Risk Management Plan

Department of Earth Sciences

University of Western Ontario

Western
Earth Sciences

Table of Contents

PLEASE NOTE: IN SOME LABS WITH LARGE SOP AND CHEMICAL INVENTORIES SEPARATE BINDERS WILL BE REQUIRED.

1) Off-Campus Group Member Emergency Contact Information

Laboratory Supervisor:_____ Off campus tel:_____
Off campus tel:_____

Name, room	Address	Phone Number

2) Departmental Emergency Contact List

IN THE CASE OF A BUILDING EMERGENCY THAT NECESSITATES AN EVACUATION, ACTIVATE THE BUILDING ALARM USING A PULL-STATION AND EXIT THE BUILDING BY THE NEAREST EXIT. BE PREPARED TO MEET THE RESPONDERS AT THE PERTH DRIVE ENTRANCE (BACK OF THE BUILDING)

*** * ***

FOR AN EVENT THAT DOES NOT REQUIRE THE IMMEDIATE EVACUATION OF THE BUILDING, BUT REQUIRES ATTENTION URGENTLY

Gerhard Pratt, Chair
Campus: 86690 B&G 1028
gpratt2@uwo.ca
Off campus: 519-266-9641 or 519-636-3632 (cell phone)

Sean Shieh, Chair of Safety
Campus: 82467 B&G 1066
sshieh@uwo.ca
Off campus: 519-266-4865

Campus Police/Fire Prevention
EMERGENCY – 911
Inquiries: 83300

Physical Plant
24 hr. Services and Maintenance: 83304

3) Safety Committee Members Contact List

Safety committee members are available to assist you with concerns related to safety and incident/accident investigations

Gerhard Pratt, B&G 1028 Extension: 86690 gpratt2@uwo.ca	Sean Shieh B&G 1066 Extension: 82467 sshieh@uwo.ca
Elizabeth Webb, B&G 0170 Extension: 80208 Ewebb5@uwo.ca	Margaret Moulton, B&G 1034 Extension 86691 mmoulto@uwo.ca
Jon Jacobs, B&G 0140 Extension 86752 jjacobs@uwo.ca	Kim Law, WSC 54 Extension 83881 krlaw@uwo.ca

4) Building Emergency Team (BET)

The B&G building only has one sound to indicate an alarm - a ringing bell. No other sounds will come from the speakers.

*ANY SOUND COMING OUT OF THE BUILDING SPEAKERS MEANS **GET OUT**!*

Each and every alarm is treated as a genuine emergency. Fire Marshalls are assigned on every floor of the building to ensure complete and prompt evacuation. You must obey the directions of the Fire Marshall - these are for your safety!

You are required to EVACUATE BY THE NEAREST EXIT and not walk through the building to a favorite exit.

Building & Floor	Names
B&G - First Floor	**Marie Schell / Katherine Johnston**
B&G - First Floor	**Robert Shcherbokov**
B&G - Ground	**Bernie Dunn**
B&G - Ground	**Kim Law / Jon Jacob**
B&G - Lower Ground	**Steve Wood**
WSC - Ground Floor	
Staging - First Floor	
Staging - Second Floor	
Building Emergency Coordinator	**Vicky Lightfoot**

5) First Aid Responders and Location of First Aid Kits

Note Responders Valid when we are completely renovated

Building & Floor	First Aid Box Location	Closest responder
B&G - First Floor	**B&G 1032**	**Marie Schell, B&G 1032**
B&G - Ground	**B&G 1038**	**Margaret Moulton, B&G 1034**
B&G – Lower Ground	**B&G 1038**	**Margaret Moulton, B&G 1034**
B&G - Basement	**B&G 1038**	**Margaret Moulton, B&G 1034**
WSC - Ground Floor		
Staging - First Floor		
Staging - Second Floor		

First Aid Kits should be inventoried once a month by the responder. Request for supplies for restocking should be sent to Robert Hudson (rhhudson@uwo.ca) who will forward them to OHS.

First Aid Kit restocking is the responsibility of OHS, currently administered by Mike Mosley (scimjm@uwo.ca) or his designate.

Risk Management Policy

Purpose of document:

The following document outlines the generic health and safety requirements for ALL laboratories in the department of Earth Sciences. Laboratory supervisors (faculty, lab managers and research scientists, etc.) must ensure that all requirements have been met.

