MERCER UNIVERSITY
Science Laboratory Operations Manual

I. Procedures for access to Mercer University laboratory facilities

A. Mercer University Students

1. Officially enrolled in a class with a laboratory section or in an independent research class.

2. Under special circumstances, students may be able to volunteer as a laboratory assistant in a university research project.

a. The status of volunteer changes the dynamics of the academic relationship from Faculty/Student to a workplace relationship of Supervisor/Employee. This change in status creates new requirements under Federal Labor Law.

b. The Primary Investigator (PI) must ensure that the volunteer Mercer student has completed basic laboratory safety training in accordance with OSHA standards. (CFR29: 1910.1200-Hazard Communications Standard & 1910.1450-Chemical Hygiene in Laboratories)

B. Mercer University Employees

1. All employees with laboratory duties will receive initial training and assignments from their PI, laboratory supervisor (LS), or the Health & Safety Office.

2. The PI/LS must ensure that the Mercer employee has completed basic laboratory safety training in accordance with OSHA standards. (CFR29: 1910.1200-Hazard Communications Standard & 1910.1450-Chemical Hygiene in Laboratories)

C. Non-Mercer Students or Volunteers
(Application for Access to Science Laboratories)

1. Non-Mercer Students are required to submit the "Application for Access to Science Laboratories" form to the Faculty Sponsor (Supervisor) and appropriate Department Chair. Copies must be provided to the departmental safety officer (when applicable) and the Health & Safety Office. The form is available through the Health & Safety Office or its website. The completed form must include attachments describing potential exposure to hazardous chemicals, biohazardous materials, radioactive materials, or laboratory animals. The Faculty Sponsor, by signing the form, assures that the student or volunteer will have received appropriate safety training before initiating activities in the laboratory.

Approved May 2001
Revised February 2003
IHCDSC

2. Persons under 18 years of age are not permitted to carry out tasks or activities in Mercer laboratories unless supervised on site by the Faculty Sponsor. A parent or guardian must sign the "Application for Access to Science Laboratories" for anyone under 18 years of age who requires access to a laboratory.

3. Persons under 18 years of age are not permitted to work with radioactive materials, human blood or potentially infectious human body fluids covered by the OSHA Bloodborne Pathogens Standard (CFR29: 1910.1030-Bloodborne Pathogens Standard), biohazardous materials requiring Biosafety Level-2 containment, or hazardous chemicals with Environmental Protection Agency (EPA) U- or P-rated classifications.

4. Persons under 18 years of age who are children of Mercer faculty or staff must be under direct parental supervision when they are in Mercer laboratories or support facilities, or they must have been authorized to have access by the "Application for Access to Science Laboratories" process.

II. General requirements for laboratory operations at Mercer University

NOTE: All rules will be enforced at the local level by the appropriate department chairs, primary investigators, and laboratory supervisors.

A. It is very important that each Mercer employee, non-Mercer student, or volunteer preparing to work in a Mercer University science laboratory read and understand this document completely. **Mercer University students enrolled in a laboratory class will receive regular supervision and training from the faculty as part of the instructional requirements for the course. There is an expectation for the faculty to provide the information to the students**.

B. While in the laboratory environment, always be alert for potentially unsafe conditions or individual actions. An accident can injure bystanders who are not responsible for the mistake.

C. The PI/LS must prohibit disruptive behavior or practical jokes that distract or confuse other individuals involved in laboratory procedures.

D. Laboratory equipment is to be used for its intended, engineered purpose only. Experimental or capricious use of laboratory equipment is prohibited.

E. The PI/LS must ensure all laboratory workers are using the proper personal protective equipment (PPE) and has been informed of all appropriate safety and emergency procedures as outlined in section III of this document.

F. The PI/LS must ensure all laboratory workers recognize and understand warning signage for hazardous chemicals, biohazards, radioactive materials, and devices which produce non-ionizing radiation.

G. Laboratory workers (students, employees, & volunteers) must notify the PI/LS of any safety problems and/or concerns immediately upon discovery.

H. Laboratory workers (students, employees, & volunteers) must notify the PI/LS of any individual who has been injured or exposed to a hazardous chemical.

If the PI/LS are not available, seek medical attention for the victim at:

1. **Macon Campus – Mercer Health Systems, School of Medicine**
2. **Atlanta Campus - Campus Health Center, School of Pharmacy**

Once aid has been rendered to the victim, report the incident to the PI/LS and the Mercer Police.

III. Laboratory Safety Requirements

NOTE: All rules will be enforced at the local level by the appropriate department chairs, primary investigators, and laboratory supervisors.

A. Laboratory Attire

1. Wear clothing that can be damaged without concern.
2. Long hair must be secured to avoid contact with chemicals and equipment.
3. Open-toed or perforated shoes, shorts, and short skirts must not be worn in a laboratory environment.
4. Lab coats should be worn at all times in a laboratory environment.

B. Food, Drink, and Personal Care Products

1. Smoking, eating, drinking, and applying personal care products must not be allowed in a laboratory environment.
2. Storage of food, drinks, and personal care products in the laboratory environment must not be allowed.

C. Emergency Equipment

1. Eye wash stations and safety showers should be activated on a weekly basis to ensure proper operation and remove accumulated debris, in accordance with the ANSI standards for this equipment. (ANSI Z358.1-1998)
2. All other emergency response equipment such as spill containment, cleanup, and first aid supplies should be inspected, at minimum, on an annual basis.

D. Laboratory Chemicals

1. All laboratory chemicals must be in properly labeled containers at all times. Containers of unknown chemicals create employee safety and waste disposal problems and must not be allowed.
2. Container labels should use commonly understood language, complex chemical symbols should be avoided.

