

# EMPLOYEE SAFETY ORIENTATION HANDBOOK

## GROUNDS

*(Includes Campus Services, Grounds, &  
Recycling/Waste Management on St. George campus)*

Mississauga Campus      St. George Campus      Scarborough Campus  
**Office of Environmental Health and Safety**

**January 2017**

**Employee Name:** \_\_\_\_\_

**Supervisor Name:** \_\_\_\_\_

## EMERGENCY TELEPHONE NUMBERS

|   |  |
|---|--|
| <b>ALL EMERGENCIES - 24 HRS (Fire, Police, Ambulance)</b> - dialed from a campus phone  | <b>9-911</b>   |
| <b>St. George Campus</b><br><br>Campus Police<br>Manager, Grounds<br>Supervisor, Campus Moving<br>Supervisor, Grounds<br>Supervisor, Waste Management/Recycling | (416) 978-2222<br>(416) 978-2098<br>(416) 978-0955<br>(416) 978-2329<br>(416) 946-5711 |
| <b>Mississauga Campus</b><br><br>Campus Police  | (905) 569-4333   |
| <b>Scarborough Campus</b><br><br>Campus Police  | (416) 287-7333   |
| My Supervisor   |  |
| My Department Manager   |  |
| <b>City of Toronto (non-emergency)</b> – dialed from a campus phone   | <b>9-311</b>   |

### **In case of a fire:**

- 1) Pull nearest fire alarm
- 2) Evacuate the building. Do not use elevators.
- 3) Phone emergency from a safe place (9-911) then Campus Police:  
St. George: (416)-978-2222    UTSC: (416)-287-7333    UTM: (905)-569-4333

### **In case of an accident:**

- 1) Administer first aid if you are qualified to do so.
- 2) Phone emergency (9-911) then Campus Police:  
St. George: (416)-978-2222    UTSC: (416)-287-7333    UTM: (905)-569-4333
- 3) Notify your supervisor immediately.

## HEALTH AND SAFETY POLICY

The most current version of the Policy can be found on the Governing Council Website:  
<http://www.governingcouncil.utoronto.ca/>



UNIVERSITY OF  
TORONTO

OFFICE OF THE VICE-PRESIDENT  
HUMAN RESOURCES & EQUITY

University of Toronto

*Health and Safety Policy*

The University of Toronto is committed to the promotion of the health, safety and wellbeing of all members of the University community, to the provision of a safe and healthy work and study environment, and to the prevention of occupational injuries and illnesses.

The Governing Council, the President and all levels of management will work in consultation and cooperation with University employees, joint health and safety committees, students, contractors and visitors to ensure that the requirements of the Occupational Health and Safety Act and its regulations, other applicable legislation with supporting guidelines and procedures, and the University's Occupational Health and Safety Management System are fully implemented and integrated into all University work and study activities.

Where reasonable, the University will strive to exceed the legislated requirements by adopting the best practices available to protect the University community and to promote a positive health and safety culture. The University will work towards continuous improvement in its health and safety program.

Managers and supervisors, whether academic or administrative, will take responsibility and accountability for the health and safety of all workers (i.e., employees and certain others as set out in OHSA – Bill 18) under their direction and those workplaces under their charge. They will advise their workers of the existence of potential or actual workplace hazards, and will ensure that they work safely and in accordance with the Occupational Health and Safety Act and its regulations, and all applicable University policies and procedures. They will take every precaution reasonable in the circumstances for the protection of their workers.

All University workers, including faculty, librarians, and non-unionized and unionized employees, have some responsibility for ensuring health and safety in the workplace. Workers will work safely and in compliance with the Occupational Health and Safety Act and its regulations, and University policies and procedures. Workers will report all unsafe and unhealthy conditions and practices in the workplace to their immediate supervisors so that they may be promptly remedied.

Contractors, tenants and visitors at the University will comply with all relevant legislation, as well as University of Toronto policies and procedures.

The University is also committed to ensuring that health and safety is considered in all aspects of student life. Students are responsible for conducting themselves in a safe manner, and are required to comply with all relevant legislation, University policies and procedures.

The University's Framework on Off-Campus Safety addresses health and safety responsibilities for faculty, staff and students engaged in field research beyond their geographical boundaries of the University.

Individuals who fail to meet their obligations concerning health and safety may, depending on the circumstances, face appropriate disciplinary action, up to and including discharge.

The Vice-President Human Resources and Equity will provide quarterly reports on compliance with the Policy and its regulations and guidelines, as well as an annual report on health and safety.

Angela Hildyard  
Vice-President  
Human Resources and Equity  
January 25, 2016

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## **INTRODUCTION**

The Grounds department is committed to providing a safe and healthy work environment for their employees. The operation of these departments will ensure that the measures and procedures prescribed by the Occupational Health and Safety Act ("The Act") and its regulations as well as other relevant legislation concerning health and safety are complied with. This includes establishing and maintaining programs to identify and appropriately control workplace hazards; participating in joint health and safety committees to identify and address workplace hazards and workplace health and safety issues; providing appropriate tools and equipment; and providing suitable training to employees concerning workplace health and safety.

All employees of the University have a responsibility under the Occupational Health & Safety Act to work in compliance with The Act and associated regulations and to use or wear the equipment, protective devices or clothing that the University requires to be used or worn.

Employees, including supervisors, have an obligation to report any safety hazards or possible contraventions of The Act of which they are aware to their immediate supervisor, so that any safety hazards or contraventions can be corrected. All Grounds employees must accept their responsibilities concerning the provision of a safe environment in which to work.

The purpose of this handbook is to orient workers, particularly new hires, to the University's Health & Safety Policy, and to provide an overview of the health and safety programs and procedures that are provided, depending on the nature of the work, that an employee is expected to perform and the hazards that may be encountered. The employee's supervisor will ensure that appropriate training is provided to match the tasks assigned.

## **OCCUPATIONAL HEALTH AND SAFETY AT U OF T**

### **HEALTH AND SAFETY POLICY**

The University of Toronto Health and Safety Policy reflects the University's commitment to maintaining a safe and healthy environment for its employees and students. It is reproduced at the front of this handbook.

### **OCCUPATIONAL HEALTH AND SAFETY ACT**

The Occupational Health and Safety Act of Ontario is the main piece of legislation that protects workers against the health and safety hazards in their workplaces. The Act sets out the duties and responsibilities of all workplace parties, and sets minimum requirements for dealing with workplace hazards. The Act applies to all University employees, and a copy is posted in your workplace. Supervisors and workers should be familiar with the main provisions of The Act and the regulations that apply to their workplaces.

### **DUTIES AND RESPONSIBILITIES**

Each employee has some degree of responsibility for health and safety in the University workplace. This applies whether you are full-time or part-time, unionized or non-unionized, management or non-management.

The prime responsibility for health and safety lies with the **line of supervision**. This means that those who are responsible for managing or supervising are the ones who have the greatest responsibility for health and safety in the workplace. At the University, the line of supervision extends from your immediate supervisor to the President and Governing Council.

#### **Supervisor's Responsibilities**

Supervisors are responsible for the employees they supervise and for the workplaces they are in charge of. Your supervisor is required to:

- Take every reasonable precaution to protect your health and safety;
- Inform you about workplace hazards and how to protect yourself;
- Make sure that you work safely;
- Provide you with appropriate protective equipment, measures and procedures, and ensure that you use them.

#### **Worker's Responsibilities**

You also have important responsibilities for health and safety. You are required to:

- Work safely in compliance with The Act and with University requirements;
- Use or wear required protective equipment or clothing;
- Report workplace hazards (including near misses) or defects to your supervisor;
- Report any accidents or injuries promptly to your supervisor;
- Not remove or make ineffective any required protective device;
- Not use or operate any equipment, machine, or device unsafely.



## JOINT HEALTH AND SAFETY COMMITTEES (JHSC)

The University has established a number of local JHSCs made up of workers and management. As advisory bodies, committees are authorized by The Act to identify workplace health and safety hazards, and to recommend corrective actions to management. To do so, committee members meet regularly to discuss health and safety concerns and perform regular workplace inspections.

There are a number of individual JHSCs within the University. Get to know the committee and the committee members who represent you. Member's names and work locations are posted in your workplace.

## RIGHTS OF WORKERS

The Act gives employees the following rights:

- The **right to participate** in matters relating to workplace health and safety, either individually or through the health and safety committee.
- The **right to know** about hazards in your workplace. Your supervisor must tell you about such hazards and how to work safely.
- The **right to refuse unsafe work**. The Act allows you to conduct a work refusal if you believe that you have been assigned unsafe work.

In addition to the above, designated certified members on your JHSC also have **the right to stop work** in circumstances which they believe pose immediate and serious danger to a worker. For information on the rights and responsibilities of workers, supervisors and employers: [https://www.labour.gov.on.ca/english/hs/pdf/poster\\_prevention.pdf](https://www.labour.gov.on.ca/english/hs/pdf/poster_prevention.pdf)

## HEALTH AND SAFETY CONCERNS, AND WORK REFUSALS

If you have a health and safety concern regarding your workplace or the work assigned to you, discuss the matter with your immediate supervisor to try to resolve the problem. If it is not satisfactorily resolved, you may request your JHSC to investigate the concern.

At any time, you can refuse work that you feel is unsafe. In such a case, you must immediately advise your supervisor that you are refusing to work for health and safety reasons. Your supervisor is required to investigate the situation right away, in conjunction with you, and a worker member of your JHSC or a representative of your trade union. The Office of Environmental Health and Safety (EHS), will also be contacted for assistance.

While the investigation is underway, you may be assigned alternative work. The work under dispute may be assigned to another worker only if, in the presence of a committee member which represents the worker, this second worker is informed about the reasons for the work refusal.

After this investigation, if you believe that the work continues to be unsafe, you can continue to refuse to work. Inform your supervisor of this, and he/she will then call a Ministry of Labour inspector to investigate the matter.

## **ACCIDENT REPORTING**

Report any accident to your supervisor immediately, whether an injury occurs or not. Your supervisor will ensure that anyone hurt gets proper medical attention, that the accident is properly investigated, and that any hazards are dealt with.

Your supervisor is also required to submit an online accident report. Forms are available online:

1. Online Accident/Incident eForm for Employees:

<https://ehs.utoronto.ca/report-an-incident/online-accidentincident-eform-for-employees/>

Students of the University who also work for the University are considered employees if they are injured on the job. In these cases, the employee incident form should be completed. A copy of this form is automatically submitted to EHS and the WSIB Administrator in Health and Well-Being Programs and Services.

2. Online Accident/Incident eForm for Students, Contractors and Visitors:

<https://ehs.utoronto.ca/report-an-incident/online-accidentincident-eform-for-students-contractors-and-visitors/>

A copy of this form is automatically submitted to EHS and Risk Management.

## **BASIC HEALTH AND SAFETY AWARENESSTRAINING**

As of July 1, 2014, all employees must take the Basic Health and Safety Awareness Training as mandated by Ontario Occupational Health and Safety Act.

The training must be taken as soon as possible for employees. Employees in a supervisory position must take this training within one week of working as a supervisor.

There are several methods for taking this training. Your supervisor will work with EHS to determine the best method for providing this training to you.

## GENERAL SAFETY



It is important that everyone in the workplace, whether you are a supervisor or a worker, to follow safe work practices on the job. Your department is responsible for providing a safe workplace and in turn, you must work in a safe manner.

Although there are many types of hazards that may be present in your workplace, the number of injuries or accidents can be reduced by following basic safety guidelines.

- Check for hidden dangers when handling or moving equipment, furniture or other materials. Hidden objects on top of tall items of furniture, or sharp objects such as nails or staples are some of the common hazards.
- Check and inspect any equipment before you use it. Report any defects to your supervisor. Leave unattended equipment in a safe place. Remove the key (if any) and unplug the power cord.
- Work at a safe pace. Many accidents and injuries have been the result of hurrying through a task.
- Slips, trips and falls are one of the most common hazards in the workplace. Be cautious of wet, slippery or uneven areas as you work.
- Practice good housekeeping: keep work areas clean, ensure cords and hoses are properly wound and out of the way, put away equipment and chemicals when task is complete and clean up any spills immediately.
- Wash hands after handling and before you eat, drink or smoke.
- Use correct protective wear (gloves, safety glasses, etc.) for the job. Approved safety shoes **MUST** be worn at all times while working for the University during regular hours, off-hours or overtime.
- Do not mix cleaning materials unless permitted by instructions.
- Be prepared for any emergency. Know who to call. Know where the emergency equipment (eyewash station, first aid kit, fire extinguisher, etc.) is located. Know what to do in case of a chemical spill.
- Report any accidents, emergencies or any other unusual conditions at work to your supervisor immediately.
- The stress involved in dealing with customers and coworkers can take your attention away from the job at hand. Call your supervisor to handle issues with clients or coworkers.

## PANDEMIC PLANNING

The University is an open environment where many people come and go. Many of our employees work in public and have direct or incidental contact with the public. From time to time, public health issues, such as seasonal influenza or H1N1 influenza, may have an impact on our employees. During an outbreak, employees can visit the UofT Pandemic Preparedness website for more information:

[http://www.preparedness.utoronto.ca/Pandemic\\_Communicable\\_Diseases\\_Planning\\_and\\_Response.htm](http://www.preparedness.utoronto.ca/Pandemic_Communicable_Diseases_Planning_and_Response.htm)

### ***Prevention***

The following are general guidelines for protecting yourself during an outbreak. Each illness is different and during an outbreak, you may wish to contact Public Health (City of Toronto: 416-338-7600, City of Mississauga: 905-799-7700) or your doctor for more information.

- Clean your hands frequently with an alcohol-based hand sanitizer or soap and water. Here are guidelines on hand-washing from the City of Toronto: <http://www.toronto.ca/health/cdc/resources/index.htm>
- Practice cough and sneeze etiquette:
  - Cough or sneeze into your sleeve
  - Cover your mouth and nose with a tissue when you cough, sneeze or blow your nose
  - Put used tissues into the waste basket
  - Wash your hands with soap and water or hand sanitizer immediately
- Avoid touching your eyes, mouth and nose.
- Keep shared surfaces and items clean and disinfected (e.g. doorknobs). Use disinfectant wipes or your usual cleaning products. In addition, it's a good idea to place hand sanitizer near shared equipment so that users can clean their hands after touching or using this equipment.
- Maintain your normal activities.
- Stay at home if you have influenza-like symptoms. Influenza-like symptoms include fever and cough and one or more of the following symptoms: sore throat, muscle aches, joint pain, or weakness.
- Contact your doctor if you have concerns about your health.

## SMOKING AT THE UNIVERSITY OF TORONTO

The Smoke Free Ontario Act (SMOA) came into effect on May 21, 2006. Prior to the SMOA, smoking was already prohibited in all University buildings and while working (even working outdoors).

The SMOA bans smoking in enclosed public places and all enclosed workplaces, including but not limited to:

- Restaurants
- Schools
- Private clubs
- Sports arenas,
- Work vehicles
- Offices
- Entertainment venues
- Washrooms
- Lobbies
- Parking garages
- Trailers
- Loading docks
- Patios that have food and beverage service if they are either partially or completely covered by a roof

**No Smoking within 9 metres  
of Building Entrance or Exit**



Toronto Municipal Code Chapter 709



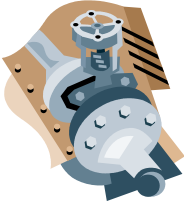
The ban in an enclosed workplace is in effect at all times even during off-hours when people are not working.

In addition, within the City of Toronto, city by-laws prohibit smoking within 9 metres of an entrance or exit of any building that is used by public. This includes offices and institutional buildings. For more information on the City of Toronto by-laws on smoking:

<http://www.toronto.ca/311/knowledgebase/65/101002526365.html>

Smoking is also prohibited within 9 metres of Designated Buildings on the Mississauga Camps. Signage is posted at these Designated Buildings.

## ASBESTOS



Asbestos is a general term used to describe a number of naturally occurring, fibrous minerals. Because of its strength, flexibility and ability to withstand high temperatures and chemicals, asbestos was commonly used in building materials in the past. Many University buildings built before 1980 contain some form of asbestos materials, such as:

- Sprayed asbestos fireproofing on structural steelwork in buildings
- Thermal insulation on heaters, boilers, pipes and other mechanical equipment
- Acoustic or decorative finishes on ceilings and walls
- Ceiling tiles and vinyl floor tiles
- The word 'friable' means the material can be crumbled, pulverized or powdered by hand pressure.

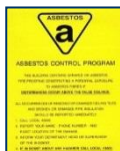
Asbestos-containing materials present a potential health risk when asbestos fibres become airborne and are inhaled into the lungs. Long term exposures have been associated with a variety of illnesses, including asbestosis, mesothelioma, and lung cancer.

