**Safe Microtome Use General Guidelines**

General Guidelines are an essential component of the University of Regina’s Health & Safety Management System. This general guideline has been created to provide a set of **Do’s & Don’ts** on how to use microtome equipment. It is expected that the general guidelines will assist in the creation of a lab-specific Safe Operating Procedure.

All general guidelines along with the related Safe Operating Procedures pertaining to you or your group’s activities should be kept in a location central to the work being performed and readily available to the individuals involved in the task.

**General Safety Measures**

A microtome is used to section tissues. These devices pose potential hazards to users during sectioning and/or the cleaning process (e.g. sharp blades, exposure to unknown infectious materials or toxins in samples, contamination: tracking wax shavings through the containment zone, etc.) A microtome blade is extremely sharp and must be handled carefully.

* Each project must be risk-assessed to determine safety operating procedures. Is the material fixed or un-fixed? Does the material contain known RG2 biological materials?
* Microtome work should be conducted in a low traffic dedicated zone, to reduce contamination.
* Disposable shoe covers, dedicated to this work, should be worn, in addition to normal personal protective equipment.
* Are respirators required? Are cut-resistant gloves required (potentially infected with prions)?
* Troughs can be installed on the edge of the work bench to contain excess shavings.
* Should wrist guards be considered?
* What product is being used to freeze tissues? Histo-freeze and dry-ice can cause frostbite.
* Training must be documented and provided by a knowledgeable and responsible person before any work is conducted.
* SOPs should be developed, made available to all users, and posted near the point of operation.
* Schedule breaks and rotation of tasks to prevent errors due to fatigue.

1. Put on appropriate PPE, which includes lab coat, eye protection, and nitrile gloves. While changing the blade, cut-resistance gloves (Kevlar or stainless steel mesh) gloves must be worn under a pair of disposable nitrile gloves.
2. Obtain required equipment (i.e. puncture-proof sharps waste disposal container must be kept close to the microtome to reduce the distance that a blade would be moved).
3. The rotary handle of the microtome must always be set in the locked position when changing a paraffin block or blade. New blade should be placed in the blade holder and clamped before the rotary wheel lock is released.
4. Once the blade is seated and secured, the rotary wheel lock can be released and the knife and hold advanced to the specimen block. If adjustments need to be made to the specimen, remove the blade from the housing.
5. To remove the blade: Disposable blades must always be removed using forceps or a similar instrument. **Do not remove the blade holder from the microtome with a blade present or transport the housing with the blade present**. Place blade is sharps waste disposal container.
6. For non-disposable blades, use cut-resistant gloves when removing, cleaning, and sharpening the blade.