The Department of Earth Sciences Safety Committee will ensure compliance with annual inspections.

This document is also to be used as a reference guide for laboratory employees to find safety information. Please fill in the appropriate sections.

Location of Laboratory: _____

Supervisors: _____

Last updated: _____

_____

1. Health and Safety Policy

a. *The University Health and Safety policy is posted in a conspicuous area and/or contained in the laboratory safety binder.*

The safety policy is located _____.

The University Laboratory Health and Safety Manual can also be found at http://www.uwo.ca/humanresources/docandform/docs/ohs1/manuals/uwo_lab_hs_safety_manual.pdf.

b. All staff are aware of the location of the policy and are aware of its contents

2. Health and Safety Responsibilities

a. All personnel in charge of other personnel should be:

- Performing workplace inspections
- Conducting information sessions
- Conducting incident investigations
- Conducting employee on the job training
- Correcting substandard acts or conditions
- Commending employee health and safety performance
- Performing employee safety observation

b. The supervisor or designate fulfill these tasks, specifically:

- Supervisors will inspect workplace – often this happens informally whenever the supervisor enters the lab.
- Documentation of these inspections will be made in a Laboratory Safety Binder on a monthly-to-six-weekly basis.
- Supervisors (or designate) will conduct information sessions on safety issues pertaining to their lab.
- Supervisors will ensure that an initial new employee orientation be given to individuals when they first begin working in the laboratory space. See the New Employee Orientation Checklist and Safety Requirements for Laboratory Work forms (laboratory documentation file)
- That appropriate cautionary signage be posted.
- Supervisors will ensure that all laboratory workers attend the prescribed training provided by Occupational Health and Safety (OHS)
- Supervisors will ensure that workers are aware of safety rules and follow them.
- That training on special or unusual hazards in non-routine work has been provided to laboratory workers. A record of this training should be kept on file.
- That a position hazard communication form is completed and reviewed with the employee;
- That adequate emergency equipment in proper working order is readily available (with the exception of building systems, i.e. eyewash, safety shower, fire extinguishers);

- That training in the use of laboratory specific emergency equipment and emergency response has been provided;
- Supervisors will investigate incidents, with assistance from the Safety committee, when necessary. An accident/incident investigation report must be completed for every accident or incident;
- Correction of sub-standard acts or conditions should be remedied immediately. Commonly a follow-up is made in group meetings, documentation of which may follow in the form of email and entered into the Laboratory Safety Documentation Binder. For convenience, especially in larger groups, a "Safety Officer" may be assigned to document such conditions.
- Supervisors will ensure that an appropriate alternate is appointed as supervisor when the laboratory supervisor is absent
- One should not work alone in some laboratories. When working in experimental laboratories, an honours or recently arrived graduate student should be accompanied by a qualified individual. Consult the laboratory supervisor as to who is a qualified person. The laboratory worker and supervisor share responsibility to ensure that a qualified person is present. If the individual is unavailable, contact the supervisor. Once well trained, these conditions may be relaxed. The supervisor must decide when a student is sufficiently well trained to work in the laboratory alone. Please note that in some circumstances and for some procedures, that employees should never work alone.

The University Occupational Health and Safety Guide for Supervisors can be found at www.uwo.ca/humanresources/docandform/docs/ohs1/manuals/Supervisors_Handbook.pdf

c. *All workers are to work in accordance with Health and Safety rules and are to be held accountable if they do not. Every laboratory worker is responsible for:*
    - Following all applicable safety rules and practices as outlined in this manual and by the supervisor
    - Using and wearing personal protective equipment according to instructions;
    - Reporting all accidents/incidents to their laboratory supervisor;
    - Reporting all unsafe conditions to their laboratory supervisor;
    - Completion of recommended occupational health screening programs as required by legislation;
    - Attending all applicable training courses offered by OHS.
    - Workers must not use or operate any equipment, machine, device or thing or work in a manner that may endanger themselves or any other worker.
    - Workers must not engage in any prank, contest, feat of strength, unnecessary running or rough and boisterous conduct.

    Our policy is to promote and encourage the adoption of a safe work culture through education and by example. However, in the case that a Worker of a Supervisor refuses to abide by safety recommendations and policies the steps outlined in the **Policy for Resolution of Unsafe Working Conditions** will be followed.

d. A visitor policy is in place to ensure they are aware of University Health and Safety Policies before entering any labs.