Friable asbestos-containing materials, such as sprayed-on fireproofing or thermal pipe insulation, have a greater risk potential as damage to them can more easily result in release of fibres into the air. Non-friable asbestos-containing materials, such as ceiling tiles or vinyl floor tiles, present a risk when the fibres which are bound or locked into the product are released as a result of significant abrasion or damage to the product.

Any work involving asbestos-containing materials must be carried out in keeping with the University's Asbestos Management Program, as well as Ontario's occupational health and safety legislation.

- Workers may come into contact with asbestos-containing materials:
  - When moving boxes or shelving units. Asbestos-containing material debris may be present on boxes or shelves, or may be found in between shelves and the walls.
  - When moving laboratory equipment that may have asbestos-containing gaskets. Before you move the equipment, make sure the "Safe to Remove Tag" is completed (see section on "Safe to Remove Tag"), and ask your supervisor to check that any asbestos-containing gaskets have been removed.
- **Report the presence of any suspected asbestos-containing materials to your supervisor.** Stop any work in close proximity to such materials until a procedure is in place, or you have been otherwise advised by your supervisor.

- Staff who may come into contact with asbestos-containing materials in the course of their work must complete the online Asbestos Awareness training from EHS (<https://ehs.utoronto.ca/>). This course instructs participants on how to recognize materials that may potentially contain asbestos. Such training will be scheduled by your supervisor in conjunction.
- An inventory and building survey of each University building has been prepared. The inventory lists friable and non-friable asbestos containing materials and identifies those materials that are confirmed or suspected of containing asbestos. A copy of the inventory is kept on location in the building and is available to building occupants and JHSCs.
- Buildings and rooms with sprayed asbestos fireproofing are labeled with warning signs to indicate its presence.



Do not go above the ceiling space in these buildings. In these buildings, if you see a missing ceiling tile or a broken ceiling tile that has fallen to the floor, report it to your supervisor immediately. **Do not work through any debris that may have fallen from the ceiling.**

- If you accidentally damage materials you suspect may contain asbestos, stop working immediately and contact your supervisor.

## References:

1. University of Toronto Asbestos Management Policy and Program
2. University of Toronto Building Asbestos Inventory
3. Regulation respecting Asbestos on Construction Projects and in Buildings and Repair Operations, made under the Occupational Health and Safety Act.

## CRYSTALLINE SILICA

Crystalline silica is a naturally occurring mineral. It is found in many building and construction materials such as brick, mortar, cement, concrete, asphalt, and ceramic tiles. Silica-containing materials present a potential health risk when respirable-size crystalline silica become airborne and are inhaled into the lungs. Long term exposures have been associated with a variety of illnesses, including silicosis and lung cancer.



Some employees in the Grounds department grind sidewalks or other pathways to prevent trip hazards. Grinding can result in crystalline silica to become airborne.

### Prevention

- Workers who carry out this task are required to take silica awareness training
- A written procedure, listing out controls to take for minimizing exposure, including engineering, administrative and PPE controls, must be prepared prior to conducting this work.
- Personal protective clothing include a half-face (minimum) air-purifying respirator with P100/HEPA cartridges, Tyvek coverall, eye protection and disposable gloves. Hearing protection may be required if the equipment is loud.
- Use damp wiping or a HEPA vacuum to clean out
- Signs and barriers to keep members of the public at least 10 metres away
- Where possible pick times/dates where fewer people may be walking nearby (e.g. early in the morning)
- Standing upwind of the material to be grinded
- Dampen the material to reduce the airborne dust
- Where possible, use equipment with HEPA dust collection device.
- Decontaminating clothing by damp wiping or HEPA vacuuming before leaving the work area
- Double bagging waste and cleaning the outside by damp wiping or HEPA vacuuming
- No eating, drinking or smoking in the work area.
- Washing hands and face before eating, drinking or smoking.



## CHEMICAL HAZARDS



Chemicals and other hazardous materials used in your workplace may be harmful to your health and safety. Before you work with a chemical, you must first know how it can harm you and how you can protect yourself. Canada's Workplace Hazardous Materials Information System (WHMIS) legislation provides employees with information about the chemicals in their workplace through Labels, Safety Data Sheets (SDS), and Worker Training.

- WHMIS 1989 is being replaced with WHMIS 2015. During the 2-year transition period, you may see both systems. Here are some differences between the two WHMIS Systems:

| WHMIS 1989                              | WHMIS 2015  |
|---|---|
| 6 classes and 8 WHMIS Symbols           | 9 WHMIS pictograms, mainly diamond shaped except for the biohazard pictogram which may remain a circle. |
| Material Safety Data Sheets (MSDSs)     | Safety Data Sheets (SDS)  |
| MSDSs updated by supplier every 3 years | SDS updated by supplier when there is significant new data  |

- Training on chemical safety and WHMIS will be scheduled by your supervisor if you will be working in or around chemicals or other hazardous materials.
- A generic WHMIS training is available online on the website of Office of Environmental Health and Safety. Workplace specific WHMIS training will be provided by your supervisor.
- In order to work safely with a chemical product, you must first know what the product is, how it may harm you, and the right precautions to take in order to handle the chemicals safely.
- Always read the chemical container label (supplier or workplace label) and SDS before you use the product so that you know the hazards and proper handling procedures. You may also see the term Material Safety Data Sheets (MSDSs) which is the name for SDS under the old, WHMIS 1989 system.

- Recognize the WHMIS symbols, hazard classes and pictograms (see end of this section).
- Designated substances are regulated under the Occupational Health & Safety Act, and include asbestos, acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, lead, mercury, silica, and vinyl chloride.
- Use the proper personal protective clothing for the chemicals you handle.
- Be prepared for emergencies by knowing where emergency equipment (eyewash fountain, first aid kit, fire extinguisher, etc.) is located and how to use them.

### **Know the product!**

- Know about each product you work with and its potential hazards. Read the label, and consult the MSDS/SDS before you use the product. Know the specific hazard - is it flammable? Is it corrosive? How can it affect your health? Can you detect it by odour?
- Never handle chemicals unless you have been properly trained in how to use, handle, store and dispose them. Your supervisor will ensure that you receive such training.
- Understand the information about WHMIS. If you have any questions about WHMIS or the products you work with, ask your supervisor.

### **Label all containers!**

- All chemical products used should be in properly labeled containers. If you transfer chemicals to a second container, make sure that you attach a workplace label to it. This will let all workers know what is in the container. This will also reduce the chance that incompatible chemicals will be accidentally mixed together.
- Replace any damaged and illegible supplier labels with a proper workplace label.

### **Use proper procedures for handling chemicals!**

- When pouring or spraying liquid chemicals, use eye goggles to prevent any liquid from getting into your eyes. If some does splash into your eyes, flood the eyes with plenty of tap water for 15 minutes to wash out the chemicals. For further details, consult the University of Toronto Emergency Eyewash and Shower Standard.
- Practice good personal hygiene in order to avoid exposure by ingestion. Do not eat, drink, smoke or keep food in areas where chemicals are used or stored. Wash your hands before you eat, drink or smoke, and at the end of your shift.

- Good housekeeping leads to a safer workplace. Keep your work area clean and uncluttered. Store chemicals and equipment properly.
- Store chemicals properly. Secure the lids of containers when not in use. If they are accidentally knocked over, a secure lid will help prevent a spill. All stored chemicals must have labels identifying the product and the appropriate hazard warnings. To prevent dangerous mixing of incompatible products, cleaning agents like chlorine bleach should be stored as far away from other products like bowl cleaner.
- Obey all safety rules. Do not take shortcuts when using hazardous materials. Use chemicals only for the purpose they were intended.

### **Use proper personal protective equipment!**

- Use personal protective clothing and equipment as required for the job.
- Use safety glasses or goggles if there is any chance of getting chemicals in your eyes. For further details, consult the University's Protective Eye and Face wear Standard.
- Wear suitable gloves - use the proper type which will protect you from the specific chemicals you work with. Inspect the gloves before putting them on. A common complaint with cleaners is dermatitis which often results from chemicals being in contact with the skin. For further details, consult the University of Toronto Protective Glove Standard.
- Use an approved respirator that fits and protects you properly, as directed by your supervisor. Your supervisor will ensure that you are provided with a proper fitting respirator and that you receive proper training in using it. For further details, consult the University of Toronto Respiratory Protection Program.

### **Be prepared for any emergency involving chemicals!**

- Know who to call in case of an emergency.
- Know where emergency equipment (eyewash fountain, first aid kit, fire extinguisher, etc.) are located. Know what to do or who to call in case of a chemical spill:

St. George: (416) 978-7000 during business hours or (416) 978-2222 outside of regular business hours

UTSC: (416) 287-7333

UTM: (905) 569-4333

- Report any accidents, emergencies or any other unusual conditions at work to your supervisor.

### **Examples of Hazardous Chemicals used in Grounds**

The following table lists examples of some of the chemicals that are used by Grounds. Do not regard this as a complete list of harmful chemicals used in your workplace. Note that suppliers can change the ingredients in their products over time, and the hazardous properties of these products will also change.

| <b>Product</b>  | <b>Examples of Hazardous Ingredients</b> |
|---|--|
| Gasoline  | Benzene                                  |
| Windshield Fluid  | Methanol                                 |
| Degreasers and Detergents                               | Methyl Chloride<br>Perchloroethylene     |
| Liquid Nitrogen (transported across campus)             | Nitrogen                                 |
| WD 40 products  | Stoddard solvent<br>Petroleum base oil   |
| Oil and other Lubricants                                | See SDS                                  |
| Ethylene glycol   | Ethylene glycol (100% or solution)       |
| De-icer such as Rock Salt and Calcium Magnesium Acetate | See SDS                                  |

### **Working with Cryogenic Materials**

Cryogenic liquids are liquefied gases that are kept in their liquid state at very low temperatures. Examples of cryogenic liquids on University of Toronto campuses include liquid nitrogen and liquid helium.

### **What should I know about transporting cryogenic liquids?**

You may be required to transport cryogenic containers across campus. There are a few basic safety precautions that you should be aware of when you are dealing with cryogenic liquid containers:

1. Inspect the cylinder to ensure that it is in good condition. If the cylinder appears damaged, report it to your supervisor immediately.
2. Be very careful! Do not move a container by rolling it on its lower rim.
3. Always use a hand truck, cart, or other proper handling device. Use a strap to secure the container to the handcart.
4. Keep the cryogenic liquid containers upright at all times except for the minor tilting on the cart during transport.
5. If you are using an elevator to transport the cryogenic liquid, make sure there are no passengers and ensure that no passengers get on the elevator while the cryogen is being transported.
6. Do NOT get in the elevator yourself. Use service elevators that you can lock and send to the proper floor. Buildings with no service elevators may have specific procedures in place such as signage to warn the public.

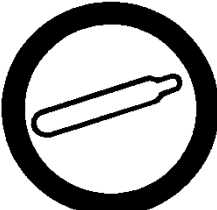

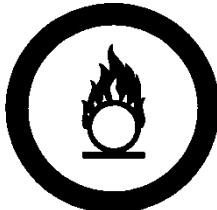

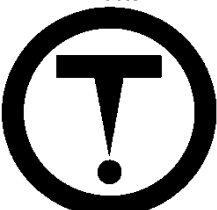



For further details, consult the University of Toronto Control Program for Liquid Cryogen Transfer Facilities and Standard for Inert Cryogenic Liquid Usage in Laboratory.

### **Transporting Ethylene Glycol**

Ethylene glycol is commonly used for heating and cooling systems. You may be asked to transport drums of ethylene glycol occasionally. Here some tips on moving these drums:

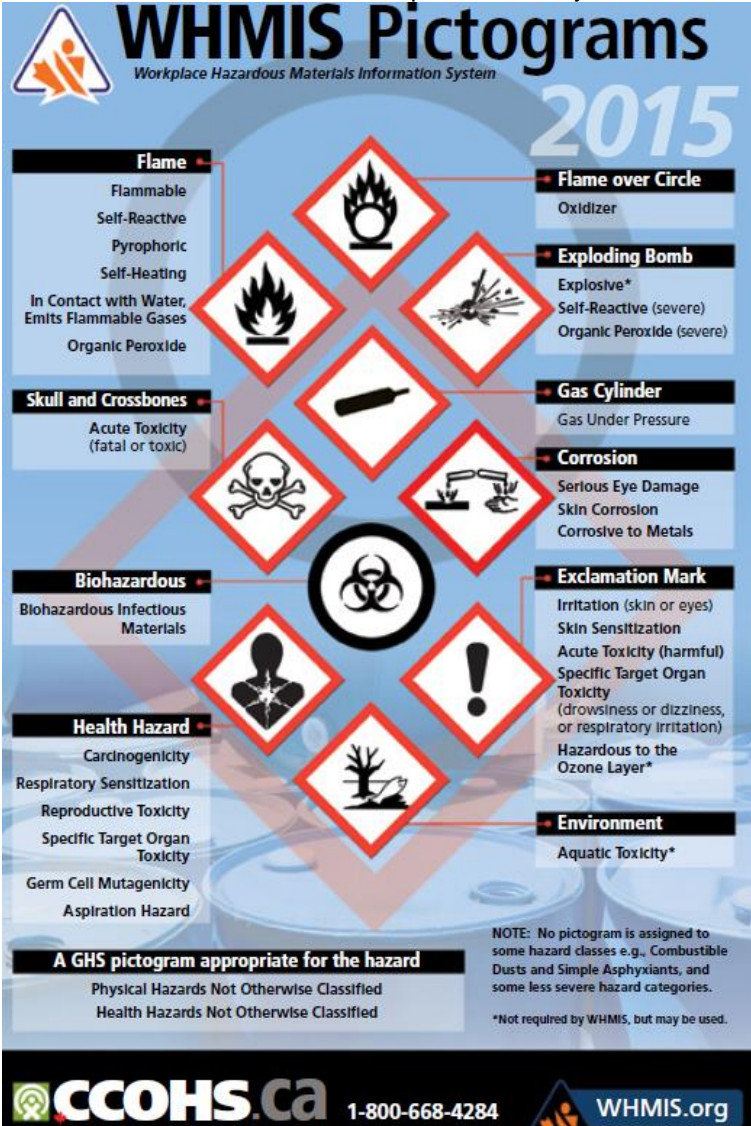
1. Review the MSDS/SDS which contains health and safety information. If you do not know where it is, ask the Building Engineer.
2. Visually inspect the drum before moving it. Make sure the container is properly sealed, that there are no leaks and the drum is in good condition.
3. As with cryogenic liquids, do not move the container by rolling it on its rims. Use a hand truck, cart or other proper materials handling device.

## WHMIS 1989 Hazard Classes and Symbols

|   |  |
|---|--|
| <p><b>Class A</b><br/>Compressed Gas</p>   | <p><b>Class B</b><br/>Flammable and Combustible Material</p>    |
| <p><b>Class C</b><br/>Oxidizing Material</p>   | <p><b>Class D</b><br/>Poisonous and Infectious Material:<br/><i>Division 1: Material Causing Immediate<br/>and Serious Toxic Effects</i></p>  |
| <p><b>Class D</b><br/>Poisonous and Infectious Material:<br/><i>Division 2: Material Causing Other Toxic<br/>Effects</i></p>  | <p><b>Class D</b><br/>Poisonous and Infectious Material:<br/><i>Division 3: Biohazardous Infectious<br/>Material</i></p>                     |
| <p><b>Class E</b><br/>Corrosive Material</p>   | <p><b>Class F</b><br/>Dangerously Reactive Material</p>   |

## WHMIS 2015 Pictograms

Source: Canadian Centre for Occupational Safety and Health



# WHMIS Pictograms

Workplace Hazardous Materials Information System

## 2015

**Flame**

- Flammable
- Self-Reactve
- Pyrophoric
- Self-Heating
- In Contact with Water, Emits Flammable Gases
- Organic Peroxide

**Skull and Crossbones**

- Acute Toxicity (fatal or toxic)

**Biohazardous**

- Biohazardous Infectious Materials

**Health Hazard**

- Cardiogenicity
- Respiratory Sensitization
- Reproductive Toxicity
- Specific Target Organ Toxicity
- Germ Cell Mutagenicity
- Aspiration Hazard

**A GHS pictogram appropriate for the hazard**

- Physical Hazards Not Otherwise Classified
- Health Hazards Not Otherwise Classified

**Flame over Circle**

- Oxidizer

**Exploding Bomb**

- Explosive\*
- Self-Reactve (severe)
- Organic Peroxide (severe)

**Gas Cylinder**

- Gas Under Pressure

**Corrosion**

- Serious Eye Damage
- Skin Corrosion
- Corrosive to Metals

**Exclamation Mark**


- Irritation (skin or eyes)
- Skin Sensitization
- Acute Toxicity (harmful)
- Specific Target Organ Toxicity (drowsiness or dizziness, or respiratory irritation)
- Hazardous to the Ozone Layer\*

**Environment**

- Aquatic Toxicity\*


NOTE: No pictogram is assigned to some hazard classes e.g., Combustible Dusts and Simple Asphyxiants, and some less severe hazard categories.

