Annual Emergency Training For Research Labs

# General

Principle investigator: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Office space: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Research space: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# Purpose

This form is used to document completion of annual training provided to individual researchers that are using hazardous materials or hazardous processes. Completion of this annual training is a requirement of maintaining laboratory and associated permits (if any) in good standing.

# Scope

Any lab using the following materials is expected to provide annual emergency training:

* Any material that is WHMIS controlled
* Pathogenic/toxins
* Human blood, bodily fluids, and tissues (HBBT)
* Lasers
* Radioactive sources
* X-rays
* High pressure/temperature/voltage
* Cryogens
* Compressed gasses
* Any lab or field work that has been identified as higher risk after completing a risk assessment

# Refresher Training Content

Researchers using the materials/items listed above must be provided the following mandatory annual training:

* Actions to take upon exposure to hazardous materials and/or devices (e.g., chemicals, x-rays, lasers, radioisotopes, infectious materials) such as access to emergency equipment including, but not limited to eyewash stations, emergency showers or neutralizing agents.
* Clean up and disinfection/decontamination of hazardous material spills, including location of appropriate clean-up materials
* What to do in case of a power-outage or fire alarm while working with hazardous materials (e.g., power off, stop reaction)
* Who should be notified in the event of an incident
* Procedures/actions required when local alarm sounds on equipment

Refer to the appendices for examples and additional training requirements for certain regulated activities/materials/items.

Describe what training was provided (review the active training suggestions in Appendix A and the permit training minimums in Appendix B).

# Acknowledgement

## Principal Investigator

As principal investigator, I \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, have provided to the researchers under my supervision, that work with hazardous materials training on the topics above.

Principle investigator signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

## Individual Researchers and Students

By placing my name and signature in the table below, I confirm that I have received and understood the training provided.

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| Name | Signature | Date |
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# Appendix A: Training Suggestions

The end goal of this training is to ensure researchers are equipped with the knowledge to respond to various emergency situations when they occur. It can be provided in many formats, but below are two suggestions:

1. Active:
	1. Spill a non-infectious and non-toxic liquid (water is ideal) on the floor or benchtop as a substitute for a hazardous material that is used in the lab and have one or two people talk through the clean-up and decontamination process. As a group, critique how the process unfolded.
	2. Select a piece of lab equipment, identify various parts, how to properly load, and how to decontaminate the equipment should a spill occur. Discuss as a group.
	3. Have an individual identify how to proceed when working with a hazardous material and a power outage or fire alarm occurs. For example, a grad student working in a chemical hood on a chemical reaction that must be monitored and adjusted so that an uncontrolled exothermic reaction does not occur. If the fire alarm sounds, the student is expected to evacuate, but they must describe the steps they take so that the uncontrolled reaction does not occur, and so the student can safely exit the building.
	4. Simulate a local alarm that a piece of equipment you have in your lab is connected to. Alarms like this may indicate that a piece of equipment is running low on something or that there is a leak somewhere and a sensor has detected levels that require action. Lab occupants must be instructed on the procedures to take to mitigate the situation and turn off the alarm– when to contact the PI, when to initiate emergency procedures and call 911 or UW Special Constable Service.
2. Table-top scenarios:
	1. Actively quiz the researchers as a group on how to handle the situations outlined in the Refresher Training Content section namely:
		1. Spills in various locations
		2. Decontamination of equipment and surfaces
		3. Managing power outages while working with hazardous materials
		4. Many labs have local alarm systems to alert occupants that something is happening

# Appendix B: Additional Permit Training Requirements

Many of our labs require special permits or permissions before using material regulation by legislation. These labs have specific additional annual refresher training to maintain their permit in good standing and be able to continue work. Please see below for these additional requirements.

## Biosafety Training Requirements

* Location and use of biological materials inventory
* Clean up and disinfection of hazardous materials spills in centrifuges (if used)
* Clean up and disinfection of hazardous material spills in biological safety cabinets (if used)
* Refresher training on the SOPs for permitted, medium and high-risk processes
* Refresher training on waste disposal process
* Reporting requirements (when and whom to contact in the event of a spill or exposure of infectious or toxic materials)

## Chemical Training

* Refresher training on the SOPs for medium and high-risk processes
* Refresher training on all waste disposal processes, including in-lab specific locations for waste storage, specifying storage containers, labelling requirements, etc. (see [The Hazardous Waste Standard](https://uwaterloo.ca/safety-office/laboratory-safety/hazardous-waste-standard) webpage for waste segregation guidelines)
* Reporting requirements (when and to whom to report near misses, incidents, and exposures)

## X-Ray Training

* Emergency shut down procedures in case of:
	+ Hazardous material spills
	+ Fire or fire alarm
* Location and proper use of interlocks

## Radiation Training

For open-source permits:

* Hazardous material spill
* Radiation waste segregation
* Fire alarm response
* Reporting requirements – When and whom to contact in the event of a spill or exposure to radioactive materials

For sealed-source permits:

* Safe transportation (if applicable)
* All other sealed sources are exempt for additional radiation specific emergency response
* Reporting requirements – When and whom to contact in the event of a spill or exposure to radioactive materials

## Laser Training

Emergency shut down procedures in case of:

* Hazardous material spill
* Fire or fire alarm
* Beam not following intended path
* Power loss (to prevent unsupervised re-activation of laser when power is restored)
* Reporting requirements (when and whom to contact in the event of an exposure to laser beams)