UNIVERSITY of GUELPH

Department of Biomedical Sciences

SAFETY MANUAL

For students and staff
September 9, 2009

Health and Safety

Before you begin work in the lab please be aware of the following:

1. **You will be required by the university to take a course in WHMIS (Workplace Hazardous Materials Information Service). A binder of MSD (Material Safety Data) sheets are stored in the lab with information on every chemical we use.**

2. **Upon your arrival in the lab you will be given a brief health and safety orientation. Please note the location of fire extinguishers, first aid kits, emergency spill kits, and emergency exits as well as emergency telephone numbers.**

3. **SOP's: Standard operating procedures are available for most lab procedures and it is your responsibility to be familiar with those which are relevant to your work. You may be required to sign documentation that you have read SOP's and received training. Relevant SOP's are located in the laboratory AND on the departmental web site: http://www.ovc.uoguelph.ca/biom/safety/**

4. **Appropriate PPE (personal protective equipment) must be worn at all times. Lab coats and proper shoes with toes enclosed are required everywhere in the lab. Eye protection, protective gloves, lab greens, coveralls and boots are available as required.**

Please be sure that you know the location of the following safety equipment

Exhaust hoods for volatile chemicals

Eye protection, thermal gloves and protective face mask

First aid kits

Eye wash stations and safety showers

Absorbent pillows and pads for liquid spills.

Neutralizing chemicals for solvent, acid or alkaline spills

Sharps Containers

Fire Extinguishers and the closest emergency exits

Departmental Health and Safety desk
Procedures for use of any specialized equipment

Materials Safety Data sheets (MSDS) are available for each chemical used in this lab.

Important Safety Rules

Lab coats and enclosed shoes will protect you and your clothing from chemical spills and biological or chemical contamination. These are required at all times in the lab. Appropriate gloves will protect your hands from chemicals, heat or cold as necessary. However, please be aware that vinyl or latex gloves may be permeable to some chemicals.

Gloves must be removed when you leave the lab and before touching doorknobs, keyboards, telephones, etc.

Lab coats, scrubs, greens etc are not allowed in the OVC cafeteria or anywhere off-campus.

Eye Protection:

Always wear eye protection (safety glasses) especially when working with

- toxic or corrosive chemicals (eg phenol)
- ultraviolet light
- liquid nitrogen
- homogenizers
- anytime a dangerous aerosol might be produced

Please note that contact lenses should NOT be worn in the lab.

Chemical Safety:

Chemicals are labeled and stored according to their level of hazard, e.g. flammable, reactive, corrosive, toxic or non-hazardous substances.

- Small volumes of volatile chemicals may be stored under the exhaust hood.
- Hazardous chemicals must be segregated or locked up depending on level of hazard
- No flammable liquids in standard refrigerators or freezers.
- Be aware of chemical incompatibilities. Acids and flammable liquids must be stored separately. Also, organic acids (eg acetic) must be separated from oxidizing acids (nitric, sulphuric etc). Oxidizing agents (eg peroxides, permanganate) must be separated from flammable chemicals.
- Hazardous waste must be properly disposed of – NOT down the drain or into waste bins. Properly labeled and documented waste will be collected by EHS.
- Mercury thermometers should not be used

Make sure that you have read the SOP for handling hazardous chemicals before attempting to weigh out toxic chemicals. Always read the MSDS for new chemicals or anything that you are not familiar with.

Eating or drinking anywhere in the lab is strictly forbidden.

Biosafety/Biohazard Control:
Please note that some areas of the department are designated as Biohazard Laboratories (Level 2) because they are licensed for work with human cell lines. Specific training is required and lab waste must be decontaminated before disposal. **Read SOP!**

Equipment Hazards:
Please be sure that you know how to use equipment safely. Examples of equipment where a user can sustain injury include:

- Syringe needles or scalpel blades
- Centrifuges
- Vacuum flasks
- Homogenizers
- Electrophoresis equipment
- UV lights – hoods or imaging systems
- Autoclaves
- Liquid Nitrogen tanks
- Power tools
- Any equipment with moving parts

Compressed gases:
Gas cylinders must be handled with great care and only by trained personnel!! **Read SOP!** Always use the correct regulator and ensure that cylinders are stored upright and restrained by suitable racks, stands or chains at all times.

Liquid Gases/Cryogenics:
Liquid Nitrogen hazards include:
High Pressure
Burns/Freezing of skin or eyes
Explosive shattering of material

Escape of large amounts of gases into the environment can be extremely dangerous in an enclosed environment since displacement of air (nitrogen or CO2) or flammable conditions (O2) can result.

Online resources:

http://www.uoguelph.ca/ehs/index.htm

http://www.ovc.uoguelph.ca/biom/safety

http://www.practicingsafescience.org/

http://www.labour.gov.on.ca/english/hs/ohsaguide/index.html

IN CASE OF ACCIDENT OR INJURY

If you should be injured while on the job, please seek first aid immediately. You should always be familiar with the location of the closest first aid kit as well as eye wash and safety showers.

An accident report must be filed **within 24 hours** of the incident occurring. Failure to do so could result in denial of coverage by Workers' Compensation and fines for the university. See your supervisor or Sally for the correct forms. In an emergency, a verbal report to your supervisor will allow him or her to report on your behalf.

The university emergency number is 2000 or 52000.

Do NOT call 911 directly as time may be wasted explaining your location to a dispatcher. The university police will ensure that the correct emergency personnel are directed to the proper location.

HEALTH

FRAGRANCES in the workplace: Many people have allergies and/or develop migraines when exposed to fragrances. Please do not wear perfumes, colognes, after-shave, or any scented products to work.

Vaccinations: If you frequently work with animals (other than mice) or if you are collecting tissues from the slaughterhouse on a regular basis, you should be vaccinated against Rabies. This can be arranged through employee health services. It is also recommended that you have a tetanus booster every 10 years; if you have not, please arrange for one through either your family doctor, or at Health Services

Please Note: The university provides frequent lab safety courses e.g. handling of gas cylinders, cryogenic liquids, radioisotopes, driving safety, animal handling. You are encouraged to register for any of these courses and ymay be required to take specific courses depending on your work.

Departmental Health and Safety Committees:
Under the Ontario Occupational Health and Safety Act, we are required to have a departmental health and safety committee composed of worker, management and student representatives. Please inform one of the members of this committee if you have any safety concerns.
Annual lab inspections are carried out by the departmental safety committee. These inspections are documented and copies are kept on file in the laboratory.

It is your right to work in a safe environment and it is your responsibility to report any unsafe conditions. Never hesitate to report any unsafe activities