\*Not required by WHMIS, but may be used.



**CCOHS.ca**  
Canadian Centre for Occupational Health and Safety

**1-800-668-4284**



**WHMIS.org**

## PESTICIDES AT THE UNIVERSITY



In general, pesticides are NOT used on U of T property. Only under specific circumstances that require the approval of the Pesticide Committee could pesticides be applied. Only those licensed by the province may apply pesticides.

## RESPIRATORY PROTECTION



If you are required to use respiratory protection when working with hazards, you must be trained and fit-tested on the respirator provided to you. The University of Toronto's Respiratory Protection Program includes the following elements:

- Using only NIOSH (National Institute for Occupational Health in the US) – respirators
- A risk assessment to correct respirator for the
- Medical screening
- Training on the inspection, storage and on respiratory
- Training and fit-testing
- Respirator users must be clean shaven to ensure good seal



(National Safety and approved

identify the hazard.

selection, care, maintenance equipment. every 2 years

If you have any questions, please speak with your supervisor who can contact EHS for assistance.

## MOULD

Moulds are rapidly growing microscopic organisms found throughout the natural world. Mould spores will always be present in indoor environments, either brought in via ventilation, windows or on clothes and shoes. Moulds only need three conditions to grow: suitable temperature, moisture & substrate. In indoor environments mould will usually grow in areas of high humidity or in areas where the building materials became wet as a result of flooding or leaks. Common sites for mould growth inside buildings include



drywall, carpets, wood and wood products, ceiling tiles, cardboard, paper products and insulation.

Workers may be exposed to mould on water damaged building materials during building maintenance and repair operations.

The most common types of mould are generally not hazardous to healthy individuals, but some moulds may be hazardous to certain individuals. Health effects associated with exposure to mould include allergic reactions and toxic effects. The most common symptoms reported from exposures to mould in indoor environments include runny nose, eye irritation, cough, congestion, aggravation of asthma, headache and fatigue. Certain types of mould can cause infections in immuno-compromised individuals.

It is important for supervisors and workers to recognize visible mould growth and the conditions contributing to mould growth in order to take appropriate precautions.

Any employee who may come across mould in the course of his/her work should receive appropriate hazard awareness training, which will be scheduled by your supervisor in conjunction with the Office of Environmental Health & Safety.

All work involving mould must be conducted following the University of Toronto Procedures for Remediation of Fungi in Indoor Environments.



***Prevention:***

- Report any suspected mould contamination to your supervisor.
- Report any water intrusion (pipe leaks, floods etc.) to your supervisor immediately.

## **BIOLOGICAL HAZARDS**



Biological agents can take many forms, including: bacteria, viruses, fungi, parasite, and blood and/or body fluids or objects contaminated by body fluids (e.g. used needles – see section on Used Needles). The risk posed by a biological agent varies with the particular agent and the way in which it is used.

Biological agents are used in some laboratories at the University of Toronto. Health Canada has classified biological agents according to Risk Groups (1 to 4) and described corresponding Containment

Levels (1 to 4) required for work with these agents. Most University laboratories using biological agents operate as Containment Level 1 or 2 laboratories. We have Containment Level 3 laboratories at the University and these locations are secured against unauthorized entry and have special access and entry procedures.

Campus Services workers may occasionally be required to enter areas that were, or are, used as Containment Level 1 or 2 laboratories in order to move or remove furnishings and equipment. Campus Services workers may be required to pick up and transfer properly packaged waste or recyclable materials to a central collection location.

**Hazardous waste materials** must be labeled and packaged in a container that will allow them to be stored or transported without the danger of spillage, explosion or hazardous vapours escaping. The waste generator bears the primary responsibility for proper packaging and labeling. Labs using yellow bio-hazard pails must have a valid bio-hazard permit issued to them from the Environmental Health & Safety Office.

If you have any concerns regarding biological agents, contact Senior Biosafety Officer, Office of Environmental Health and Safety at 416-978-3981.

The Principal Investigator and the laboratory staff are responsible for performing any disinfection or sterilization procedure that may be required to render items safe for handling and removal from the laboratory. Employees should not touch any biological equipment until the appropriate and completed paper work (e.g. Safe to Remove Tag) is attached to the unit. Most laboratory wastes are not recyclable.

The University of Toronto manages the disposal of hazardous wastes through Environmental Protection Services (EPS) (Office of Environmental Health and Safety). The hazardous waste disposal procedures, as outlined in the University's Laboratory Hazardous Waste Management Manual, are mandatory. It is a serious offence to pour hazardous substances into the drainage system.

- Laboratory Supervisors/Principal Investigators must provide for and enforce the proper disposal of hazardous wastes.
- Laboratory workers must follow procedures related to the proper disposal of hazardous wastes.
- Biological waste generators are responsible for:
  - collection of biological waste (sharps, liquids, solids) in appropriate containers;
  - proper labeling (CL 2 & 3) and storage until collected by EPS;
  - For CL 1 using Not Marked autoclave bags, if applicable

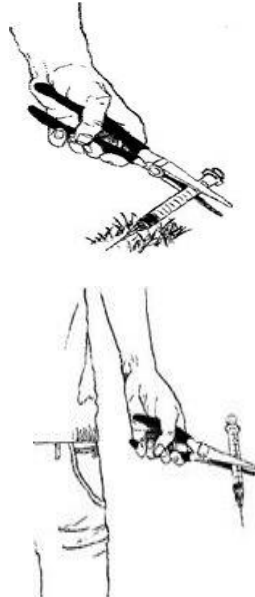
- Storage of Needle and Blade containers until collected by EPS.
- Appropriate **training** for employees conducting work involving potential exposure to biohazardous materials will be scheduled by their supervisor, in conjunction with the Biosafety Officer.

## USED NEEDLES AND GLASS STEMS

In the course of your work, Grounds staff may come across used needles and glass stems. Used needles should be treated as a biological hazard because they may contain infectious agents that can cause illness.

### Picking up Used Needles and Glass Stems

1. Contact your supervisor and obtain appropriate equipment (gloves, yellow biohazard container, tool to pick up the needle (see #3)).
2. Wear gloves (latex, vinyl or nitrile).
3. Use pliers or tongs to pick up the needle or glass stem. Avoid making any direct contact with any part of the syringe.
4. Hold the needle or stem tip away from you. Be careful not to prick yourself with the sharp tip.
5. Place the needle or glass tip carefully into the yellow biohazard container.
6. Throw away the gloves.
7. Wash the pliers or tongs used to pick up the used needle or glass stem.
8. Wash hands thoroughly.



### If you are injured by a used needle or glass stem

1. Allow the wound to bleed freely on your way to a sink.
2. Wash the wound with soap and water.
3. Apply disinfectant.
4. Report the incident to your supervisor as soon as possible.
5. Employee should be taken to the nearest emergency department.

6. Supervisor completes the online Accident/Incident eForm for Employees.

## **RADIATION HAZARDS**



Radioactive materials are used in many laboratories and on all campuses of the University. Radioisotopes present a potential hazard via ingestion and/or inhalation, even if you are not in direct contact with them. For these reasons, the use of radioactive materials is strictly controlled. Radioactive materials are limited to authorized individuals in permitted areas, and strict requirements are in place to control exposure due to radioactive materials. Examples of controls include purchasing approvals and inventory documentation, worker training, inspections, and radiation monitoring for both dose rates and contamination.

- Appropriate radiation protection training will be scheduled by your supervisor, in conjunction with the Radiation Protection Service.
- Grounds Services staff are trained to recognize the radiation warning sign (above).
- Grounds Services staff are trained to not touch or remove any materials labeled with the radiation warning sign.
- Report any spill or potential contamination discovered in any lab or work area to your supervisor immediately.
- All equipment, materials in work areas, and labs in which radioactive materials are or have been used must be decontaminated prior to maintenance, transfer or disposal being conducted.
- The Radiation Protection Service has prepared notices listing the steps taken to assure the radiation safety of such materials and labs.
- If there is any concern with such materials or labs, please contact: (416)-978-2028.

### **Prevention**

- Do not touch anything that has the radiation warning symbol.
- Do not eat, drink or smoke in labs.
- Be sure to wash your hands with soap and water after leaving areas with the radiation warning symbol, and before eating and drinking.

## ULTRAVIOLET (UV) RADIATION



Working outdoors can expose employees to ultraviolet (UV) radiation. Because sunlight is the main source of UV radiation, a worker can receive a high amount of UV exposure if they work outdoors for a prolonged period of time. Some UV exposure is beneficial to our health.

Short-term UV overexposure can cause:

- Darkening of the skin, burns, erythema (reddening of the skin).
- Watery eyes, blurred vision, and pain in the eyes.

Long-term UV overexposure can cause:

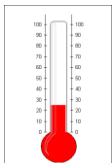
- Increased risk of skin cancer.
- Increased risk of cataracts.

### Prevention

When you work outside, make sure to take the following precautions:

- Avoid midday sun. If possible schedule outdoor work before 11:00 a.m. or after 2:00 p.m.
- Wear clothing that is tightly woven in order to block sunlight (e.g. mesh tank tops are not appropriate).
- Wear a hat that will shade your face, ears, and neck.
- Wear sunglasses.
- Apply a waterproof sunscreen on your exposed skin with a sun protection factor of 15 or greater. Use sunscreen that has both UVA and UVB protection.
- Take breaks indoors or in shady areas.

## HEAT STRESS



As Grounds employees, the majority of your time at work may be spent in hot environments, especially during summer months. Working in hot environments can induce heat stress in exposed individuals. When heat is combined with other stresses such as hard physical work, loss of fluids or some medical conditions, it may lead to heat related illness. It is important for supervisors and workers to recognize the conditions that can lead to heat stress and to ensure that appropriate controls are taken to minimize such effects.

Potential health problems associated with prolonged work in hot environments include:

**Heat Exhaustion:**

- Heat exhaustion is a milder form of heat-related illness that can result after several days of exposure to high temperature, from loss of fluids through sweating when worker has failed to drink enough fluids or take in enough salt or both.
- Signs and symptoms include weakness, visual disturbances, dizziness, intense thirst, headaches, nausea, vomiting, diarrhea, breathlessness, muscle cramps, tingling and numbness of the hands and feet, and palpitations (feeling irregular heartbeats).
- The affected worker should rest in a cool place and drink cool water. Severe cases involving workers who vomit or lose consciousness may require longer treatment under medical supervision.
- If left untreated, heat exhaustion may progress into heat stroke (see next page).

**Heat Cramps:**

- Sharp muscle pains that result from a failure to replace the body's salt that is released through the sweat.

**Heat Rashes:**

- Tiny red spots on the skin that can cause a prickling feeling during heat exposure.
- Caused by humid environments where sweat is not easily removed from the skin, leaving it continuously wet.
- Can be prevented by resting in a cool place and allowing skin to dry.

**Heat Syncope:**

- Brain does not receive enough oxygen because the blood pools in the extremities in an effort to cool the body.
- May be a problem for individuals not used to working in the heat who are immobile and standing.
- The skin may appear pale and sweaty but is generally moist and cool. The pulse may be weakened, and the heart rate is usually rapid. The body temperature is normal.

**Heat Stroke:**

- It is the most severe amongst heat-related syndromes. Heat stroke occurs when heat exhaustion is left untreated and the victim's core body temperature continues to rise as a result of failure of the body's internal mechanism to regulate its core temperature
- Signs include hot skin that is dry (due to failure of sweating); mental confusion, complete or partial loss of consciousness
- Can be fatal and requires immediate first aid and medical attention

Appropriate training will be scheduled by your supervisor in conjunction with the Office of Environmental Health and Safety.

### **Prevention:**

In hot environments:

- Follow the standard operating procedures if available.
- Work at a reasonable pace and take frequent breaks.
- Thirst is a delayed response. By the time you feel thirsty, your body has already undergone some level of dehydration. Drink 1 cup of cool water every 20 minutes.

Report any conditions that may lead to heat stress (e.g. high heat, high humidity) to your supervisor.

### **References:**

- 1) Occupational Health and Safety Act of Ontario
- 2) University of Toronto Control Program for Working in Hot Environments

## **COLD ENVIRONMENTS**



As Grounds employees, a large part of your work takes place outdoors. During the wintertime, you will be working in cold environments for possibly long periods of time. Two types of cold hazards are hypothermia and frostbite.

### **Hypothermia:**

- Results from the cooling of the deep inner body to a temperature below 34.5°C because of prolonged exposure to the cold
- Can be fatal
- Victims lack energy, become confused, and make little effort to stay warm
- Victims should be immediately warmed; wrap them in blankets and move them to a warm room. Body heat (from cuddling) is the most effective way to warm a hypothermia victim.
- Severe cases of hypothermia may warrant immediate medical care
- \*\* Alcohol does not increase a person's tolerance to cold. Consuming alcohol *increases* the risk of hypothermia!

### **Frostbite**

- Results in freezing of the body from extremely cold temperatures, or contact with extremely cold metallic objects

- When the wind chill temperature is -32°C or lower, the skin should not be exposed for more than a few minutes.

## Prevention

- For temperatures below 0°C, metal bars and handles should be covered by thermal insulating material. In addition, employees should wear their gloves/mittens.
- Wearing layers of dry, lightweight, loose fitting clothing provides greater protection from the cold than simply wearing one thick layer of clothing.
- Wear waterproof clothing for working in wet conditions.
- Eye protection should not fog or frost from exhaled moisture. Separate your eye protection from your nose and mouth.
- Felt-lined, rubber-bottomed, leather-topped boots with removable felt insoles are the best choice for working in the cold.
- Almost 50% of our body heat is lost through the head when the rest of the body is covered. The head should be covered with a liner under a hard hat, or with a wool cap.

## SEVERE WEATHER

Grounds employees spend a large amount outdoors as part of their job. From time to time, weather conditions outside are severe enough to affect working conditions (e.g. tornado warnings, thunder/lightning storms, blizzards). During these severe weather conditions, extra precautions should be taken. Workers should openly discuss these concerns with their supervisors. Where necessary, supervisors and managers should consider alternate work until the weather improves.

## Examples of Work/Tasks that can be affected by Severe Weather Conditions:

| Type of condition                                  | Work / Task Affected or Hazard  |
|--|---|
| Reduced visibility<br>(e.g. snow, rain, fog, etc.) | Driving (cars, vans, tractors, etc.)  |
| Thunder or lightning storms                        | Using metal objects /equipment<br>Using electrical equipment  |
| Slippery conditions<br>(e.g. snow, ice, rain)      | Slippery surfaces<br>Reduce ground visible (slip/trip hazards)  |
| Wind   | Flying objects, debris<br>Harder to control objects during materials handling, especially large or flat objects |
| Cold   | Loss of dexterity, frostbite, hypothermia   |



|      |  |
|------|--|
|      | Also refer the Cold Environment section for more information   |
| Heat | Skin burns, heat rash, heat syncope, eat exhaustion, heat stroke.<br>Also refer the Heat Stress section for more information |

### What to Do During a Lightning Storm?

- Stay away from trees and water as they attract lightning.
- If you are on a roof or ladder, get down to the ground.
- Get indoors as quickly as possible. Safely shutdown any electrical equipment you are working with and leave the workplace in a safe condition.
- Do NOT resume outdoor work until 30 minutes after the last audible thunder or visible flash of lightning.

### INSECT BITES AND STINGS

As Grounds employees, you may be exposed to various insects. These insects may bite or sting humans with varying consequences.

Two types of bites and stings exist -- non-venomous and venomous.



Non-venomous insects bite and normally inject anti-coagulant saliva in order to feed on your blood. Symptoms of non-venomous bites include:

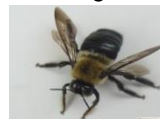
- Itching
- Mild swelling or redness

Examples of non-venomous insects include:

- Mosquitoes (for more information about mosquitoes and West Nile Virus, see section on West Nile Virus)
- Fleas
- Lice
- Ticks (e.g. Lyme Disease – symptoms include fatigue, chills, fever, headache, muscle and joint pain, swollen lymph nodes. See section Lyme Disease)

Venomous insects sting as a defense mechanism, injecting toxic and painful venom through their stingers. Symptoms of venomous stings include:

- Itching
- Pain
- Allergic reactions are common
- Potentially severe swelling or redness



Examples of venomous insects include: bees, wasps, yellow Jackets

### **Prevention:**

To reduce exposure to biting and stinging insects:

- Use insect repellent. In addition to protecting against mosquitoes, the application of an insect repellent will also protect against bites from black flies, deer flies and ticks. Insect repellents are effective and safe when used as directed. Read the entire label before applying repellent. Make sure to wash the insect repellent off skin when protection is no longer needed.
- Minimize the use of scented products that may attract insects to you.
- Wear appropriate protective clothing.
- Be aware of nests, and avoid disturbing them.
- Always consult a pest removal professional if a stinging insect's nest must be removed from a work area.

