

1.0 OVERVIEW

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Howard University prepared this Laboratory Environmental Health and Safety Manual to ensure a safe working environment through safe work practices and procedures in laboratories. It is the policy of Howard University (the University) not only to adhere to the local, state and federal regulations but also to Standards of Care and Best Management Practices to provide a safe environment in the laboratories.

1.2 PURPOSE

The purpose of this program is to provide methods to ensure safety in the laboratories located at the University. The program will cover how to minimize or eliminate risk associated with chemical, hazardous, biological and radioactive materials used in the laboratories, electrical hazards and mechanical hazards. It will provide guidelines for staff to ensure a safe environment in their laboratory settings.

1.3 ROLES AND RESPONSIBILITIES

It is the goal of the University to promote and maintain a safe, healthful, and environmentally responsible workplace. Specific responsibilities include:

- Ensuring the adequacy of technical and financial resources to conduct compliance programs in accordance with the University standards and regulatory requirements.
- Identifying personnel affected by specific compliance requirements.
- Communicating compliance program requirements to administration and faculty.
- Securing faculty and administration input for the development and implementations of compliance management programs.
- Communicating, periodically, compliance program status to the University community, including program objectives, results, and effectiveness

1.3.1 Departments

Each department is responsible for supporting and promoting safe and compliant work practices in the laboratory. Department faculty and administration are responsible for facilitating the implementation of the manual within each department.

Department Chairs will appoint chemical hygiene coordinators who work with the Chemical Hygiene Officer (CHO) i.e., the Director of Environmental Health and Safety (EH&S) for ensuring that all work performed within their department complies with applicable health, safety, and environmental requirements. The department chairs may implement this responsibility through delegation to principal investigators (PIs), other faculty, department administration, or other departmental staff deemed appropriate. The duties of the Department Chairs include:

- Collaborating with the administration, EH&S and others to identify effective means to implement this manual in the laboratory.
- Providing feedback to administration regarding compliance status.
- Ensuring that personnel receive required training, to implement the manual effectively.
- Coordinating and facilitating exchange of information regarding chemical hygiene issues with research and teaching community.
- Facilitating compliance with the manual requirements.
- Ensuring compliance responsibilities are assigned and implemented for all areas and operations in the Department. These responsibilities include training, recordkeeping, reporting, program evaluation, and plan revision.
- Communicating EH&S programs to the laboratories, PIs, and their appointed Safety Coordinators.
- Serving as the primary liaison for EH&S Department.
- Monitoring EH&S compliance within their department.

1.3.2 Chemical Hygiene Officer

The CHO, the director of EH&S is critical to the effective implementation of the Laboratory Safety Management Program. The CHO, working with the PI and the department chemical

hygiene coordinator is responsible for the adaption and implementation of this program in his or her laboratory, thus maintaining a safe work environment and ensuring compliance with regulatory requirements. The duties of the CHO include ensuring that:

- Appropriate training is provided to new and current laboratory personnel and is properly documented.
- Workers know and follow established safe work procedures and emergency procedures.
- Safety equipment and engineering controls are utilized.
- Appropriate personal protective equipment is utilized.
- Laboratory practices and safety and control equipment inspections are routinely conducted and properly documented.
- Copies of the up-to-date manual and chemical hazard reference materials (e.g., Safety Data Sheets [SDSs]) are available to laboratory personnel.
- Procedures for new or particularly hazardous substances or operations are coordinated with input from the CHO and the University EH&S Office.
- Accidents and other potential exposure conditions are reported to the CHO and Howard University EH&S Office for further investigation.
- Recommended actions are taken to correct any unsafe condition.

1.3.3 Principal Investigators (PIs)

Each PI plays a critical role in the implementation of this program. The PI has primary responsibility for chemical hygiene and EH&S compliance in his or her laboratory. These responsibilities include ensuring that:

- Laboratory personnel have adequate knowledge and information to recognize and control chemical hazards in the laboratory.
- Hazardous operations are defined and safe practices and protective equipment are designated and provided.
- Safe work practices, personal protective equipment and engineering controls are used to reduce the potential for exposure to hazardous chemicals.