All laboratory visitors must:

- Dress appropriately, as required by the laboratory.
- Wear the personal protective equipment required to be worn in the laboratory.
- Be accompanied by a Western representative who is responsible for them in the case of an emergency. The Western rep is either the person being visited or as assigned by the lab supervisor
- Follow the rules and procedures of the laboratory.

Visitors to the lab are required to wear: _____
_____
_____
_____

Anyone unable to comply with the above will not be allowed entry into the lab.

3. Posted Health and Safety Materials

a. *All personnel have access to all up-to-date Material Safety Data Sheets (MSDSs*)

A minimum acceptable standard is that MSDS information can be accessed by the internet from a direct link (icon) on the desktop of laboratory computers.

The best practice is to keep hardcopies for the most hazardous, commonly used chemicals in the laboratory in the Laboratory Safety Documentation Binder used. Hardcopies of MSDS that are "hard to find" because the compounds are rare, specialty or otherwise unusual should be kept within the laboratory and accessible to lab workers.

The MSD sheets are located _____.

b. Emergency Instructions including:

Phone contact list

An up-to-date telephone contact list of all laboratory workers posted in a conspicuous place and known by all should be maintained. This information should be duplicated in the Laboratory Safety Documentation Binder.

The phone contact list is located _____.

Primary and Secondary Building evacuation route

Laboratories in Earth Sciences have been posted with emergency evacuation and safety equipment maps. Evacuation routes should be posted in a conspicuous place near the exits and all employees should be made aware of these routes.

Evacuation route maps are posted (where): _____.

Location of emergency equipment (Shower, pull station, fire extinguisher)

All employees should be made aware of the location of emergency equipment before working in a laboratory. The supervisor is responsible for conducting new employee orientation tours that include the location of all safety equipment.

Location of nearest shower: _____.

Location of nearest fire alarm: _____.

Location of nearest fire extinguisher: _____.

Location of nearest fire blanket: _____.

Location of nearest first aid kit: _____.

Location of nearest eye-wash station: _____.

Other: _____.

Hazard signs at Lab entrances as required by UWO handbook

All laboratories in Earth Sciences should have hazard signs posted on the outside of the laboratory doors as required by the UWO handbook to alert employees, visitors and emergency personnel of potential dangers inside the laboratory.

Hazard signs required for this lab include: _____.

4. Health and Safety Standards & Procedures

a. *Each laboratory should have information on safety standards and procedures in place to deal with accidents such as Chemical Spill, Radiation Spills and Biohazard Spills. Fill out the ones that apply to your laboratory:*

Information on chemical spills is located: _____.
Information on radiation spills is located: _____.
Information on biohazard spills is located: _____.

b. *Each lab has a Fire/Safety Emergency Plan*

The Fire/Safety Emergency plan is located: _____.

c. *Any specialized lab procedures have written Standard Operating Procedures (SOPs) that are up-to-date and readily available*

Laboratory Supervisors will determine for which procedures/apparatus an SOP is necessary and prepare one for the lab. In some cases, the workers (as a designated of the Supervisor) may prepare SOPs.

When available, published literature may substitute for SOPs. It is the responsibility of individual Laboratory Supervisors to judge if these are appropriate for their specific needs.

The SOP's are located: _____.

d. *Staff are aware of the procedure to report Hazards*

Workers are to report dangerous situations directly to their supervisor. It is also standing policy that "questionable" odours or situations are immediately investigated by a member of the Safety Committee. These situations are evaluated on the basis of immediacy and danger, i.e. should a general evacuation take place. Laboratory Supervisors and Workers are aware that should an incident or accident occur that they must follow the reporting structure given on the Accident/Incident Reporting Form & Investigation Report.

Copies of the Accident/Incident Reporting Form & Investigation Report can be found: _____.

e. Staff are aware of the procedure to Refuse unsafe Work

Supervisors should make their employee's aware of their rights to refuse unsafe work.

The right to refuse unsafe work policy can be found: http://www.uwo.ca/humanresources/docandform/docs/ohs1/procedures/work_refusal.pdf.

f. Employees use the proper personal protective equipment at all times, when necessary.

Some laboratories have dress code requirements for safety reasons. All employees must comply with these regulations whenever they enter the laboratory. Certain laboratory procedures will require additional protective equipment.