## **WEST NILE VIRUS**



### ***What is West Nile Virus?***

West Nile Virus (WNV) is a mosquito-borne virus that infects birds, some animals and humans. The risk of infection is low, and less than 1% of people infected become seriously ill.

### ***What are the symptoms?***

The majority of people infected with WNV show no symptoms. About one in five people infected with WNV have:

- fever
- headaches
- body aches
- skin rash
- swollen glands.

Symptoms usually occur 3 to 15 days after being bitten by an infected mosquito. Those over the age of 55 and people with compromised immune systems are at higher risk of illness. Symptoms of severe infection include:

- stiff neck
- confusion
- severe headache
- sudden sensitivity to light

Anyone suffering extreme swelling or infection from a mosquito bite, or any of the above symptoms should seek medical attention.

## Prevention

- Protect yourself from mosquito bites
- Stay indoors at peak mosquito biting times (dawn, dusk, and early evening)
- Wear light colored, long-sleeved shirts and pants, shoes and socks when you are outdoors.
- Use insect repellents containing DEET on exposed skin if working in areas where mosquitoes are likely to be found (woody areas, near ravines, damp areas). Take care to wash your hands after applying the repellent.

## Lyme Disease (Ticks)

### ***What is Lyme Disease?***



Lyme disease is an infection caused by the corkscrew-shaped bacteria, *Borrelia burgdorferi*. In Ontario, these bacteria are spread by the bite of blacklegged ticks (formerly called deer ticks), *Ixodes scapularis*. There are several types of ticks but only blacklegged ticks can spread Lyme disease. The blacklegged tick can be found sporadically throughout the province. In Ontario, black legged ticks are commonly found in rural

areas such as provincial and national parks. Within the City of Toronto, they have been found in Morningside Park, Cedar Ridge Park and Rouge Park.

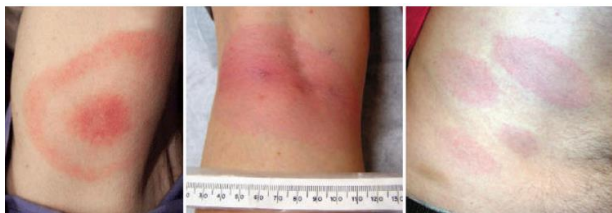
Ticks are closely related to spiders. They are typically small when unfed, (1 to 5 mm in length). They cannot fly and they move quite slowly. Ticks usually come in contact with people or animals by positioning themselves on tall grass and bushes. They may take several hours to find a suitable place on the host to attach to feed.

Most tick bites are painless. The majority of bites will not result in disease because most ticks are not infected with the agent of Lyme disease. Even with a bite from an infected blacklegged tick, there is only a small chance of getting Lyme disease. Ticks feed on blood by inserting their mouthparts (not their whole bodies) into the skin of a person, or an animal. Ticks feed slowly and their body gradually enlarges as it feeds, making it more visible. It usually takes from 3 to 7 days for a blacklegged tick to take a complete blood meal.

### ***What are the symptoms?***

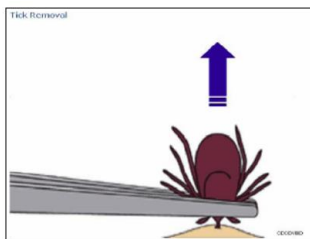
Early symptoms of Lyme disease usually occur within one to two weeks, but can occur as soon as three days or as long as a month, after a tick bite. If you develop: fever, headache, muscle and joint pains, fatigue and a skin

rash, especially one that looks like a red bull's eye (called *erythema migrans*), promptly seek medical advice. It is important to tell your doctor when and the geographical location of where you were bitten by a tick. Not all patients with Lyme disease will develop the bull's eye rash.



### **What should I do if I find an attached tick?**

- Prompt removal of ticks from your skin will help prevent infection, since transmission of the Lyme disease agent usually requires the tick to be attached for more than 24 hours.
- Using fine-tipped tweezers, carefully grasp the tick as close to your skin as possible. Pull it straight out, gently but firmly.
- Don't squeeze it. Squeezing the tick can cause the Lyme disease agent to be accidentally introduced into your body.
- Don't put anything on the tick, or try to burn the tick off.
- After the tick has been removed, place it in screw-top bottle (like a pill vial or film canister), and take it to your doctor or local health unit. They can send it to the Ontario Public Health Laboratory for identification. Establishing the type of tick may help to assess your risk of acquiring Lyme disease.
- It is important to remember where you most likely acquired the tick. It will help public health workers to identify areas of higher risk.
- Thoroughly cleanse the bite site with rubbing alcohol and/or soap and water.



### **Prevention**

- Wear light-coloured clothing. It makes ticks easier to see and remove before they can attach to feed.
- Wear long pants and a long sleeved shirt, closed footwear and socks.

- Tuck your pants into your socks.
- Use a tick repellent that has "DEET" (following the manufacturer's directions for use). Apply it to your skin and outer clothing. Avoid your eyes and mouth, as well as cuts and scrapes.
- If you frequent the areas where blacklegged ticks may be present, examine yourself thoroughly for ticks at the end of the visit. Pay special attention to areas such as groin, scalp and armpits. If required, use a mirror to check the back of your body or have someone else check it.

## BEDBUGS

### What are bed bugs?



Bed bugs are insects that, as adults, have oval-shaped bodies with no wings. They prefer to feed on human blood. Prior to feeding, they are about 6 mm long and flat as paper. After feeding, they turn dark red and become bloated. Eggs are whitish, pear-shaped and about the size of a salt or rice. Clusters of 10-50 eggs can be found in cracks and crevices.

### Can I get sick from bed bugs?

There are no known cases of infectious disease transmitted by bed bug bites. Most people are not aware that they have been bitten but some people are more sensitive to the bite and may have a localized reaction. Scratching the bitten areas can lead to infection.



### Where can bed bugs be found?

Bed bugs prefer dark areas. They feed at night and hide during the day (90% of their life is spent in hiding areas). They do NOT fly or jump and are often carried on objects such as furniture and clothing. Examples are mattresses, linen, cushions, curtains, rugs, edges of carpets, dust covers and couches. They can also be found in cracks in the bed frame and headboard, cracks in plaster, in drawers, behind baseboards and in telephones, radios and clocks.

### Prevention:

1. If you are asked to move items like the ones listed above, perform a visual inspection of the item prior to moving it. Bed bugs and their eggs are large enough to be seen with the human eye. Bed bugs may also leave small brown-coloured feces stains.
2. After the move, workers should inspect their own clothing, shoes, hat, etc.

***If you do see evidence of bed bugs, do not touch the items and contact your supervisor immediately. Arrangements will be made to treat and clean the items by the property manager.***

**If bed bugs are discovered AFTER you have made touched the item, follow these precautions:**

1. **If the clothing will be thrown away:** Seal in sturdy plastic bags (double bag) and keep them in secure place until they can be disposed of.
2. **If the clothing will be kept:** Wash clothes in hot water and then dry on high heat for at least 30 minutes. If it is not possible to wash the clothes immediately after, following Step 1 until they can be washed.
3. Shoes should be carefully inspected and dispose of if needed.
4. Wash your hands, face and other exposed skin with soap and water.

**Resources:** Visit the City of Toronto website on bedbugs or contact the City of Toronto website at 416-338-7600

<http://www.toronto.ca/health/bedbugs/factsheets.htm>

## **URBAN WILDLIFE ON CAMPUS**

Grounds employees may encounter a wide variety of animals and birds on our campuses. Common examples include dogs, cats, squirrels, chipmunks, raccoons, mice, rats, ducks, geese, rodents, skunks, foxes, possums, coyotes, groundhogs bats and deer.

Caution must be exercised when in situations dealing with animals. Ground employees may be involved in picking up deceased animals and bird or come in contact with bird and animal feces. Some animals may carry disease. It is rare for diseases from wild animals to be spread to humans but nevertheless, please review the sections below on preventive measures. For more information on how to deter and specific situations involving wildlife, please visit the City of Toronto's Animal Services website:

<http://www1.toronto.ca/wps/portal/contentonly?vgnextoid=a5737729050f0410VgnVCM10000071d60f89RCRD>

## FECES AND DROPPINGS



Ground staff may also come across feces and dropping from humans, animals, birds and bats. Precautions should be taken to reduce the risk of disease transmission. Some examples of illnesses that can be acquired are reviewed below.

### Health Hazard

#### 1. Histoplasmosis

Histoplasmosis is an infectious disease caused by breathing in spores of a fungus called *Histoplasma capsulatum*, which are found in bird manure, bats and bat manure. Birds do not become infected and fresh bird droppings are at a low risk of the fungus; it is the older bird droppings which may become infected with the fungus.

Histoplasmosis affects the lungs. The majority of people do not have any symptoms but where symptoms occur, they include: fever, chest pain, dry cough, headache, loss of appetite, shortness of breath, joint or muscle ache and chills. These symptoms are similar to those for the flu and a chest X-ray is needed to differentiate this disease from the flu.

#### 2. Cryptococcus neoformans

This is a fungus that grows in dry bird manure that is NOT in direct sunlight. It is commonly associated with pigeons but can be found in droppings from other types of birds and from bats. If inhaled, this fungus can cause a respiratory infection called Cryptococcosis.

#### 3. Baylisascaris infection



Baylisascaris is an intestinal roundworm that develops in raccoon intestine. The roundworms release eggs that are passed in to raccoon feces. Eggs can infect animals and humans, becoming infectious 2-4 weeks after its released. The eggs are also very resilient and can survive for years in the feces. Symptoms in humans include nausea, tiredness, liver enlargement, loss of coordination, lack of attention to people and surrounds, loss of muscle control, coma and blindness.

#### 4. Hantavirus

Hantavirus infection is caused by a virus that is found in certain rodents. The most common rodent that transmits the disease is the deer mouse. Other disease carriers include cotton rats, rice rats, and the white-footed mouse.



Deer Mouse

Although infected deer mice have been identified in both urban and rural areas across North America, the chances of humans contracting the disease is low. Workers may come into contact with infected rodents in rural and remote areas such as Hart House Farm, but again, the chance of coming into contact with infected rodents on the main campuses is low. The disease is spread when infected urine, droppings or saliva are dried up, causing virus-containing droplets to be released into the air.

The Hantavirus infection is known as *Hantavirus pulmonary syndrome* (HPS). Early symptoms of HPS include fatigue, fever, and muscle aches. There may also be headaches, chills, dizziness, nausea, vomiting, diarrhea, and abdominal pain. Late (within four to ten days after the initial phase of infection) symptoms may include coughing and shortness of breath.

#### Prevention

The most effective method is to prevent birds and rodents from roosting and nesting in the area by sealing entry points into the area and eliminating sources of food. Other forms of pest control such as traps, ultrasonic devices and chemical repellants are available in the market. Consultation with a pest control specialist may also be helpful. Recommended procedures for cleaning up feces are:

5. If cleaning large amounts of feces indoors (e.g. attic spaces, crawl spaces, prior to clean-up, ventilate the space by opening the doors and windows for at least 30 minutes to allow fresh air to enter the area. Use an exhaust fan or cross ventilation if possible. Leave the area until the airing out period is finished.
6. After the venting is complete, if there is a potential to contaminate the ventilation inlets or outlets in the space during the cleaning, seal these inlets and outlets before cleaning starts.
7. At minimum, wear disposable gloves (e.g. rubber, latex, vinyl) and eye protection. Additional PPE may be recommended if cleaning-up large amounts of feces or droppings: disposable coveralls with head covering, disposable boot covers or rubber boots, half-face respirator with HEPA (high efficiency particulate air) filters and eye goggles.
8. Spray droppings or contaminated materials until it is moist with a bleach solution\* (1 part bleach, 10 parts water). Allow this disinfecting solution to soak in for 5 minutes.



9. Shovel or scoop droppings or place contaminated materials into a plastic bag. Use a scrubbing brush or scraper as required.
10. Double bag waste materials. Do not dry sweep or use compressed air to clean feces.
11. Depending on the level of contamination, it may be desirable to HEPA vacuum the surface before applying disinfectant in the next step.
12. Disinfect the surface again using the bleach solution. Thoroughly clean any re-usable PPE, tools and equipment with the bleach solution.
13. Once you have removed and cleaned the gloves, wash hands thoroughly with soap and water.

\*When using or mixing chemicals, ensure that the MSDS or SDS is available. Review manufacturer information on the label or MSDS/SDS before handling.

## **DEAD ANIMALS AND BIRDS**

Care should be taken when handling dead animals and birds to prevent the spread of disease.

### **Before handling a dead animal**

1. Inform your supervisor of the finding.
2. Confirm the animal is dead by prodding with a long-handled tool.
3. Injured or dying animals may show aggressive behaviours. Do NOT attempt to catch the animal. Call your supervisor, Campus Police and your local Animal Services Centre:
  - City of Toronto (St. George and Scarborough Campuses): 416-338-7297
  - City of Mississauga: 905-896-5858

### **Collecting dead animals**

If the animal is too large for you and your co-workers to reasonably handle while maintaining minimal contact, do NOT attempt to handle it. Contact your local Animal Centre (see above). If the animal is small and can be easily handled, use the following procedures:

1. Wear thick, gauntlet-style (covers your forearms) rubber gloves. If your clothes or other body parts are likely to contact the dead animal, wear disposable coveralls.
2. If possible, use a tool such as a shovel to pick up the dead animal or bird. Avoid directly touching the animal with your hands as much as possible. Do NOT allow contact with your bare skin.

3. Place the dead animal in a plastic garbage bag and double bag it. Label the bag.
4. Call your local Animal Centre (see above) to arrange for pick up.
5. Keep the dead animal in a safe place (unlikely to be disturbed by others) until it can be picked up by your local Animal Centre.

### **After handling the dead animal**

1. Dispose of gloves and if applicable, coveralls. Double bag this waste.
2. Wash your hands with soap and water.
3. Disinfect any re-usable tools with a freshly made solution of bleach and water (9 parts bleach, 1 part water). NOTE: Bleach is corrosive and eye protection and gloves should be used during the cleaning. Review MSDS or SDS prior to use.

### **Dead birds and West Nile Virus**

Birds may carry West Nile Virus. For more information, see section on West Nile. You can also contact your local Public Health office:

- City of Toronto 416-338-7600
- Peel Region Public Health at 905-799-7700

## **SUBSTANCES FROM TREES AND PLANTS**

Certain plants and weeds carry substances that may cause irritation and dermatitis to your skin upon contact. The chance of coming into poisonous plants such as Poison Ivy on the city campuses is negligible. You may come into contact with such substances while working in rural areas such as Hart House Farm, however.



For detailed information about various plants, contact the *Canadian Poisonous Plant Information System* with the Department of Agriculture and Agri-Food and Canadian Biodiversity Information System. Their website can be found at:

[http://www.cbif.gc.ca/pls/pp/poison?p\\_x=px](http://www.cbif.gc.ca/pls/pp/poison?p_x=px)

### **Prevention**

The best way to prevent you from contact with poisonous plants is to use gloves and clothing as a barrier. Note that barrier creams will not provide you with protection from contact with poisonous plants.

Other ways to protect you from contact with poisonous plants include:

- Destroying poisonous plants when you notice them. Do not burn the plant, because the smoke may be toxic to humans and animals.

- Washing and scrubbing areas of the body that came into contact with a poisonous plant.
- Washing clothes that have been in contact with a poisonous plant.

## STINGING NETTLES



Stinging nettles are a perennial plant that grows 1-2 metres tall. There is a long history of use as medicine, food and fibre. However, the plant also have stinging hairs on the leaves and stems. Contact with these hairs can result in a tingling or painful rash. If you had direct skin contact with this plant, wash your hands immediately and **AVOID rubbing your eyes.**

If you think you have a rash due to exposure to this plant, report it to your supervisor right away. You should also contact your family physician for treatment.

## POWERED EQUIPMENT AND HANDTOOLS

As part of your job you will be using many different types of power tools, each with specific hazards and precautions that must be taken. Below are examples of equipment with which you will come into contact, and some of the safety precautions that you can take when you work with them.

### General Safety Tips for All Equipment

Acquire appropriate training before using any equipment and tools.