E. Chemical Fume Hoods

1. A chemical fume hood must be used for all procedures that generate flammable gases, toxic vapors, or other potentially dangerous atmospheric conditions.
2. Chemical fume hoods must be re-certified for proper operation on an annual basis by the Health & Safety Office or qualified contract service. If the fume hood is not functioning according to the manufacturing specifications, the unit must be removed from service until proper repairs are completed and the unit is re-certified by the Health & Safety Office or qualified contract service.
3. Any suspected operational problem with a chemical fume hood should be reported to the designated Building Steward, departmental safety officer, and/or the Health & Safety Office immediately. All work generating potentially dangerous atmospheric conditions should be discontinued until the unit is determined to be functioning properly.
4. Chemical storage in fume hoods must be minimized at all times.

F. Personal Protective Equipment

1. All individuals working in a laboratory environment must use the appropriate or recommended personal protective equipment for the procedures underway.
2. Examples of the primary equipment to consider:
   a. Eye / Face protection
   b. Hand / Arm protection
   c. Lab Coat to protect street clothes from contamination
   d. Full coverage footwear

G. The PI/LS must ensure that Material Safety Data Sheets (MSDS's) are available for all chemicals used in the laboratory procedures in accordance with OSHA standards. (CFR29 1910.1200, Hazard Communications Standard)

H. The PI/LS should conduct special hazardous chemical training for laboratory workers concerning all substances that present unique dangers to the user in accordance with OSHA standards. (CFR29: 1910.1200-Hazard Communications Standard & 1910.1450-Chemical Hygiene in Laboratories)

I. Mouth pipetting of chemical or biological agents is not allowed for any reason.

J. Never attempt to smell or taste a chemical or biological agent for any reason.

K. In facilities that store and use **radioactive materials**, the PI/LS should periodically consult with the local Radiation Safety Officer (RSO) and/or the University Radiation Safety Officer (URSO) concerning all individuals involved in laboratory activities, maintenance, or periodic visitation. Personal dosimetry devices may be appropriate for individuals with periodic duties in laboratory facilities that store and use radioactive materials. The local RSO and/or the URSO will determine appropriate dosimetry requirements in accordance with the most recent edition of the Mercer University Radiation Safety Manual.

IV. Chemical Waste Disposal Procedure

A. All laboratory personnel must be instructed on the proper chemical waste disposal procedures for the university.

1. Waste containers must be available at all times.

2. Proper labeling of the waste containers must be maintained and be in accordance with the State of Georgia and the U.S. Environmental Protection Agency regulations. (EPA Parts 260-265)

3. Proper chemical waste labels will contain the following information:
   a. Chemical name, amount & concentration; or approximate percentages of multiple chemical wastes & those concentrations
   b. Generator signature & Date
   c. EPA/RCRA Waste Classification, when possible

B. Satellite storage facilities for hazardous chemical waste must be maintained in accordance with the State of Georgia and the U.S. Environmental Protection Agency regulations. (EPA Parts 260-265)

C. The Mercer University Health & Safety Office can assist all departments with interpretation of the EPA regulations concerning the creation and management of satellite storage facilities.

D. The Mercer University satellite storage facilities are in the following locations:

1. MACON CAMPUS, Willet Building. The Chemistry & Biology departments share the facility and control access to the room.

2. MACON CAMPUS, School of Medicine. The facility is controlled by the Medical School administration.

3. MACON CAMPUS, Physical Plant Department - Medical School 2 compartment trailer. The Medical School manages the large two-door compartment, and the Health & Safety Office manages the remaining compartment. The Health & Safety Office compartment is maintained to collect and temporarily store miscellaneous hazardous waste from the general university.

4. ATLANTA CAMPUS, School of Pharmacy. The facility is controlled by the Pharmacy School administration.

5. The Health & Safety Office can assist any department with determining the appropriate storage facility to use if emergency needs arise for hazardous chemical waste storage.

V. Biological (Biohazardous) Waste Decontamination or Disposal Procedures

A. The PI/LS must instruct all laboratory personnel on how to identify biohazardous waste products and to implement the appropriate decontamination or disposal procedures for specific laboratory operations.

B. The Health & Safety Office can assist any department with determining the appropriate decontamination or disposal procedures to implement in accordance with current regulatory standards and recommendations.

VI. Radioactive Materials: Procurement, Storage, Handling, Use, and Waste Disposal

A. All issues associated with radioactive materials at Mercer University are regulated by the Mercer University State of Georgia Radioactive Materials License and monitored by Mercer's Institutional Radiation Safety Committee (IRSC).

1. The Radioactive Materials Program at Mercer University is managed by a local Radiation Safety Officer (RSO) in schools which use radioactive materials, with administrative oversight provided by the University Radiation Safety Officer (URSO) and the IRSC.

2. The IRSC created a Radiation Safety Manual for the Radioactive Materials Program in order to provide guidelines for radioactive material use.

VII. Non-Ionizing Radiation

A. The Institutional Radiation Safety Committee (IRSC) has a subcommittee to address University issues relating to laboratory and clinical devices which generate non-ionizing radiation.

B. Questions concerning devices which generate non-ionizing radiation should be addressed to the responsible PI/LS and/or the URSO.

VIII. Administrative Procedures

A. Each department and PI should be prepared to cooperate with periodic laboratory inspections by a representative of the university administration.

B. Each department and PI must be prepared to cooperate with an unannounced inspection by any local, state, or federal official that may request access to a laboratory or associated facility. The Department Chair or PI should immediately report the arrival of a government official to the Senior Vice President for University Research & Health Affairs.

<u>SPECIAL NOTE</u>: A university employee must never deny a local, state, or federal government representative access to a university facility!