Minimum proper personal protective equipment to enter and/or work in this laboratory includes: _____.

g. Any Non-routine Work that has been identified has SOPs and pre-work reviews to address the hazards

Any non-routine work will have an associated SOP or the supervisor (or designate) has trained the worker appropriately. This training includes a pre-work review to address the hazards.

h. Does all equipment have safety features in place – e.g., guarding.

Safety features of equipment necessary for the safe and proper operation of equipment will remain in place and not be defeated.

i. Labs are tidy and clutter free

j. All supplies lists are up-to-date

5. Health and Safety Representative/ Committee

a. All staff know who their health and safety representatives on the Joint Health and Safety Committee are and how to contact them if they are needed.

The members of the Departmental health and safety committee will vary from year to year. Up-to-date information can be found _____.

6. Health and Safety Education/ Training

a. All employees must attend employee orientation
b. All personnel have been trained in the following :

Check which ones apply to your laboratory:

(1) WHMIS-Comprehensive (University) – required for everyone on campus _X__.
(2) New Employee Health and Safety Orientation (University) _X__.
(3) Laboratory and Environmental/Waste Management Safety Workshop (UWO) ____.
(4) Biosafety (University) ____.
(5) Laser Safety (University) ____.
(6) X-ray Safety (University) ____.
(7) Computer Lab Health and Safety Orientation (Supervisor) ____.
(8) Field Research and Teaching Safety Orientation (Supervisor) ____.
(9) Location and Use of Deluge Shower and eyewash station (Supervisor) ____.
(10) Complete a position hazard communication form, available at http://www.wph.uwo.ca/newposition.htm.

Items 1-6 may be completed by registering at http://www.uwo.ca/humanresources/facultystaff/h_and_s/h_and_s_index.htm

For all training provided, records must be kept on file and a copy of this page should be sent to Margaret Moulton (mmoulto@uwo.ca)

Training records will be kept by the Laboratory Supervisor in the Laboratory Safety Documentation Binder.

c. All personnel are given initial job instruction and task-specific training before any new task is performed

d. All personnel are instructed on the emergency procedures before commencing any work.

This will include but is not limited to:

The phone number to call for emergency assistance
The location of the nearest fire alarm pull station
The location and class of the nearest fire extinguisher
The building evacuation route upon hearing fire alarm
The location of chemical spill kits
Fire extinguisher and agent use (specific training is required in certain labs)
The location and use of secondary exits

Records of training must be kept on file

These aspects are covered by the Departmental New Employee Orientation Checklist. A signed copy will be kept within the Laboratory's Safety Documentation Binder and a copy will be sent to the Department's main office where it will be kept on file by Margaret Moulton.

e. *Employees must be aware of and trained on any designated substances in their work area*

The link to the University maintained list of designated substances will be posted on the Departmental Safety web site, and all members of the Department will be made aware of this by an annual email.

7. First Aid Requirements

a) *First aid kits must be in quick and easy access for all employees*

Location of nearest first aid kit: _____.

b) *There must be a qualified first aider that works in close proximity to each kit and they must post their certificate with the kit*

Employee with First Aid Training: _____.

c) *This kit is to be inspected monthly to ensure contents are present*

First aid responders will be responsible for confirming the contents of First Aid Kits and reporting deficiencies to the Chair of the Safety Committee

d) *Staff are aware of Western's transportation of an injured worker policy.*

Call 9-1-1 or a taxi (for less urgent situations) – do not use personal transportation.

8. Health and Safety Inspections

a) *Supervisors must do regularly scheduled inspections (monthly) of their work areas and these should be recorded for future reference*

Supervisors must oversee regular inspections (suggested monthly) of their work areas and these should be recorded for future reference. The inspections may be done by a designate. Documentation of these regular inspections should be kept in a Laboratory Safety Documentation Binder.

b) *Pre-use inspections should be conducted before any equipment is used. These should be recorded on a standard form and any problems should be followed up*

Pre-use inspections will be conducted for equipment requiring this, as judged by the Laboratory Supervisor. A log or record book may be used to document problems that will be followed up.

9. Preventive Maintenance

Maintenance should be scheduled, recorded, and performed by a qualified person for any identified equipment requiring this.

Maintenance will be performed by a qualified person for any equipment identified by the Laboratory Supervisor or Manufacturer requiring it.