- Use the right equipment for the job. Inspect equipment for damage before use. Check to make sure guards in place.
- Read and follow manufacturer's operating manual.
- Choose equipment that fits your body size.
- Always keep your hands and feet away from blades and cutting heads until the rotations come to a complete stop.
- Use both hands on the equipment handles, using a firm grip.
- Be aware of how you carry your equipment so that no one is jabbed or poked by it.
- If attachments are required, use only the approved ones for particular equipment. Try to keep your wrists straight -- this will help to avoid injuring muscles and tendons.

- Use machinery that has *roll-over protection* and *safety belts*.
- Turn the power OFF if you need to clean or walk away from your equipment.
- Drive slowly and carefully, especially when you are on public roads.
- Always wear brightly colored vests so you are visible to other drivers.
- To protect your head from low tree branches or falling objects, wear a hard hat.
- To protect your eyes from debris propelled by equipment, wear approved safety glasses that fit you properly. Remember that regular prescription glasses and contact lenses are not adequate protection for your eyes.
- To protect your feet from blades and heavy equipment, wear approved safety boots.
- To protect your ears from noisy equipment, wear appropriate hearing protection.
- Confirm and clearly identify all overhead and underground utilities.
- Never work with your back to traffic when working outdoors.
- When using hand tools such as screwdrivers, utility knives, etc., force should be applied away from the body.
- If you are unfamiliar with a particular tool or equipment, ask your Supervisor for instructions.

## **Basic Electrical Safety Tips**

The electrical current in our daily environments has enough power to cause death by electrocution. Injuries resulting from contact with electrical currents include electrocution, electric shock, burns, and falls.

- Inspect power cords and plugs for damage on daily basis.
- Never break off the third prong on a plug! Replace any broken 3-prong plugs and make sure the third prong is properly grounded.
- Never use extension cords as permanent wiring!
- Switch off all tools before connecting them to a power supply.
- Unplug electrical tools after you turn them off. Turn off equipment by switch, not by plugging or unplugging.
- Do not use electric tools in wet conditions or damp locations unless the tool is connected to a ground fault circuit interrupter (GFCI).
- Turn off and unplug all tools before you clean them.
- Do not use electrical equipment or tools in areas with explosive vapours or gases.
- Never touch a downed wire.
- Turn off and unplug the equipment before changing attachments.
- Keep power cords clear of equipment during operation.
- Do NOT plug several power cords into one outlet.
- Roll up cord once task is complete.

## **Repairs**

- Do NOT use damaged or defective equipment.
- Repairs should be made by a qualified repair person.
- Contact your supervisor immediately when equipment is damaged or not working properly.

## **General Safety for Working on Slopes**

In some situations, Grounds employee may be working on slopes that are slippery and using heavy equipment that have the potential tip over. Here are some tips for preventing an incident:

- Review manufacturer manual: know the maximum angle, know the recommended direction on slopes. Depending on the equipment, the recommended direction may be up/down OR across. Do not assume.
- Slow down and use extra care.
- Before using ride-on equipment, check the slope for ground quality.
- Do NOT stand or position yourself downhill from a heavy piece of equipment. If the equipment shifts or rolls over, you will be pinned under it. Be aware of equipment that may be top-heavy (tipping over).
- If you can't back up a hill, it's too steep and should not mow it.
- If you have any concerns, report it to your supervisor before attempting to do it.
- Don't mow near steep drop-offs, ditches or embankments.
- If equipment (e.g. push mower) goes backward and over your feet, it could injury your foot. Always wear CSA –approved safety shoes.

## **Checking and Changing Hydraulic Oil**

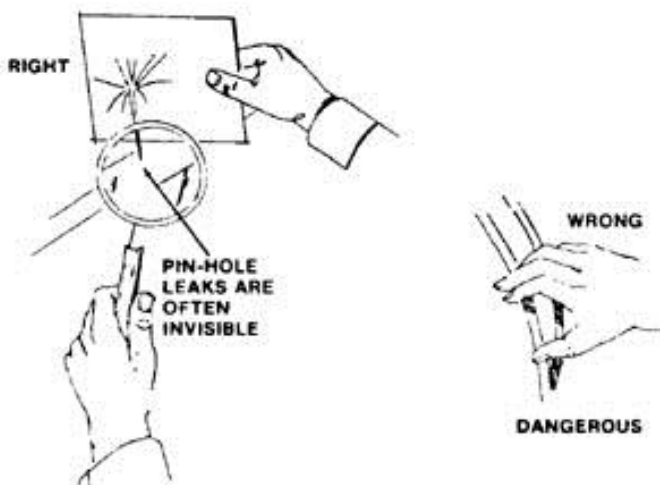
When working with hydraulic fluids, follow manufacturer instructions. In general, the engine and hydraulic oil reservoir should be allowed to cool before checking or changing hydraulic oil. Also review the SDS for the hydraulic oil before handling the oil. Hydraulic oil is also under pressure. Escaping fluid can cause injury. Follow instructions in the next section for checking for hydraulic oil leak when working with hydraulic oil systems.

## **Checking for Hydraulic Oil Leaks**

Extra care is required because the fluid is under pressure. Pinhole leaks are often invisible to the naked eye. Injuries have occurred when workers run a hand or finger along the line to find it. When the pinhole is reached, the fluid can be injected into the skin as if from a hypodermic syringe. This type of injury appears minor at first (tingling sensation) but may result in the loss of a finger or hand. If

you do receive this type of injury, contact your supervisor and seek medical attention immediately.

To prevent this type of injury from occurring, run a piece of paper or cardboard along the line to check for leak:



#### Grass Trimmers and Brush Cutters:

- Proper personal protective equipment, like safety glasses, should be worn to protect you from flying debris.
- Inspect safety shields and blades for cracks or other signs of defect.
- Make sure that safety shields and blades are securely attached.
- Metal blade trimmers should have metal blade shields.
- Never trim if you cannot see what your equipment is trimming!
- Always make sure there are no bystanders in the area where you work.



#### Chainsaws:

- Only certified staff can use a chainsaw on UofT property. The certification process includes completing a departmental 8-hour workshop and supervised training using UofT

chainsaws. Training should include applicable PPE, inspection procedures before use, operational procedures and planning an escape route before cutting.

- Do NOT operate chainsaws alone.
- Do NOT turn your back on a falling tree or branch.
- Proper maintenance is essential to safe chainsaw operation. Refer to the owner's manual for routine maintenance recommendations. In general, remember that chainsaw maintenance includes such procedures as:
  - Air filter cleaning
  - Spark plug visual checks
  - Interior cleaning and visual checks
  - Chain sharpening
  - Chain tension adjustment
  - Inertia Brake tests



#### Power blowers or leaf blowers:

- Proper personal protective equipment, like face shields and safety glasses should be worn to protect you from the high-pressure blast of air.
- Hearing protection should always be worn.
- Do not point blowers towards bystanders or pedestrians.



#### Power Vacuums

- Proper personal protective equipment, like safety glasses, should be worn to protect you from debris.
- Hearing protection should always be worn.
- Do not point vacuum towards bystanders or pedestrians.



#### Power Shears:

- Proper personal protective equipment, like safety glasses and arm protectors, should be worn to protect you from flying debris.

- Do not drape electrical cords over a hedge or shrub that you are cutting. Damaged cords can cause electrical shocks!
- Always use a Ground Fault Circuit Interrupter (GFCI).
- Make sure to turn OFF the power and unplug the cord before you remove jammed material from the blades.



#### Hedge Trimmers:

- For gas powered hedge trimmers:
  - Ensure fuel cap is tight
  - Do not fuel a hot engine
- For electric hedge trimmers:
  - Pay attention to the location of the cord
  - Use GFCI grounded outlets
  - Do NOT operate in wet conditions
- Keep fingers away from the cutting teeth.
- Keep cutting teeth in a safe direction.
- Proper personal protective equipment, like safety glasses and face shields, should be worn to protect you from debris.
- Hearing protection should always be worn.
- Do NOT allow bystanders or pedestrians in the work area.



#### Riding Mowers:

- Avoid irregularities and obstructions in lawns. Clear the area of rocks, stones, wires, sticks, or other debris.
- Slow down and use extra care on hillsides.
- Review manufacturer's manual – know the maximum angle on a slope, know the recommended slope direction. The recommended direction can change depending on the equipment, for example:
  - For the Z-Trak, drive across slopes, NOT up and down.
  - For the Front Deck mower, drive up and down hillsides, not across.
- Beware of driving too close to the edge of ditches.
- Never turn on a slope.
- Never mow on wet or slippery slopes or hills.
- Never allow passengers on your riding mower!





- Avoid backing up.
- Mark off work areas so that the public will know that you are working.
- Do not leave running mowers unattended! Make sure that the power is OFF, parking brakes have been applied and that the key is removed before you leave the mower for even a short period of time.
- Mount and dismount the mower with caution.
- **Roll-over Protection Structure (ROPS)** cabs and frames are designed to minimize injury potential in the event of a rollover. It is critical for an operator to use the seatbelt in a ROPS-equipped tractor. It is the belt that holds you within the protected zone should a rollover occur.
- However, in some areas on campus (e.g. under trees, gateways), the ROPS is disengaged. In these specific circumstances, it is recommended that you do NOT wear a seat belt. In the event of an overturn, the belt would prevent you from being thrown clear of danger.

#### Push / Walking Mower:

- Avoid irregularities and obstructions in lawns. Clear the area of rocks, stones, wires, sticks, or other debris.
- Mow across a slope, not up and down it.
- Never mow on wet or slippery slopes or hills.
- Mow slowly.
- Never reach under the mower housing or guards unless the motor has been shut OFF and the spark plug wire has been disconnected.
- Do not leave running mowers unattended!
- Be aware of bystanders and pedestrians:
  - Point discharge chute way safely away from people
  - Turn off mower when near children.



### Tiller

- Always wear the necessary protective equipment:
  - Long work pants
  - Safety boots
  - Proper gloves
  - Hearing protection
  - Safety glasses
- Check that the tines are securely anchored and properly spaced before every use.
- Never operate a tiller at too high a speed even over loose soil – there could be unseen obstacles in your path that may cause you to lose control.



### Snow Thrower:

- Wear the necessary personal protective equipment!
  - Never wear loose clothing items
  - Wear moisture-resistant, snug winter clothing
  - Wear insulated non-slip safety boots
  - Wear hearing protection
  - Use non-slip insulated gloves
- Hold the handle firmly and walk at a slow steady pace.
- Keep the discharge chute aimed to avoid hitting the operator, bystanders, windows, or other objects.
- Never operate a snow thrower too close to a ditch or edge of a terrace.
- Never put your hand into the snow discharge chute even when the machine is not running. Use a stick or other device to unclog the chute if it becomes plugged.
- On steep slopes, operate from side to side to avoid having the thrower slide onto you.



### Backhoe/Power loader

- Read and fully understand the manufacturer's operating, maintenance and safety manuals.
- Never allow untrained or unauthorized personnel to be present in the work area.
- Perform a pre-operational "circle-check" before using the vehicle every day. Look for:

- Broken, missing or damaged parts,
- Fluid leaks (see note on Hydraulic Fluid Leaks),
- Clean windows, clear steps and hand holds,
- Secure guards, covers and attachments.
- When hoisting or transporting, keep the weight in line with the back of the machine and keep the bucket low to maximize stability and visibility.



### Wood Chippers

- Read and fully understand the manufacturer's operating, manuals and receive training before use.
- Wear slim-fitting clothing, a hardhat, proper eyewear, safety boots, and hearing protection.
- Place chipper in a work area that is free of slip and trip hazards.
- Never allow untrained or unauthorized personnel to be present in the work area.
- Do **not** put your limbs within the in-feed hopper.
- Inspect guards, covers, and intake before use.
- Feed the brush butt-end first and step away once the feed mechanism has grabbed it.
- Never work alone.



### Outdoor Sweepers and Riding Vacuums

- Proper personal protective equipment, like safety glasses, should be worn to protect you from flying debris.
- Hearing protection should always be worn.
- Never reach under the motor housing or guards unless the motor has been shut off and the spark plug wire has been disconnected.
- Be aware of bystanders and pedestrians.



### Stump Cutter

- Read and fully understand the manufacturer's operating, manuals and receive training before use.
- Proper personal protective equipment, like face shields and safety glasses and gloves

should be worn to protect you from flying debris.

- Hearing protection should always be worn.
- Position machine carefully so that flying debris is away from people, vehicles and windows.
- Be aware of bystanders and pedestrians. Never allow untrained or unauthorized personnel to be present within 25 ft. of the work area.
- Never remove guards or shields and inspect them before use.
- Be aware of any underground utilities, rocks, concrete or other dangerous situations.
- Do not allow stump grinder wheels to drop into hole – fill with chips or change positions.
- Cut stump flush with ground first, then go back to cut to desired depth.
- Shut off the engine before moving the machine. Do NOT leave the [safe] operator's position when the engine is running.



#### Skid Steer Loaders

- Read and fully understand the manufacturer's operating, manuals and receive training before use.
- Do NOT exceed the rated operating capacity.
- Never remove guards or shields and inspect them before use.
- Always keep the bucket as low as possible when traveling or turning.
- Keep bucket level while the loader arm is being raised – this will reduce the risk of loose materials from falling into the cab.
- Try to avoid driving over rough services. Go around obstacles rather than through them.
- Check for overhead powerlines.
- Do NOT operate any of the steering levers or controls while standing outside of the cab.



### Tractors

- Read and fully understand the manufacturer's operating, manuals and receive training before use. Tractors often come with skid steer attachments. Make sure you follow manufacturer's instruction proper installation.
- Avoid sharp, fast turns, hole, ditches and uneven ground that may cause the tractor to overturn.
- Never remove guards, shields and labels and inspect them before use.
- Know the safety precautions associated with different types of attachments.
- Serious injuries have occurred from clothes, hair, shoelaces, etc. becoming caught (entanglement) in the Power Take Off (PTO) – see Machine Guarding section.



### Air Compressors

- Read and fully understand the manufacturer's operating, manuals and receive training before use.
- Be aware of other people around you. Gas engines should only be used in a well-ventilated space or outdoor area.
- Ensure tail piece is tight, the house end is clear of debris, gaskets are in place and valves are closed.
- Check fluids if applicable.
- PPE: use safety glasses, hearing protection and gloves.
- Unit may get HOT during operation. Do NOT touch the discharge tubing, engine, motor or compressor pump.
- Keep safety valve clean.
- Do not use compressed air to clean up any chemical contaminants.
- Do not use compressed air to clean clothes or debris off yourself or others.
- Do not press nozzle to skin. Air can penetrate skin. If it enters a blood vessel, it can cause an embolism and cause serious medical conditions including death.



### Aerator

- Read and fully understand the manufacturer's operating, manuals and receive training before use.
- Proper personal protective equipment, like safety glasses and hearing protection, should be worn.
- Be aware of tree roots or other objects which may cause the aerator to jump.



### Concrete Saw

- Read and fully understand the manufacturer's operating, manuals and receive training before use.
- Proper personal protective equipment, like safety glasses and hearing protection, should be worn.
- Sparks can be generated so be aware of bystanders.
- When cutting sidewalks, concrete or cement, exposure to crystalline silica can occur. Review the section on Crystalline Silica which discusses engineering, administrative and PPE controls (including respiratory protection).



### Vibrating Plates

- Read and fully understand the manufacturer's operating, manuals and receive training before use.
- Proper personal protective equipment, like safety glasses and hearing protection, should be worn.
- Use water to reduce dust generation.
- The equipment is very heavy and requires two persons to lift or lower.



### Power Washer

- Read and fully understand the manufacturer's operating, manuals and receive training before use.
- Proper personal protective equipment, like hearing protection, should be worn.
- Be aware of bystanders because the water is under high pressure.



### Sod cutters

- Read and fully understand the manufacturer's operating, manuals and receive training before use.
- Proper personal protective equipment, like safety glasses and hearing protection, should be worn.
- Be aware of tree roots or other objects which may cause the sod cutter to jump.



### Thatch Remover (Dethatcher)

- Read and fully understand the manufacturer's operating, manuals and receive training before use.
- Proper personal protective equipment, like safety glasses and hearing protection, should be worn.



### Riding Rollers

- Read and fully understand the manufacturer's operating, manuals and receive training before use.
- Proper personal protective equipment, like hearing protection, should be worn.
- Rollers should only be used on flat ground; do NOT use on slopes.



### Turf Topper (Top dresser)

- Read and fully understand the manufacturer's operating, manuals and receive training before use.
- Proper personal protective equipment, like hearing protection, should be worn.
- Watch out for pinch points when attaching to tractor.



### Landscapers

- Read and fully understand the manufacturer's operating, manuals and receive training before use.
- Watch out for pinch points when attaching to tractor.



