate health insurance necessary to provide for and pay for any medical costs that may directly or indirectly result from participation in the activities described above.
5. I have read and I understand this information and I consent to my child taking part in the activities described above. I agree to release, indemnify, and hold harmless the University of Tennessee Southern for any loss, liability, damage, or costs, including court costs and attorney's fees, that may occur as a result of my child's participation in the activities described above.

**Name of Parent or Legal Guardian** \_\_\_\_\_

**Signature** \_\_\_\_\_ **Date** \_\_\_\_\_

**Rules for Minors in Laboratories & Shops**

1. Never participate on a scheduled assignment alone in any laboratory or shop environment without direct, immediate adult supervision from the PI or supervisor.
2. Complete and follow safety training specific to the hazards in the laboratory or shop.
3. Always wear the personal protective equipment as directed and dispose of it appropriately. This PPE includes goggles, gloves, coats/gowns, and other face/body protection as dictated by the hazard being worked with or around. Always remove PPD when leaving the work area.
4. Always follow the instructions of the PI or supervisor.
5. Always report any accident (regardless of severity) immediately to the PI or supervisor.
6. Always keep your hands away from your face and wash them well with soap and water prior to leaving any laboratory area and after removing gloves.

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7. Never eat, drink, chew gum, apply lip balm, or touch contact lenses while in any laboratory environment.
8. Always wear closed-toe shoes while in any laboratory or shop.
9. Always tie back long hair to keep it out of any potential hazards.
10. Always wear clothing that reduces the amount of exposed skin.
11. Always ask questions if you don't understand the safety requirements.

**Name of Minor** \_\_\_\_\_

**Signature** \_\_\_\_\_ **Date** \_\_\_\_\_

**Name of Parent or Legal Guardian** \_\_\_\_\_

**Signature** \_\_\_\_\_ **Date** \_\_\_\_\_

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## Appendix B: High Hazard Activities that Require Exemption

The following list of activities shall not be undertaken by minors, unless the Principal Investigator or supervisor has received prior approval from campus leadership or other Campus Safety Resources prior to activity. This list is not exhaustive:

- Hot work involving welding, brazing or torch cutting
- Operation of power-driven woodworking machines
- Operation of power-driven metal-forming, punching, and shearing machines
- Non-ionizing Radiation- exposure to lasers in hazard classes III or IV
- Operation of circular saws, bandsaws, and guillotine shears
- Presence near powder-actuated fasteners
- Presence on construction sites
- Exposure to noise sources exceeding 90 dBA
- Working with chemicals that are flammable, corrosive, toxic, etc.
- Work with (or around) biological hazards which pose a moderate risk to human health and require enhanced safety and containment precautions

### High Hazard Activities Exemption Form

Principal Investigator or Supervisor Name \_\_\_\_\_

Date(s) of Event \_\_\_\_\_ Name of Event \_\_\_\_\_

Event Affiliation \_\_\_\_\_

Worksite Location \_\_\_\_\_

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The following information needs to be submitted to the Office of Safety and Security who will coordinate with campus leadership and receive prior approval before allowing students to participate in activities listed in Appendix B.

1. Provide a class or event description of the event activities
2. Provide a copy of all procedures that will be followed when minors are conducting high hazard activities.
3. Provide a list of personal protective equipment that minors will be required to wear.
4. Explain the topics that will be covered in the required site-specific training. Attach a copy of any quizzes or other training tools that will be used.
5. Explain the plan for oversight ensuring that minors will be directly supervised at all times and there is adequate oversight for the number of minors participating in the activity.

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### **Appendix C: Prohibited Activities**

The following list of activities shall not be undertaken by minors:

- Entry into a permit-required confined space
- Presence where an unguarded fall hazard exists
- Equipment maintenance, set-up, repair, adjustment or testing that would require lockout/tagout
- Evacuation and trenching must comply with OSHA Standards
- Operation of backhoes, front end loaders, forklifts, bulldozers, track hoes, bobcats, and similar heavy equipment
- Operation of UT vehicles, including all-terrain vehicles, motorcycles, carts, and any other motorized or electric conveyances
- Presence in close proximity to unguarded power transmission equipment such as fly wheels, rotating parts, drive belts/pulleys, screw conveyors, or any similar equipment
- Clean up of spills of hazardous materials
- Presence on scaffolding more than 10 feet above the ground
- Handling open sources of radioactive materials, exposure to x-ray machines, or being left unattended with any type of ionizing radiation
- Exposure to non-ionizing radiation sources exceeding standards established by the American Conference of Governmental Industrial Hygienists
- Presence in situations where a self-contained breathing apparatus is necessary
- Presence in situations that are considered immediately dangerous to life and health as defined by the National Institute for Occupational Safety and Health
- Where a self-contained underwater breathing apparatus (SCUBA) is used
- Activities in or about establishments manufacturing or storing explosives or articles containing explosive components
- Operation power-driven hoisting apparatuses
- Work with or around biological hazards which pose a high risk to human health and require high containment
- Any other activities that have been declared by regulation to be hazardous or injurious to the life, health, safety, and welfare of minors
- Exposure to highly hazardous materials, including pyrophoric, explosives, large quantities of flammable materials, and compounds, such as hydrofluoric acid,

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osmium tetroxide, Group 1 or 2 carcinogens, as identified by the Agency for Research on Cancer, or DEA controlled substances