10. Injury/Incident Investigations

a) *Staff is aware that all accident/incidents must be reported to a supervisor so a proper report can be filled out*

b) *All supervisors have been trained on accident investigation including:*

scene assessment
interviewing
identifying contributing factors
filling out the report
assigning recommendations for corrective action follow-up

Supervisors are superficially trained in accident investigation as per the Supervisor Training Seminar offered by OHS. As such, accident investigations may require the assistance of a Safety Committee member, OHS, campus police or Fire Prevention, as applicable.

Copies of the Accident/Incident Reporting Form & Investigation Report can be found:
www.uwo.ca/humanresources/facultystaff/h_and_s/acc_inc/ai_report_steps.htm

11. Early and Safe Return to Work

a. *Staff should be aware of the early and safe return to work program*

The program is run by Rehabilitation Services.
http://www.uwo.ca/humanresources/facultystaff/h_and_s/rehab/rehab_index.htm

b. *Supervisors should be aware of the return to work process*

7) Inspection Checklist for Safety Committee

Earth Sciences Risk Management Plan
Inspection Checklist for Safety Committee

Location: _____

Principal Investigator: _____

Type of Work: _____

Date: _____

This checklist will be verified by a member of the Earth Sciences Safety Committee by:
D= Documentation; I = Interview; O = Observation.

The following pages are an example of the inspection checklist that will be used to evaluate whether or not your laboratory is compliant with the Earth Sciences Safety Policies.

For each item on the list the committee will be looking for evidence of

1) **Proper documentation where required (Documentation)**
2) **Safety awareness of employees (Interview)**
3) **Safe laboratory practices (Observation)**

This checklist is provided for your information, but supervisors are not required to complete this inspection themselves. The inspection will be performed by members of the Earth Science Safety Committee and members of Occupational Health and Safety (UWO).

Earth Sciences Risk Management Plan
Inspection Checklist for Safety Committee

Location: _____

Principal Investigator: _____

Type of Work: _____

Date: _____

This checklist will be verified by a member of the Earth Sciences Safety Committee by:
D= Documentation; I = Interview; O = Observation.

1. Health and Safety Policy Statement

Guidelines	Verify
The University Health and Safety policy is posted in a conspicuous area	
All staff are aware of the location of the policy and are aware of it's contents	
All staff are aware of the location of the laboratory safety binder are aware of it's contents	
Notes:	

2. Health and Safety Responsibilities

Guidelines	Verify
All personnel in charge of other personnel should be: - Performing workplace inspections - Conducting information sessions - Conducting incident investigations - Conducting employee on the job training - Correcting substandard acts or conditions - Commending employee health and safety performance - Performing employee safety observations All these are discussed in Supervisor training	
All workers work in accordance with Health and Safety rules and are held accountable if they do not	
A visitor policy is in place to ensure they are aware of University Health and Safety Policies before entering any labs	
Notes:	

3. Posted Health and Safety Materials

Guidelines	Verify
All personnel have access to all up-to-date Material Safety Data Sheets (MSDSs)	
Emergency Instructions including: - Phone contact list - Primary and Secondary Building evacuation route - Location of emergency equipment (Shower, pull station, fire extinguisher)	
Hazard signs at Lab entrances as required by UWO handbook	
Notes:	

4. Health and Safety Standards & Procedures

Guidelines	Verify
If applicable, ensure that each lab has information readily available on: - Chemical Spills - Radiation Spills - Biohazard Spills	
Each lab has a Fire/Safety Emergency Plan	
Any specialized lab procedures have written Standard Operating Procedures (SOPs) that are up-to-date and readily available	
Staff are aware of the procedure to report Hazards	
Staff are aware of the procedure to Refuse unsafe Work	
Employees use the proper personal protective equipment at all times, when necessary	
Any Non-routine Work that has been identified has SOPs and pre-work reviews to address the hazards	
Does all equipment have safety features in place – e.g. guarding, backflow protection?	
Labs are tidy and clutter free	
Notes:	

5. Health and Safety Representative/ Committee

Guidelines	Verify
All staff know who their health and safety representatives on the Joint Health and Safety Committee are and how to contact them if they need to	
Notes:	