### Spreaders (for seed or salt)

- Read and fully understand the manufacturer's operating, manuals and receive training before use.
- Proper personal protective equipment, like safety glasses, should be worn.



## VEHICLE SAFETY



Adhering to standard vehicle safety requirements, operation and procedures will serve to prevent or reduce vehicle accidents on the job.

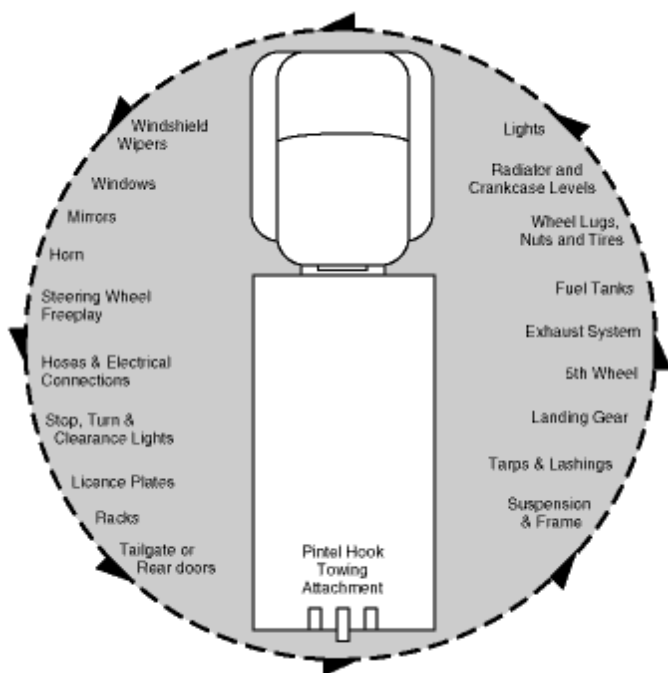
- Only employees with a valid Ontario driver's licence for the appropriate type of vehicle are permitted to operate University vehicles. **Employees must immediately notify their supervisor if their driver's license becomes invalid for any reason.**
- Depending on the type of driving involved, employees may be provided with further information, instruction and training on driving safety. Employees involved in transporting of chemicals and other dangerous goods will receive Transport of Dangerous Goods training.



- Vehicles must be operated in accordance with all applicable Ontario traffic laws. All traffic signs, speed limits and other warning devices must be obeyed.
- Seat belts must always be worn while operating a vehicle, and if present, while riding in a vehicle. Ontario law requires that seat belts be used. Injuries sustained because of failure to comply may give rise to disciplinary action.
- No employee should operate any vehicle or any equipment of any kind while under the influence of alcohol or drugs that may impair judgment or alertness, or while in any other condition that would render the operation of such vehicle or equipment unsafe.
- Vehicles found to be unsafe should not be driven until repaired. Employees must promptly inform their supervisors of any mechanical or safety defects.
- Complete vehicle log book if applicable.
- Smoking is not allowed in UofT owned vehicles.
- Where possible avoid backing. When backing up, move slowly, no faster than a brisk walk. Check clearances (front, back, side, overhead).
- **TAILGATES:** Serious injuries have resulted from falling of a truck tailgate. Be aware of our surroundings, know where the end of the tailgate is located and communicate with your colleagues.
- Do not over fill tires. Know the maximum PSI on tire. Use eye and hand protection.

## Tips for Driving Safely

1. Before starting the car, do a walkabout to survey the condition of the vehicle. Follow a routine method of inspecting a vehicle such as "The Circle Check". See above diagram from CCOHS.



[http://www.ccohs.ca/images/L13\(1\).gif](http://www.ccohs.ca/images/L13(1).gif)

2. Once inside vehicle, check vehicle features to ensure they are working properly. Examples are:
  - Parking brake
  - Foot brake
  - Clutch and gearshift
  - Steering
  - Lights
  - Dash Control Panel
  - All Moving Parts -- any strange noises?
  - Horn
  - Turn signals
  - Mirrors

Any defects should be reported to your supervisor. Depending on the type of defect, it may be necessary to take the vehicle out of service until repairs can be made.

3. Make sure there are no loose objects in the vehicle – if you brake suddenly, flying objects may injure you or your passenger.
4. Drive smoothly and slowly.
5. Slow down for turns.
6. Expect the unexpected (construction, pedestrians, cyclists, other drivers, etc.). Leave yourself an “out” - do NOT tailgate and leave enough space between you and other vehicles
7. Schedule enough time to drive safely.
8. Know the route and alternative routes.
9. Minimize distractions inside the vehicle while driving (adjusting the radio, vehicle features, cellphones, other passengers etc.)
10. Where possible, back into a parking spot rather than drive in. It is safer to pull out from the parking spot than backing out of the spot.
11. Scan all directions continuously, not just a small distance in front of you.
12. Use rearview mirrors – always know what is happening behind you.
13. Check your blind spot.
14. When moving in reverse, the rearview mirror alone is not enough – turn and look behind you. The view you get is much wider than if you only use the mirror.
15. Do NOT assume - use eye contact, horn, headlights, etc. to communicate.
16. Drive according to the weather conditions
17. Be aware that conditions such as fatigue, illness or medications can affect your ability to drive. If you have any of these conditions, and report any problems to your supervisor.
18. And finally, be patient and stay calm.

### **Utility Vehicles/Carts**

The information in this section also applies to Utility Vehicles. In addition, the following precautions should also be taken:

1. Read and fully understand the manufacturer's operating and manuals before use.
2. Turn ON headlights when operating between dusk and dawn.
3. Know the maximum load capacity and do NOT overload the vehicle.
4. Materials and cargo should be loaded so that they will not shift or fall out off. Secure tools and equipment if applicable.
5. Obey the “rules of the road” at all times.
6. Be aware of pedestrians and other drivers – they may not expect to encounter this type of vehicle.
7. Do NOT carry more passengers than recommended by manufacturer/than there are seat belts.
8. Summer casual employees are not permitted to ride in these vehicles as driver nor as passengers.

## LOAD SECUREMENT



When a load or cargo (equipment, chemicals, etc.) is not properly secured, it can result in accident affecting employee and public safety and property damage. Ontario has adopted the National Safety Code (NSC) Standard 10 for Cargo Securement.

### General tips

- Inspect vehicles and cargo securement systems before use. Cargo securement systems include vehicle structures, block and bracing equipment and securing devices. Vehicle structure includes floors, walls, decks, headboards, bulkheads, stakes, posts and anchor points.
- Know the Working Load Limit (WLL) – this is the maximum load that may be applied to a component of cargo securement system and is determined by the manufacturer. It is generally the weakest part of the system.
- The number of tie-downs you need will depend on a number of factors:
  - Is the cargo blocked/immobilized by a front end structure, bulkhead or other immobilized cargo?
  - How long is it?
  - How much does it weigh?
- Ensure cargo does not interfere with safe operation of the vehicle (e.g. blocking view, prevent access/exit or interfere with driver's free movement).
- Cargo should be secured from movement, tipping, falling off the vehicle and unexpected impact. If carrying chemicals, spills may occur if cargo is not secured.
- Keep cargo together, fill gaps.
- Use friction mat or other friction-enhancing device if friction is low
- Initial tension in tie downs should be as high as possible. Maintain tension throughout the trip.
- Use tension devices in accordance with manufacturer instructions
- Cargo height should be  $< 2 \times$  width of the base.
- Evenly distribute weight.

For more information, online training is available (EHS547 Load Securement).

## GASOLINE STORAGE AND HANDLING



A large number of tools and equipment that you will be using require gasoline to work. Gasoline is a colorless liquid with a characteristic odor. It may be dyed yellow. Both gasoline liquid and vapors present a fire hazard. Gasoline liquid can accumulate a static charge by flow. The vapor is heavier than air and may spread long distances making distant ignition and flash back possible. Overexposure to gasoline vapors may contribute to central

nervous system depression, headache, nausea, dizziness, drowsiness, unconsciousness and death. Swallowing or vomiting of the liquid may result in aspiration into the lungs. Before you work with gasoline, make sure you follow these guidelines:

- Do not smoke or bring an open flame to gasoline storage areas, or near machines that contain gasoline.
- Only use approved gasoline containers and store these containers in the designated gasoline storage cabinets. Do not store or leave gasoline in an unsupervised area. Ensure containers are labeled.
- Vehicle equipped with plastic or carpet bed liners do not dissipate potential electrostatic charge, therefore the static charge that builds up can create a static spark between gas container and the fuel nozzle. Always place the containers to the ground before refueling.
- Do not refuel indoors! The buildup of gasoline vapors may lead to conditions causing unconsciousness. Always refuel on level areas of the ground. Do not refuel on grass areas.
- Never refuel a machine when the engine is hot or running.
- When you refuel, do not fill the tank right to the brim. As temperatures rise, gasoline needs space to expand.
- If gasoline is spilled, place an absorbing compound over the spill. Any large spills should be reported immediately to your supervisor and call: St. George: (416)-978-7000 / UTSC:(416)-287-7333 / UTM: (905)-569-4333

- Used appropriate gloves. If gasoline comes in contact with skin or clothing:
- Refer to procedures outlined on the SDS. This generally involves washing the skin with soap and water for approximately 15 minutes and removing contaminated clothing.
- It is recommended that contaminated clothing be thrown away. If it is necessary to keep the contaminated clothing is kept, it should be washed separately from other clothing before wearing it again.
- Gasoline can be absorbed by the skin. Safely turn OFF any equipment you are using and clean up immediately. Do not wait until the end of the shift or after the work is done.
- Report the incident to your supervisor.

# FIRE EXTINGUISHERS

You should only use a fire extinguisher if:

- You know what material is burning and what type of extinguisher to use (see below for Types of fire extinguishers)
- You know how to use a fire extinguisher
- The fire is not spreading beyond the spot where it started.
- You have an escape route. Always stand between the fire and the escape route in case the fire grows.

Do NOT turn your back to a fire even when it looks out. It may reunite again.






Do NOT fight a fire if you are not confident about your ability to handle the situation. Instead, pull the alarm, evacuate the area and call 911 (9-911 on a campus phone).

## Types of fire extinguishers

There are 5 types of fire extinguishers, A, B, C, D and K. Each type of extinguisher is designed for a type of fire (material).

It is dangerous to use water or Class A extinguishers on a fire involving flammable liquids or energized equipment.

Class D and K fire extinguishers require special training.

| CLASS OF FIRE  | TYPE OF FIRE                      | APPROVED FIRE EXTINGUISHER           |
|--|-----------------------------------|--------------------------------------|
|  ORDINARY COMBUSTIBLES <b>A</b> | Wood, paper, cloth                | Type A;<br>Type A-B                  |
|  FLAMMABLE LIQUIDS <b>B</b>     | Gasoline, paints, oils, grease    | Type A-B;<br>Type B-C;<br>Type A-B-C |
|  ELECTRICAL EQUIPMENT <b>C</b>  | Electrical wiring, fuse box       | Type B-C;<br>Type A-B-C              |
|  COMBUSTIBLES <b>D</b>          | Metals                            | Bucket of Sand                       |
|  <b>K</b>                      | Commercial cooking oil appliances | *Wet Chemical                        |

**When using a fire extinguisher**, use the PASS (Pull, Aim, Squeeze, Sweep) system.



**P**ull the extinguisher's safety pin



**A**im the extinguisher at the source of the flames



**S**queeze the trigger and hold it



**S**weep the source of the flames until the extinguisher runs dry

## TRANSPORTATION OF DANGEROUS GOODS (TDG)

### Who needs TDG training?

Transportation of Dangerous Goods (TDG) Regulations states that a person who handles, offers for transport, or transports dangerous goods must be adequately trained and hold a training certificate. A person who does not hold a valid training certificate may still perform those activities in the presence and under direct supervision of a person who is adequately trained and holds a valid training certificate, specifically, a person without training must be physically accompanied by a person who has adequate training and a valid training certificate.



### Training and Training Certificate

Training may vary depending on the classes of dangerous good that is being transported/handled but generally includes the nine classifications of dangerous good, documentation required, safety marks (labels/placards), safety requirements for TDG and requirement for workplace-specific training. Trained employees must have their training certificate on their person. TDG Certification training expires every 3 years.



## LADDERS



Ladders should only be used when other forms of working at heights are not feasible. A fall from a ladder can be very serious, and basic safety guidelines should be taken to avoid this. Work above 10 ft. (or 3 metres) will require other controls to be put into place.

### Select the Right Ladder for the Job

- Never use a metal or metal-reinforced ladder if working near electrical wires or equipment; use a wooden or fibreglass ladder.
- Choose a ladder with the proper duty rating to support the combined weight of the user and any materials.
- Choose a ladder that is long enough to safely reach the desired height.
- Straight ladders should have safety feet.
- If the ladder is located close to a door, make sure that the door is locked to prevent collisions.

### Inspect the Ladder Before Use

- Make sure that the ladder is in good physical condition, and that there are no missing or damaged parts. Check the condition of the rungs, the safety feet, braces, nuts and bolts, and so on.
- Make sure that the base of the ladder is level and solid. IF the ground is uneven, shore up the legs. This means making the ground more solid or even.
- Make sure that the ladder rungs are clean. They should be free of mud, snow, oil, grease or any other slipper substances.
- Make sure that your shoes are also safe for climbing. If they are wet or muddy, you can slip.
- Face the ladder when ascending or descending.
- Maintain three point contact at all times when working. This means two feet and one hand or one foot and two hands should always be in contact with the ladder.

### Position the Straight or Extension Ladders

- Use the 4 to 1 rule. Position the base of the ladder one foot away from the wall for every four feet of ladder height.
- A straight ladder should extend at least 3 feet past its upper support point.
- Secure the ladder from movement if needed. Tie down the ladder as close to the support point as possible.
- Do not stand on the top 3 rungs of a straight ladder.

### **General Guidelines for Climbing the Ladder**

- Work with a partner whenever you can. Your partner can hold the bottom of the ladder when you climb up or come down. Only one person is allowed on the ladder at a time.
- Face the front of the ladder when climbing up or down. Use both hands while climbing and maintain a firm grip.
- Avoid twisting or turning on the ladder; this makes it easier for you to lose your balance.
- Do not stretch or reach out beyond the side rails of a ladder; you could lose your balance.
- Do not stand on the top 2 rungs of the ladder.
- Do not carry up equipment while you climb; pull these materials up to you after you have reached the top or have a co-worker pass them to you. Wear a tool belt if you need to carry tools while you are on the ladder. Carry only the tools that you need for that particular job.

### **Step Ladders**

- If you are using a step ladder, spread its legs to the limit and then lock the spreaders. Make sure it is locked in place before climbing the ladder!
- Do not stand on the top 2 rungs of the ladder.
- Do not climb, sit or stand on the spreader braces, ladder top, or pail shelf.

For further details, consult the University of Toronto - Working at Elevated Places - Portable Ladders Standard - Selection and Use.

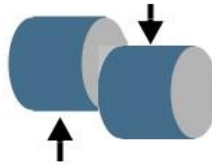
## **MACHINE GUARDING**

Moving machine parts have the potential for causing severe workplace injuries due to hazards created by hazardous motions and actions. Many of the tools and equipment you use in your daily jobs have the following hazards of which you should be aware:

### Shear Points:

Shear points are created when the edges of two objects move to cut material.

Stay clear of shear points when the equipment is operating!  
Shut off all power when adjusting or cleaning equipment with shear points.



### Crush Points:

Crush points are created when two objects move toward each other.

Avoid placing body parts between objects that are moving toward each other.



### Pinch Points:

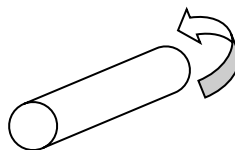
Pinch points are created when two objects move together, with at least one of them moving in a circle. Pinch points can be found in belts, gear drives, chains and elevators.

Avoid placing body parts near pinch points.



### Wrap Points:

Wrap points are created around rotating machine components. Injuries usually occur when loose clothing or hair catch and wrap around rotating shafts.



Protruding shaft ends can also become wrap points.

The above hazards exist in three main areas:

- 1) The point of operation on a machine where work is performed on the raw material and where actions such as cutting, shaping, boring or forming takes place;
- 2) The power transmission apparatus which includes mechanical components which transmit energy to the part of the machine performing the work (e.g. gears, cams, shafts, pulleys, belts, flywheels, cranks, clutches, chains, connecting rods, couplings, and spindles); and
- 3) Other moving parts of the working machine (e.g. reciprocating, rotating and transverse moving parts, moving belts, meshing gears, cutting teeth, feed mechanisms, auxiliary parts and any parts that impact or shear).

Workers have the responsibility to:

- Use machine guards properly and keep them securely in place when performing tasks or working in an area where mechanical hazards exist;
- Follow proper safeguarding procedures; and
- Maintain machine guards and devices in good condition, and report defective or missing guards to the supervisor.