- Laboratory personnel are informed of the potential hazards of the chemicals they use and are trained in safe laboratory practices, controls, and emergency procedures.
- Laboratory personnel are informed of the signs and symptoms associated with exposures to hazardous chemicals used in their laboratory.
- Chemical waste is managed properly.
- Action is taken to correct work practices and conditions that may result in the release of hazardous chemicals.
- He or she grants approval, where required, prior to the use of particularly hazardous substances in the laboratory (see section 2.10).
- Laboratory operations are supervised to ensure that the manual is being followed.
- Compliance with the manual is maintained and documented.

1.3.4 Laboratory Personnel

Laboratory personnel are responsible for:

- Participating in laboratory safety training sessions.
- Being aware of the hazards of the chemicals they are working around or with, and safe storage, handling, and disposal procedures.
- Planning and conducting each operation or experiment in accordance with established chemical hygiene procedures.
- Using appropriate safe work practices, personal protective equipment, and engineering controls at all times.
- Reporting unsafe conditions to their supervisor or department health and safety coordinator

Laboratory personnel and PIs share responsibility for chemical safety in their laboratory, as well as informing visitors entering their laboratory of the potential hazards and safety precautions to be taken.

1.3.5 Environmental Health and Safety Office

The primary responsibility of the University EH&S Office staff is to provide technical support and guidance to laboratory personnel for the development and management of EH&S programs. The University EH&S Office is responsible for reviewing and updating the common (non-laboratory specific) portions of the manual on an annual basis and distributing any required changes to the appropriate University personnel. The University EH&S Office offers the following services relating to chemical hygiene:

- Development and evaluation of safety procedures
- Laboratory inspections and audits
- Fume hood evaluation and inspection
- Training and information dissemination
- Hazardous waste disposal
- Hazard and exposure assessments
- Accident investigation
- Emergency assistance

1.4 TRAINING REQUIREMENTS

The CHO or the chemical hygiene coordinator shall provide information and training concerning the handling of hazardous materials in the laboratory. The University EH&S Office staff is available to assist in developing and implementing training procedures and policies.

Employees shall be informed of the presence of hazardous chemicals when assigned to a work area and prior to new exposure situations. This information must include the following:

1. Contents of the Occupational Safety and Health Administration (OSHA) Laboratory Standard, Title 29 Code of Federal Regulations Section 1910.1450.
2. Applicable details and location of the manual.
3. Emergency and personal protective equipment training.
4. Physical and chemical properties of hazardous substances used in the workplace.
5. Proper handling of hazardous chemicals to minimize exposure.

6. Signs and symptoms of exposure associated with hazardous chemicals used in the workplace.
7. Availability of reference material, including SDSs.

Training should be provided immediately for new employees in the affected work area and annually thereafter for all personnel. The name of each person trained shall be recorded together with the training contents, date, and the trainer.

It is the responsibility of the Department and the PI to assure that all staff members attend the required training sessions. It is the Department's responsibility to alert the University EH&S Office and the CHO of a new employee. Further, if English is not the primary language spoken by a staff member, the Department should ensure that an interpreter accompanies the non-English speaking staff.

1.5 GENERAL LABORATORY PRACTICES

1.5.1 Food and Drink

Food and drink are not permitted in the laboratory at any time. In addition, laboratory members should never smoke, eat, drink, chew gum, apply cosmetics or lip balm or handle contact lenses in the laboratory.

Food used in research (e.g., dry milk, cornmeal, oil, sugar) should be labeled "For Research Use Only."

Alternatives for Food and Drink Storage include:

- Food storage areas (shelving or cubbies) by the outside main entrance to the laboratory areas
- Designating lounge areas for food and drink consumption
- Designated areas within kitchenettes for laboratory food and drink storage

No food and drink in laboratories or adjacent offices will mitigate potential ingestion risk and assure compliance with regulations.

1.5.2 Cell Phone Usage

Cell phone usage in the laboratory should be limited and restricted to emergency use only. Cell phones are difficult to decontaminate if they come in contact with hazardous materials in the laboratory. Land lines designated for usage within the laboratory setting for laboratory personnel will minimize any potential for transfer or exposure.

1.5.3 Restricted Access

Access to laboratories where hazards are present should be limited to researchers or personnel trained on the hazards present in that work area. Visitors to the area must be accompanied by a laboratory member who is familiar with the area and trained in emergency response procedures relating that laboratory. Areas where highly hazardous materials are located should be demarcated and access should not be permitted to visitors or those less familiar with the hazard present.