6. Health and Safety Education/ Training

Guidelines	Verify
All employees must receive employee orientation and this must be documented in the Laboratory Safety Binder	
All personnel have been trained in the following: - WHMIS – Comprehensive (UWO) - New Employee Health and Safety Orientation (UWO) - Laboratory and Environmental/Waste Safety (UWO) - Location and Use of Deluge Shower (Supervisor) - Location and Use of Eyewash station (Supervisor) - Biosafety, Radiation, X-ray and Laser Safety (UWO) - Computer Lab Health and Safety Orientation (Supervisor) - Field Research and Teaching Orientation (Supervisor) For all training provided, records must be kept on file	
All personnel are given initial job instruction and task-specific training before any new task is performed.	
All personnel are instructed on the emergency procedures before commencing any work. This will include but is not limited to: - The phone number to call for emergency assistance - The location of the nearest fire alarm pull station - The location and class of the nearest fire extinguisher and fire blanket - The building evacuation route upon hearing fire alarm and the location and use of secondary exits - The location of chemical spill kits - Fire extinguisher and agent use (specific training is required in certain labs) - Location of nearest shower, eyewash station and first aid kit Records of this training must be kept on file in the Lab Safety Binder	
Employees must be aware of and trained on any designated substances in their work area	
Supervisors have kept a record of any information sessions they have given to their personnel pertaining to safety issues in their lab	
Supervisors have filled out a position hazard communication form for each employee. These forms can be completed with the employee.	
Notes:	

7. First Aid Requirements

Guidelines	Verify
First aid kits must be in quick and easy access for all employees	
There must be a qualified first aider that works in close proximity to each kit and they must post their certificate with the kit	
This kit is to be inspected monthly to ensure contents are present	
Staff are aware of Western's transportation of an injured worker policy	
Notes:	

8. Health and Safety Inspections

Guidelines	Verify
Supervisors must do regularly scheduled inspections (monthly) of their work areas and these should be recorded for future reference in the Laboratory Safety Binder.	
Pre-use inspections should be conducted before any equipment is used. These should be recorded on a standard form and any problems should be followed up.	
Notes:	

9. Preventive Maintenance

Guidelines	Verify
Maintenance should be scheduled, recorded, and performed by a qualified person for any identified equipment requiring this	
Notes:	

10. Injury/Incident Investigations

Guidelines	Verify
Staff is aware that all accident/incidents must be reported to a supervisor so a proper report can be filled out	
All supervisors have been trained on accident investigation including: - scene assessment - interviewing - identifying contributing factors - filling out the report - assigning recommendations for corrective action - follow-up	
Notes:	

11. Early and Safe Return to Work

Guidelines	Verify
Staff should be aware of the early and safe return to work program	
Supervisors should be aware of the return to work process	
Notes:	

Laboratory Space

Number of people in the lab

Grad Students _____ Staff _____

Research Fellows _____ Undergrad Students _____

Type of Work

Please list type of work done and constraints of work,
e.g. chemicals used, processes used, equipment, etc: _____

_____

_____

_____

_____

Facilities

Fumehoods

# of Fumehoods _____ Linear ft _____

Person/Fumehood _____ Linear ft/person _____

Benches

Material: _____ Is material suitable? Yes □ No □

If no – describe: _____

Bench Space	Square Feet	Comments
Instrumentation		
Wet Bench		
Total		
Wet Bench Space/Person (SqFt)		

Laboratory Self Assessment Checklist (LSAC)

Are their outstanding items to be addressed on the LSAC? Yes □ No □

_____

Storage

Does the lab have the following?		**Is the Storage adequate?**
Fridge/Freezers	Yes □ No □	Yes □ No □
Chemical Storage Shelves	Yes □ No □	Yes □ No □
Toxic Chemicals	Yes □ No □	Yes □ No □
Flammable/combustible Liquids	Yes □ No □	Yes □ No □
Chemicals requiring segregation	Yes □ No □	Yes □ No □
Glassware	Yes □ No □	Yes □ No □
Lab supplies	Yes □ No □	Yes □ No □
Chemical Waste	Yes □ No □	Yes □ No □
Gas Cylinders	Yes □ No □	Yes □ No □
Liquid Nitrogen	Yes □ No □	Yes □ No □

If the storage is not adequate, please describe: _____

_____

_____

_____

Lab Requirements			
Benches		**Fumehoods**	
Material		Number	
Sq Feet		Ln Feet	
Other Considerations:			
What needs to be done to make your lab safer?			