4) **Power Take Off (PTO):** Serious injuries have occurred from clothes, hair, shoelaces, etc. becoming caught (entanglement) in the Power Take Off (PTO).

- Make sure the Master Shield, the Driveline Shield and other guarding are in place. Do NOT modify these protective devices.
- Disengage the PTO, apply the parking brake, turn OFF the engine and remove the key before getting off.
- Do NOT step across a rotating PTO driveline.
- Reduce PTO shaft abuse: avoid tight turns that pinch rotating shafts between the tractor and the machine; keep excessive telescoping to a minimum; engage power to the shaft gradually; and avoid over tightening of slip clutches.
- Be aware of your clothing, shoe laces and hair. Wear snug fitting clothing
- For further details, consult the University of Toronto – Machine Guarding Standard.

## ERGONOMICS



Back injuries are a leading hazard both in the workplace and at home. Approximately 80% of people will suffer from back pain at some point during their life. We often do not think about how easy it is to hurt our backs, until it happens.

Back problems do not usually happen because of just one single event. Usually, they result from factors like poor posture, improper lifting techniques, or repeated misuse. Be aware of the various ways you can hurt your back when lifting at work or at home. For example, you increase the likelihood of hurting your back if you use poor lifting techniques, if you are in poor physical condition, or if your workplace is not designed properly and you need to reach, pull, twist or bend when you lift.

### A. Risk Factors for Lifting Injuries

Let us look at the main factors that contribute to back injuries:

#### 1. The Object Being Lifted:

- **Weight.** The heavier the object, the greater the load on the spine and the higher the risk of injury. If a load is heavy, use a mechanical aid (pushcart, trolley, etc.) or ask for help. Or, separate heavy loads into lighter loads to reduce the risk of injury. **Always test the weight of the object before you try to lift it.**
- **Shape.** Avoid large objects that extend the arms and block your vision. Smaller objects can be lifted properly and more easily. Ask for assistance. For larger loads, divide the load into two lighter loads and make two trips or ask for assistance.
- **Centre of Gravity.** Avoid objects with lopsided weight or loose contents. If this is not possible, use a mechanical aid or handle it with care. Keep the object close to the body. The farther away the object is held from the body, the more weight is placed on the spine. When dismantling an object for transport, ensure you understand the centre of gravity for each component as it may be different from when all the components are together.
- **Labeling.** Read the label to see what the total weight of the object is, and whether the object contains dangerous substances.
- **Grip.** Objects should be easy to grasp. Handles should be large enough to accommodate the full hand, so that a power grip rather than a hook grip is used. A pinch grip requires the tool to be grasped between the index finger and the thumb for precise

manipulations. When a pinch grip is used intensively and for a long duration, fatigue may occur in the hand and forearm muscles.



Power Grip



Hook Grip



Pinch Grip

## 2. The Task:

- **Work Posture.** Avoid unnecessary static posture or lifting from an awkward position. Maintain your back in a neutral position. Proper workplace design can eliminate this problem. **Stretch periodically to give your back a break.** For example, avoid awkward attempts at lifting large pieces of furniture on your own. Instead, ask one or more of your coworkers to assist you.
- **Height of Start and Placement.** Objects should also be stored below shoulder and above hip height to reduce reaching above the shoulder and to reduce bending. Avoid lifting above shoulder height by using an adjustable platform.
- **Carrying distance.** Keep carrying to a minimum. Use mechanical aids such as conveyors or carts to move objects large distances. Efficient layout will reduce the carrying distance.
- **Repetition, rate and duration.** More stress is placed on the back:
  - The more times you have to lift;
  - The faster you lift; and
  - The longer you lift.For example, landscaping may involve extended and repeated periods of reaching. It is therefore important to stretch periodically to give your back a break.

## 3. The Environment:

- **Temperature.** Excessive heat and extreme cold can increase the risk of injury. If you work in a hot environment, you can overexert yourself or succumb to some heat-related illness. When muscles

are cold, flexibility and dexterity are reduced. If you also need to wear heavy, bulky clothing, your movement will be restricted.

- **Lighting.** Lighting is important to see the work area and the object being handled. It also allows the worker to see dangers in the workplace, such as a wet floor, a falling object or an obstacle in the path. The light should be sufficient to see changes in floor level and texture.
- **Obstacles/slippery surfaces.** It is good work practice to regularly inspect the work area and identify and remove slip, trip and fall hazards.

#### **4. The Worker:**

- **Strength.** Inadequate muscle strength can lead to faulty body mechanics and back injuries. If the muscles in your arms or legs are weak, you sometimes make up for it by using your back muscles, which are relatively weak muscles.
- **Physical Fitness.** Poor physical condition can increase the risk of injuries. Regular exercises such as walking, swimming or biking will help you to keep fit.
- **Training.** Lack or inadequate training on lifting techniques can result in improper lifting and eventually back pain and injury.
- **Age.** According to the Canadian Center for Occupational Health and Safety, ageing diminishes strength. However, since the rate of decline varies greatly with the individual, discrimination against older workers due to age alone is unjustified. In fact, statistics show that back injuries among workers over 45 years of age are less frequent than among those between 20-45 years of age. This is due to the link that in general, older workers tend to be more experienced with their jobs thus equipping the older worker with skills, dexterity and practical know-how for completing tasks. The unskilled, inexperienced worker is at greater risk in tasks that require skills in handling. On the other hand, the older, experienced worker is at risk in tasks requiring sheer physical strength.

#### **B. How To Lift Safely**

Proper lifting techniques can help you keep your back healthy and prevent back pain and injury. There is no single lifting technique that will work in all situations.

##### **Before You Lift:**

- Ensure you are wearing CSA approved safety shoes and using leather work gloves.

- Examine the load and check overall conditions. Test the load. Decide where and how to hold it. Check to see if the load has any sharp edges, or if it is slippery, too hot or unevenly balanced.
- Clear your path of any obstacles or tripping hazards. Make sure that you can fit through narrow spaces.
- Make sure your footing is solid. Your shoes should give you good balance, support and traction.

### Performing the Ideal Lift:



- Stand close to the load.
- Place your feet shoulder width apart to give you good balance.
- Bend your knees, keeping your back comfortably straight.
- Grip the load firmly. Make sure that you can hold it securely, without slipping.
- Lift with your legs, slowly straightening them to a standing position. Maintain your back in a neutral position.
- Keep the arms and elbows close to the body when lifting. Hold object firmly and close to your body.
- Lift smoothly using controlled movements. Move your feet if you must turn while lifting; do not twist your body.
- To lower the load, bend the knees. To place load on a bench, shelf or table, place it on the edge and push it onto position. Make sure that your fingers are out of the way when you set the object down.

Image from <http://www.ccohs.ca/images/MMH059.gif>

### Lifting Do's and Don'ts:

- DO test the load and check overall conditions.
- DO perform a pre-job analysis to identify potential hazards.
- DO keep the object close to the body.
- DO place your feet shoulder width apart to give you good balance.
- DO use your legs to lift.
- DO maintain the natural curve of your back (neutral position).
- DO use smooth controlled movements.
- DO take breaks and stretch the back.
- DON'T lift unreasonably heavy or awkward loads.
- DON'T bend forward for prolonged periods.
- DON'T lift in front of one knee or to one side of the knee.
- DON'T rotate or twist your back while lifting. Turn with your feet and not your waist.
- DON'T use rapid or jerky movements.
- DON'T lift asymmetrically/one-sided.



**NEVER** try to lift a load that is too heavy, too large, or too awkward for you to handle! Instead, you should:

- Use a materials handling aids (pushcart, hoist, dollies, etc.) whenever possible.
- Ask others for help.
- Divide the load into separate pieces if possible.
- Your supervisor in conjunction with the Office of Environmental Health and Safety can schedule training on Manual Materials Handling.

Examples of materials handling aids:



Raise and roll



Trolleys



Hydraulic Lifts



Pallet Trucks



Lift Table



Tailgates



Wheel Barrel



Bins



Hand trucks

## Shoveling

- Where possible, push rather than lift.
- Keep shovel close to your body.
- Use lightest shovel possible appropriate for the job.
- Turn your whole body rather than twisting at the waist.

- Do not over lead the shovel. Scope smaller amounts and walk to where you want to put it. Keep throwing distance to less than 3 feet.
- Squat with your legs appear, knees bent and back straight.
- Lift with your legs and do not bend at the waste.
- Pace yourself. Warm-up and do stretches.

## References:

- 1) Section 45 of the Regulation respecting Industrial Establishments, made under the Ontario Occupational Health and Safety Act.

## NOISE

Exposure to harmful levels of noise can happen when using noisy equipment such as chainsaws and lawn mowers. Long-term noise exposure over many years can contribute to permanent hearing loss, which cannot be cured by medical treatment.



Some indications that your work environment is too loud are:

- Sounds are muffled.
- You hear a ringing sound in your ears after a long exposure
- You have a difficult time hearing somebody who is standing close to you
- Your ability to hear decreases at the end of the work shift but returns to normal the next morning

The loudness of noise is given in dB(A). Some common sounds are given below:

|  |                           |
|--|---------------------------|
| Wood Chipper   | 100 - 110 dB(A)           |
| Lawn Mower   | 95 - 110 dB(A)            |
| Power Mower, Snowmobile  | 95 - 105 dB(A)            |
| Chain Saw  | 95 - 105 dB(A)            |
| Sidewalk Snow Plow   | 90 - 100 dB(A)            |
| Salt and Sand Truck  | 90 - 100 dB(A)            |
| Vacuum Cleaner   | 80 - 85 dB(A)             |
| Normal Conversation  | 60 - 65 dB(A)             |
| Whisper  | 30 - 40 dB(A)             |
| University of Toronto Maximum Permissible Exposure to Noise Without Hearing Protection | 85 dB(A) over eight hours |

### **Prevention:**

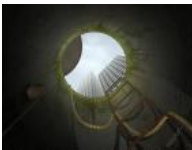
Your employer is responsible for controlling the noise in your workplace. If it is not possible to reduce the noise to safe levels, then your employer must protect you from the noise. This may be carried out by reducing the time you spend in noisy areas, or by providing you with the proper hearing protection.

- Let your supervisor know about any noisy equipment, and if you experience temporary loss of hearing, headaches, or ringing in the ears during or at the end of your work shift.
- Noise training will be scheduled by your supervisor in conjunction with the Office of Environmental Health and Safety.
- Hearing audiometric tests are available through Occupational Health Nurse for employees working in areas with recognized noise hazards. Your supervisor must arrange for you to have your baseline audiometric test within the first two weeks of your employment.
- Do not wear music ear buds under proper hearing protection. Working with power tools and machinery requires complete attention.
- When wearing hearing protection, do not turn your back to on-coming traffic. Be aware of your environment.

### **References:**

- 1) Ontario Occupational Health and Safety Act.
- 2) University of Toronto Noise Control and Hearing Conservation Program.

## **CONFINED AND RESTRICTED SPACES**



A confined space means a fully or partially enclosed space, that is not both designed and constructed for continuous human occupancy, and in which atmospheric hazards may occur because of its construction, location or contents or because of work that is done in it. Examples of confined spaces include but are not limited to: manholes, wells, sub-cellars, tanks, vaults and open ditches.

**“Acceptable atmospheric levels”** means that,

- the atmospheric concentration of any explosive or flammable gas or vapour is less than,
  - 25% of its lower explosive limit, if the worker is performing only inspection work that does not produce a source of ignition,
  - 10% of its lower explosive limit, if the worker is performing only cold work and,
  - 5% of its lower explosive limit, if the worker is performing hot work and is following appropriate procedures,

- the oxygen content of the atmosphere is at least 19.5% but not more than 23% by volume,
- exposure to atmospheric contaminants does not exceed any applicable level set out in a regulation made under the Occupational Health and Safety Act.

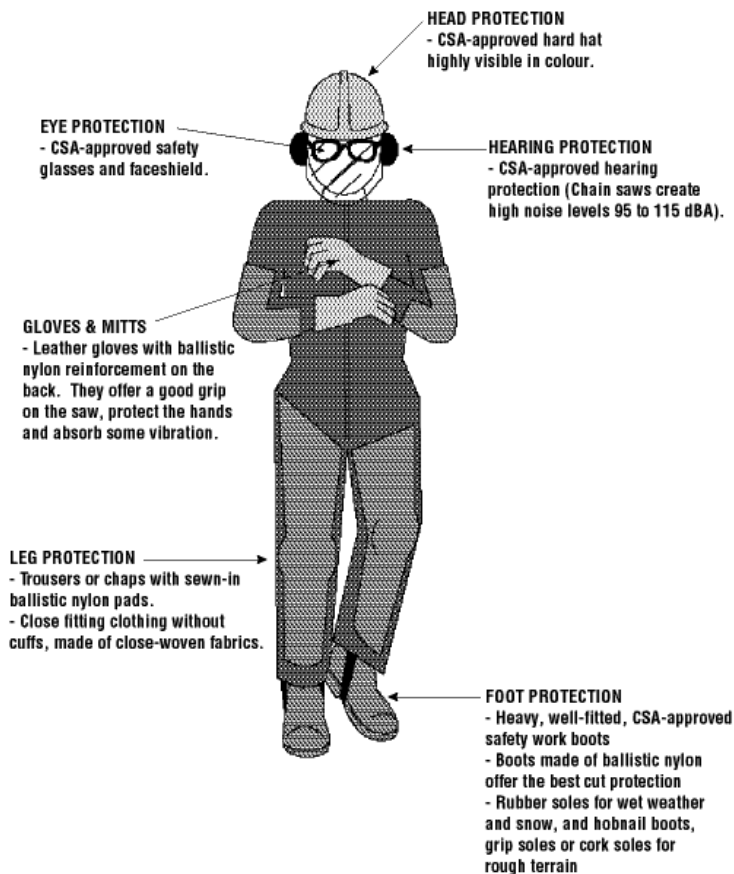
Entry into confined spaces or restricted spaces can be potentially hazardous if appropriate procedures and practices are not followed. Your supervisor will inform you of workspaces classified as confined or restricted, and the procedures and precautions you must follow when working in such areas. In addition, there are signs posted pointing out confined and restricted spaces. Make sure not to enter these areas until you have made sure of the following:

- Confined and/or restricted spaces training will be scheduled by your supervisor in conjunction with the Office of Environmental Health and Safety.
- Confined spaces require an entry and work permit, air monitoring and a confined space attendant stationed at the entry of the confined space.
- Confined spaces are classified according to the need for respiratory protection.
  - Class 1 confined spaces cannot be entered without proper respiratory protection. Workers entering Class I confined spaces must wear appropriate respiratory equipment, usually Self Contained Breathing Apparatus (SCBA) or Supplied Air Respirators (SAR)
  - Class 2 confined spaces do not require the use of respiratory protection.

**Restricted Spaces (UofT)** is a space which is fully or partially enclosed, that is not both designed and constructed for continuous human occupancy, but in which atmospheric hazards are neither present nor likely to occur. Restricted Space entry must be performed using the buddy system, along with a reliable means of communication in place.



## PERSONAL PROTECTIVE EQUIPMENT (PPE) FOR GENERAL SAFETY



[http://www.ccohs.ca/images/H06\(1\).gif](http://www.ccohs.ca/images/H06(1).gif)

Personal protective equipment (PPE) is any equipment or clothing which you have to wear to protect you from possible hazards in the workplace, such as chemicals, noise, sharp objects, flying particles, extreme temperatures or electrical hazards. Your supervisor will ensure that efforts are made to control hazards at their source; however, there will be situations when you will be required to wear personal protective equipment.

All personal protective equipment should be in accordance with the standards as identified in the applicable Regulations, Canadian Standards Association (CSA) and University of Toronto Standards and Procedures.

All personal protective equipment should be inspected regularly for damage, and repaired or replaced when defects are found.

Examples of PPE that you may use include:

### **Sun Protection:**

- Wear long or short-sleeve shirt and pants made of tightly woven fabric (e.g. cotton) to protect your skin.
- Generously apply SPF-15 or higher sunscreen to protect your exposed skin.
- Wear a hat / visor to protect you from the sun's glare and heat.
- Wear appropriate sunglasses to protect your eyes from ultraviolet radiation.

### **Head Protection:**

- Wear a CSA approved hardhat when working around tree branches or falling objects.
- Inspect and maintain your hard hat for cracks, dents, etc. each time before you work.
- Does your hard hat fit? There should be a one-inch clearance between the hard hat's outer shell and your head. This is so that the hard hat's suspension system can properly absorb a blow.

