PURPOSE

Laboratories are potentially hazardous spaces. This is especially true in undergraduate and research laboratories considering the chemical, biological, radiological, and/or physical hazards, turnover of personnel and varied levels of worker competency. The purpose of this document is to provide information to the university community on the minimum requirements for working safely in the laboratory.

SCOPE

The Laboratory Safety Manual outlines the minimum requirements to all employees, contractors, students, post-doctoral fellows, volunteers, and visiting scholars for working safely in the laboratory environment. This introduction highlights major components of the Laboratory Safety Program and also directs users to other Environment, Health and Safety (EH&S) resources.

LABORATORY DEFINED

Laboratories are defined as spaces or facilities used for teaching and/or research where hazardous conditions may exist. Such conditions include, but are not limited to, the presence of: chemicals, biohazards, radioactive materials, radiation emitting devices (lasers, x-ray), drugs, machinery, high voltage discharge and temperature extremes.

Other spaces that are commonly referred to as laboratories, but not included in this definition if the above described hazardous conditions are absent, include computer laboratories, music laboratories, clinical or psychological observation rooms etc.

LABORATORY SAFETY PROGRAM

The Laboratory Safety Manual is intended to address the health and safety requirements of all laboratories.

Laboratories working with radioactive materials have specific requirements to follow set out by the Canadian Nuclear Safety Commission and the University of Calgary. Requirements, guidelines and information for safely working with radiation are found in the Radiation Safety and Procedures Manual. In addition, other information and requirements related to radiation emitting devices (x-ray and laser) can be found in the LASER Safety Manual and the Radiation Emitting Devices Safety Program - for Diffraction, Analytical, Cabinet and Research Based X-ray Equipment.

Laboratories working with biohazards have specific requirements to follow set out by Public Health Agency of Canada, Canadian Food Inspection Agency and the University of Calgary. Requirements, guidelines and information for safely working with biohazards are found in the Biosafety and Procedures Manual.

OCCUPATIONAL HEALTH & SAFETY MANAGEMENT SYSTEM

The University is committed to the development and implementation of an Occupational Health and Safety Management System (OHSMS). The OHSMS is composed of eight elements summarized below. Additional details are located at http://www.ucalgary.ca/safety/ohs_management.

1. Organizational Commitment
   The University of Calgary’s Occupational Health and Safety Policy has identified that all individuals in the workplace share the responsibility for ensuring a safe working, learning and living environment.

2. Hazard Identification and Assessment
   Each Laboratory Principal Investigator is required to ensure a completed Laboratory Hazard Assessment and Control Form (HACF) is in place and communicated. The HACF identifies workplace hazards and the methods used to control or eliminate the hazards. Principal Investigators are also required to ensure the HACF is reviewed and updated post incident or when changes to the operation are implemented (i.e. new equipment or a process is introduced to the work area).

3. Hazard Control
   See # 2 above

4. Formal Workplace Inspections
   Workplace inspections are a regular, systematic way of monitoring the workplace to ensure a safe working environment by reducing the risk of occupational injuries and illness through the identification and correction of unsafe conditions and hazards. Principal Investigators are required to ensure that a self inspection of their laboratory occurs annually.

5. Orientation & Training
   Orientation and training for laboratory personnel must be documented using the Laboratory Health and Safety Orientation and Training Record. The WHMIS and Safety for Laboratories course is mandatory for all personnel at the University of Calgary working with or near hazardous materials and fulfills a requirement of the Alberta Occupational Health and Safety Code. Other applicable training, as identified in the Laboratory Hazard Assessment and Control Form (HACF), must be completed. http://www.ucalgary.ca/safety/courses. Site specific training and its documentation is the responsibility of the Laboratory Principal Investigator. The Alberta Occupational Health and Safety Regulation, 13 (1) requires that: “if work is to be done that may endanger a worker, the employer must ensure that the work is done (a) by a worker who is competent to do the work, or (b) by a worker who is working under the direct supervision of a worker who is competent to do the work.”

6. Emergency Response Planning
   Emergency Response Planning is reliant on having accurate and up to date information in place for first responders.

LABORATORY REGISTRATION
All laboratories must be registered in Chematix prior to occupancy. The faculty, department or institute must supply EH&S with the name of the laboratory supervisor and the laboratory room number(s) and building. EH&S will enter the information into Chematix and provide further instructions.

LABORATORY PLACARD
Laboratory Principal Investigators are required to complete and post a Laboratory Placard at each public entrance to the laboratory. The laboratory placard provides a summary of hazards existing in the space and daytime contact information.
7. Incident Investigation
The university requires the reporting of all accidents and incidents using the web-based Online Accident Reporting System (OARS). An accident or incident includes: a sudden or unforeseen event which could cause or has caused an injury or occupational illness; a release of hazardous materials to the environment; or; a near miss.

The Supervisor responsible for the employee is required to investigate the accident or incident to determine the immediate and root cause, and identify corrective actions to prevent a recurrence. The investigation is not conducted to assign blame but rather to correct the causes of incidents to prevent recurrence.

8. Program Administration
All aspects of the OHSMS are required to be recorded, tracked, and maintained. Keeping records plays a critical part in monitoring the effectiveness of the health and safety system. The most current version of the Laboratory Safety Manual is found online. A hard copy of the manual may be printed with the understanding that it requires updating when revisions are posted online.

At a minimum the Laboratory Safety Manual binder must contain:

- Laboratory Safety Manual Introduction (this document)
- completed Laboratory Hazard Assessment and Control Form (HACF)
- completed Laboratory Health and Safety Orientation and Training Record for each person working in the laboratory including the laboratory supervisor
- completed site specific Laboratory Policies (Working Alone, After Hours Operation, Unattended Operations)
- applicable Standard Operating Procedures (SOPs)

DEFINITIONS

“Contractor” means an individual, corporation, or other entity who agrees to furnish materials to, or perform services for, the University for consideration.

“Employee” means an individual who is engaged to work for the University under an employment contract.

“Laboratory Personnel” means individuals who are authorized by the Supervisor or Manager to work in the laboratory.

“Laboratory Principal Investigator” is included in the definition of “Supervisor”.

“Manager” means an Employee who has management responsibility. For clarity, this term includes an academic staff member or a management and professional staff member who has management responsibility.

“OHSMS” means the Occupational Health and Safety Management System and includes all components (e.g. procedures, instructions, directives, programs, standards) of the OHSMS.

“Supervisor” means an Employee who supervises other Employees; it does not include a Manager.

“University” means the University of Calgary.

“Volunteer” means an individual who, on a voluntary basis, provides a service or materials to the University.

ABBREVIATIONS

Workplace Hazardous Materials Information System (WHMIS)