### **Eye Protection:**

- Wear CSA approved safety glasses to protect your eyes from debris.
- Ensure your safety glasses fit properly. People's eye size, nose bridge size, and temple length are different from person to person.
- Clean your safety glasses daily by following the manufacturer's instructions. Take special care not to scratch the lenses while you clean.
- Regular prescription glasses cannot be worn as eye protection. If you require prescription safety glasses, speak with your supervisor. Prescription safety glasses meets Canadian Standard Association (CSA) standard Z94.3.1 and this information is imprinted on the frame.

### **Air-Purifying Respirators:**

- If you are required to wear a respirator, you must be fit-testing for the exact brand, model and size. Fit-testing is done by the Office of Environmental Health and Safety and should be conducted at least every 2 years, more frequently if your face has changed to affect the seal (e.g. dental surgery, rapid weight loss or gain).
- Air-purifying respirators can be used to protect against airborne contaminants such as dusts, mists, fumes, smokes, aerosols, gases and vapours.
- The general categories of air-purifying respirators are:
  - Particulate (Dust, fume and mist)

- Gas and vapour
  - Combination
- Selection of the most appropriate air-purifying respirator and cartridges/filters depends on factors such as the frequency of use, the type of contaminants and the anticipated concentration of those contaminants.
- Any worker who is required to use a respirator must be clean-shaven and be trained with respect to the limitations of that respirator, as well as: proper fit, inspection, maintenance, cleaning and storage. For further details, consult the University of Toronto Respiratory Protection Program.

### **Hearing Protection:**

- When noise levels are high, wear CSA approved earplugs, earmuffs, or both.
  - Earplugs are inserted to block the ear canal.
  - Earmuffs fit around the ear and are held together by a headband.
- Do not use radio headsets as a substitute for hearing protection.
- Do not modify your hearing protection.
- Wash your hands before inserting or removing earplugs to prevent contamination of the ear canal. Some earplugs have a push-in design which reduces handling of the part that goes into the ear.

### **Hand Protection:**

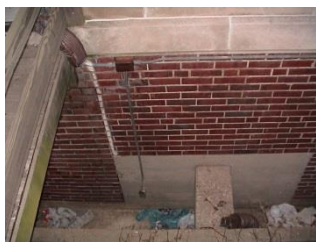
- Choose the right glove for the hazard (e.g. cuts, scrapes or chemical hazards)
- Make sure your gloves fit your hands properly.
- When working on machinery or powered equipment, always remove your gloves to avoid getting your fingers pulled into blades and chains.
- Practice good hygiene. Even if you wear hand protection, wash your hands prior to eating, drinking, smoking, etc. This is particularly important if you have been handling chemicals or soil which contains bacteria and fungus.

### **Foot Protection:**

Safety footwear protects your feet against impact, compression, and puncture to the foot. Also, many injuries are caused by workers slipping on wet grass and steep inclines.

- Choose CSA approved footwear only, making sure that it has the proper rating for the hazard as well as the proper sole for the working conditions.
- Lace up boots fully. The support can help reduce ankle injuries and tripping incidents.
- OUTDOORS only: wear anti-slip footwear provided by the department

## **CLEANING WINDOW WELLS**



As part of your job, you may be involved in cleaning window wells. Some hazards that you may be exposed to while you clean window wells include:

- Risk of slips, trips and falls from the ground to the bottom of the well, climbing through windows, climbing over fences, slipping on icy surfaces.
- Risk of burns, abrasions, cuts, electrocution, bruises from contact with utility lines, pipes, conduits, construction debris, garbage, or other unknown materials.
- Risk of diseases such as *Histoplasmosis* from contact with bird droppings – see section on Bird, Bat and Raccoon Droppings.
- Risk of musculoskeletal injuries from shoveling, digging, lifting materials.
- Risk of exposure to biological agents present in the stagnant water.

Before you enter a window well to clean it, make sure of the following:

- Ladders are used properly, in accordance with the University's Ladder Standard.
- Establish a buddy system or a radio communication system if you will be working alone in an isolated location.
- Depending on the situation, wear appropriate personal protective equipment such as gloves (the type of glove material will depend on what you are trying to protect yourself against), safety glasses, coveralls, respirators, head protection, or rubber boots.
- Contact the operating engineers of the area where you will work to ask them what type of utility hazards may be present. Ask them to shut down any lines where possible.
- If you come across containers of unknown chemicals in the wells contact: St. George: (416)-978-7000 UTSC: (416)-287-7333 UTM: (905)-569-4333
- If you come across window wells heavily contaminated with bird droppings while you clean, follow procedures outlined in the Bird and Bat Droppings section.

## SNOW SHOVELING





During the winter season, Grounds employees are involved in clearing the snow from building entrances. Shoveling snow requires great physical effort, as it involves staying balanced on often slippery surfaces as well as lifting heavy loads. Also review the section on Cold Environments for information on protecting yourself from the cold.

Awkward shoveling practices may contribute to back or other musculoskeletal injuries.

Some safe practices to follow to make snow shoveling safer include:

- Waxing or lubricating the shovel so that snow will not stick.
- Taking care not to overload the shovel especially when the snow is heavy and wet.
- Watching for hidden objects lodged into the snow, as sudden stops may impact the body.
- Use the lightest shovel appropriate for the job.
- Minimize your 'throw' distance to < 1 metre.

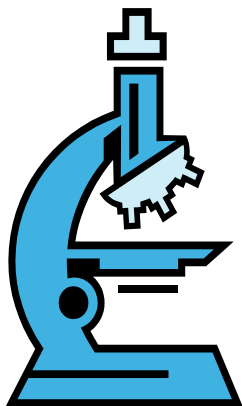


Before using snow throwers / snow blowers / snow sweepers, make sure to:

- Never wear loose clothing, scarves, or other items that could get caught in the equipment.
- Use appropriate hearing protection.
- Secure long hair.
- Ensure all shields and guards are in place.
- Ensure auger, blower system, and snow discharge chute are properly lubricated, adjusted and operating freely.
- Ensure engine oil levels are proper.
- Ensure tires are properly inflated and in good condition.
- Ensure the power cord is in good condition with the ground lead intact.
- Ensure throttle and clutch systems are working smoothly.
- Keep hands and feet away from the machinery's moving parts, even if the machine is OFF.
- Watch for pedestrians and traffic. Ensure that snow from the discharge chute is not going to hit you, bystanders, or other objects.
- Never leave a snow thrower running while you take a break.
- Never operate a machine indoors unless the room's exhaust is connected to an exhaust system that was designed for that purpose.
- Also refer "Powered Equipment and Hand tools Section" of this handbook
- Follow manufacturer's instruction for performing maintenance or refueling. In addition to stopping the engine, additional safety


precautions may include disconnecting the spark plug and blocking/chocking the vehicle.

## SAFE TO REMOVE TAGS



As part of your job, you may be called upon to work in a University Laboratory which is vacated by a principal investigator or a professor due to retirement or other reasons. The work may involve moving equipment that was used with biological, chemical, or radiological agents. To protect your health and safety, principal investigators or professors are required to properly "Decommission" the laboratory and associated research areas such as storage rooms. Once the areas are decommissioned "Safe to Remove Tag" signage or other equivalent document will be posted identifying that the equipment to be moved has been decontaminated to inactivate or remove potentially hazardous agents and materials used in the laboratory.

Equipment should not be removed unless a "Safe to Remove Tag" or an equivalent document signed by the principal investigator is provided.

|   |               |
|---|---------------|
| <br><b>University of Toronto</b><br><b>Safe to Remove Tag</b>  |               |
| Where necessary, the equipment identified below has been decontaminated to inactivate or remove potentially hazardous agents and materials used in the laboratory.  |               |
| Equipment _____   |               |
| Department, Building Name, and Room Number _____  |               |
| To the best of my knowledge,<br>this equipment or location presents:<br><b>NO HAZARD FROM BIOLOGICAL, CHEMICAL<br/>OR RADIOLOGICAL AGENTS THAT WERE<br/>USED IN THE LABORATORY.</b>   |               |
| _____<br>Principal Investigator's Signature   |               |
| _____<br>Principal Investigator's Name  |               |
| _____<br>Building and Room Number   |               |
| _____<br>Telephone Number   | _____<br>Date |
| <b>Note:</b>  |               |
| <ul style="list-style-type: none"><li>• If the Principal Investigator is not available, then the Departmental Chair should complete and sign this form.</li><li>• It is a serious offence to falsify this tag.</li></ul>                  |               |
| <b>Movers and Handlers:</b>   |               |
| <ul style="list-style-type: none"><li>• Appropriate safety precautions must be taken when moving or handling large or heavy items, and may include:<br/>Eye and Hand Protection<br/>Protective Footwear<br/>Protective Clothing</li></ul> |               |

## SLIPS, TRIPS AND FALLS



Slips, trips and falls are major cause of workplace injuries. When we walk, we shift our center of gravity from our rear foot forward. Depending on what is in our path or on the ground, we can lose our balance as we walk. Injuries can be minor (e.g. scrapes, bruises) or serious (e.g. bone fractures, even fatalities).

As part of your job, you may often be exposed to conditions that may increase the risk of a slip, trip, or fall such as:

- Wet or snowy weather conditions
- Wet flooring indoors
- Spills on the floor
- Uneven flooring, rug or carpet edges
- Loose handrails
- Uneven steps
- Icy floors
- Poor lighting conditions
- Extension cords, cables, piping in the way
- Equipment or supplies in the way

### Prevention

- Good housekeeping
- Look where you are going! Do not allow objects you are carrying to obstruct your view.
- Keep your work area tidy and uncluttered.
- Make sure that your footwear is appropriate for your working conditions.
- Clean up drips or spills immediately.
- Keep cables and cords out of walkways.
- Avoid use of cell phones and other distracting gadgets when walking
- Report any slip, trip and fall hazards to your supervisor right away
- Keep work areas well-lit and clean.
- When you are working on wet and slippery surfaces, practice **safe walking skills**:
  - Walk at a safe speed; do not rush.
  - Use shorter steps to keep your center of balance under you.
  - Point your toes slightly outward

## **APPENDICES**

## **APPENDIX A – Health and Safety Resources**

### **OFFICE OF ENVIRONMENTAL HEALTH AND SAFETY**

<https://ehs.utoronto.ca/>

The Office of Environmental Health and Safety (EHS) serves as a resource to the University community to assist employees, students and visitors in meeting their obligations for a safe and healthy workplace.

#### **OCCUPATIONAL HYGIENE AND SAFETY • 416.946.0065**

Occupational Hygiene and Safety Services provides a wide range of services including assessments, program development, training and advice. Using the approach of anticipation, identification, assessment, control, and communication, we deal with issues such as accident investigations and statistics, audits and inspections, first aid, asbestos and other Designated Substances, mould, noise, ergonomics, chemical safety, heat/cold stress, indoor air quality, materials handling, lockout-tag out and working at heights and in confined spaces.

#### **LAB CHEMICAL SAFETY • 416.978.4335**

The Chemical and Lab safety group assists professors, staff and students with all aspects of lab safety that are not related to biological or radiological issues. The group provides services in a diverse number of fields including chemical safety, nanomaterials, lab ventilation, compressed gases, liquefied gases, field safety, and others. Support is provided through training, site assessments, inspections, annual fume hood and alarm certification, lab commissioning, safety procedures and programs.

#### **BIOSAFETY • 416.978.3981**

The Biosafety Program provides a number of services to assist teaching and research labs that use biological materials, and for non-lab staff that may encounter such materials in their work. We identify biosafety and biosecurity concerns, and provide risk assessments, training, medical surveillance, review of physical containment and operational practices, and interpretation of regulatory requirements.

#### **RADIATION SAFETY • 416.978.2028**

We provide Radiation users proper training and authorization. The Ionizing Radiation Protection Program ensures appropriate controls to minimize potential exposure. Training courses are offered monthly. We also provide X-ray machines or lasers users registered status by the University's Radiation Protection Services and appropriate safety training. Laser safety training is mandatory for all users of Class 3B and 4 lasers.

#### **HAZARDOUS WASTE • 416.978.7000**

The Environmental Protection Services is responsible for the collection of chemical, biological and radioactive waste materials. We provide anyone

generating hazardous waste, through research, teaching labs, maintenance or spills proper labeling, packaging and storage procedures to ensure appropriate disposal.

### **OCCUPATIONAL HEALTH SERVICE • 416.978.4476**

Occupational Health Service provides medical and health services to University staff in the areas of Occupational Disease Prevention, and Health Promotion and Education. Services include provision of health risk assessments, medical surveillance (e.g. noise hearing test) and health promotion on a variety of health related topics such as: Hypertension, Back care, Nutrition, Stress Management, Fitness, Pain Management, Infectious diseases, smoking cessation, and substance and alcohol abuse.

### **UNIVERSITY OF TORONTO MISSISSAUGA (UTM) • 905.569.5757 UNIVERSITY OF TORONTO SCARBOROUGH (UTSC) • 416.208.5141**

UTM AND UTSC both have local EHS offices which serve as the local point of contact for addressing Environmental Health and Safety issues, and implementing EHS programs and activities at each campus.

### **HEALTH AND WELL BEING PROGRAMS AND SERVICES**

<http://www.utoronto.ca/hrhome/hwb>

**General Inquiry – 416-978-2149**

Health and Well Bring programs and services are involved in the management of workplace safety and insurance and long-term disability at the University. The Health and Well Bring Programs and Services:

- Advises the University community on matters related to the Workplace Safety and Insurance Act, and Long Term Disability;
- Forwards accident reports to the Workplace Safety and Insurance Board (WSIB), and liaises with the WSIB on related issues;
- Monitors accident claims;
- Provides statistical analysis of accidents to departments; and
- Provides advice and assistance in the prompt return to work of ill and injured employees, and coordinates programs for the accommodation of employees with temporary or permanent disabilities.

### **External Health and Safety Resources**

The Ministry of Labour provides a range of information related to occupational health and safety at its web site, including access to legislation, alerts, and guidelines. The Ministry of Labour's web site is accessible at <http://www.labour.gov.on.ca/>

Copies of the Occupational Health and Safety Act and its regulations may also be obtained from the Ontario Government Bookstore, 880 Bay Street, Toronto (Tel. 416-326-5324).

Online copies of Ontario's legislation can be found at  
<http://www.e-laws.gov.on.ca/index.html>

For more information on Employment Standards, visit:  
<https://www.labour.gov.on.ca/english/es/index.php>

The Canadian Centre for Occupational Health and Safety (CCOHS) is a Canadian federal government agency. Their website provides useful information regarding work-related injury and illness prevention initiatives and occupational health and safety information.  
<http://www.ccohs.ca/ccohs.html>

## **APPENDIX B -- REGULATIONS MADE UNDER THE ONTARIO OCCUPATIONAL HEALTH & SAFETY ACT**

### **GENERAL SAFETY REGULATIONS:**

- **Construction Projects** (*Reg. 213/91*)
- **Industrial Establishments** (*Reg. 851*)
- **Confined Spaces** (*Reg. 632/05*).
- **Designated Substances** (*Reg. 490/09*)
- **Mines and Mining Plants** (*Reg. 854*)
- **Critical Injury Defined** (*Reg. 834*)
- **Diving Operations** (*Reg. 848, formerly*)
- **Firefighters' Protective Equipment** (*Reg. 849,*)
- **Oil and Gas - Offshore** (*Reg. 855*)
- **Roll-over Protective Structures** (*Reg. 856,*)
- **Window Cleaning** (*Reg. 859*)
- **Joint Health and Safety Committees - Exemptions from Requirements** (*Reg. 853*)

### **HAZARDOUS MATERIALS AND AGENTS REGULATIONS:**

- **Control of Exposure to Biological or Chemical Agents** (*Reg. 833*)
- **Hazardous Materials Inventories** (*Reg. 850, revoked by O.Reg. 397/93*)
- **Inventory of Agents or Combinations of Agents for the Purpose of Section 34 of the Act** (*Reg. 852*)
- **Workplace Hazardous Materials Information System** (*Reg. 860*)
- **X-Ray Safety** (*Reg. 861*)



**APPENDIX C -- TRAINING ATTENDANCE TRACKER**

(This Attendance Tracker is not an official training record, and is meant to be a tool for your reference.)

| Training Session | Date Attended |
|------------------|---------------|
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**APPENDIX D (Cont'd....) -- TRAINING ATTENDANCE TRACKER**

(This Attendance Tracker is not an official training record, and is meant to be a tool for your reference.)

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## **NOTES**

## **NOTES**

## **NOTES**

## **NOTES**

## **NOTES**

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My supervisor and I have read through and discussed together the contents of this Safety Orientation Booklet. Appropriate training will be scheduled and attended.

**Employee Name**  
(print): \_\_\_\_\_

**Employee**  
**Signature:** \_\_\_\_\_

**Supervisor's Name**  
(print) \_\_\_\_\_

**Supervisor's**  
**Signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_