9) New Employee Lab Orientation Checklist

Employee Name: _____ Date: _____

- ☐ Safety Glasses must be worn at all times where hazards are present
- ☐ Footwear must cover the entire foot
- ☐ No bare legs
- ☐ No food/food garbage in labs
- ☐ Call 911 for all emergencies
- ☐ Locations and use of PPE (gloves, apron, shield, oven mitts), where applicable
- ☐ Safety glasses for visitors, laser safety glasses for visitors, whenever necessary
- ☐ Requirement for Radiation Safety Awareness for visitors, if applicable
- ☐ Locations of primary and secondary fire exits
- ☐ Locations and use of fire alarm pull stations
- ☐ Location and use of fire extinguishers and class (including metals)
- ☐ Location and use of fire blanket
- ☐ Locations of lab fire/emergency plan
- ☐ Locations and use of chemical spill kits
- ☐ Locations and use of safety showers
- ☐ Locations and use of eyewash stations
- ☐ Location of first aid kit
- ☐ Report all injuries or dangerous incidents to supervisor immediately
- ☐ Doors must be locked when lab unoccupied
- ☐ Locations and use of chemical waste disposal supplies and pickup
- ☐ Awareness of hazardous equipment in lab
- ☐ Location of equipment manuals
- ☐ Location of SOPs, when applicable
- ☐ Location of lab safety manual, when applicable
- ☐ Location of radiation safety manual, when applicable
- ☐ Location of biosafety manual, when applicable
- ☐ Location of X-ray safety manual, when applicable
- ☐ Location of laser safety manual, when applicable
- ☐ Chemical storage locations in labs
- ☐ Location of MSDS information and hazardous materials inventory list, when applicable.
- ☐ Location of broken glass container, if applicable
- ☐ Pointers on the use of pressurized gas cylinders
- ☐ List of required OHS training courses
- ☐ Location of emergency phone list of employees
- ☐ A hazardous position communication form has been completed by the employee, when applicable (staff and graduate students). Found at: http://www.wph.uwo.ca/newposition.htm
- ☐ Designated substances - identified on campus: lead, mercury, arsenic, benzene, isocyanates, asbestos, and crystalline silica with particle sizes < 10μm (not chromatography or TLC silica).
- ☐ Don't be afraid to ask if there is a concern

Employee Signature: _____

Supervisor Signature: _____

10) Conditions of Key Issuance

The keys for the rooms listed below will only be issued under the following conditions.

1. The form, **SAFETY REQUIREMENTS FOR LABORATORY WORK,** has been completed and returned.

2. That all conditions for the issuance of keys by the **Keys Office** have been met.

3. That all keys must be returned at the end of your employment/study in the Department of Earth Science. Failure to return your keys may result in the following **penalties.**

A) Students. Withholding of final marks and/or paycheque until keys are returned

B) Employees. Withholding of final paycheque until keys are returned.

Laboratory Supervisor:

Please authorize the room number(s) for the keys(s) to be issued.

B&G_____, B&G_____, B&G_____, B&G _____.

STG_____, STG_____

_____ _____

(Supervisor Signature) (Date)

Employee/Student:

I have **read** the above and **agree** to the conditions.

_____ _____

(Employee/Student Signature) (Date)

11) Safety Requirements for Laboratory Work

Before beginning any laboratory work and before laboratory keys can be issued this form must be completed and returned to Health and Safety Administrator, HSA 117.

1. Laboratory Safety Training

It is mandatory that you attend all of the following workshops/seminars, offered by Occupational Health and Safety, on the earliest date that they are next given.

i) WHMIS -Comprehensive
ii) Employee Health and Safety Orientation
iii) Laboratory/Environmental Waste Management Workshop

- **All employees of the Department who work in the laboratory must attend all three. Additional courses may be required; consult your supervisor.**

- **In addition, all employees must fill the on-line Hazardous Position Communication Form at: http://www.wph.uwo.ca/newposition.htm**

- **Summer Students and ES 490 Students need only attend the WHMIS seminar and are exempt from filling out the Hazardous Position Communication Form.**

- **It is your responsibility to register yourself for the next available session in each course.** Online registration and the dates and times of upcoming sessions can be found at **http://www.uwo.ca/humanresources/facultystaff/h_and_s/training/training_idx.htm**

NOTE: WHMIS training is on-line through the UWO OWLCT server. Recertification is required every three years. Existing staff and graduate students have already been set up in the system. Simply go to https://webct.uwo.ca/ and use your UWO Computer ID and password to log in.

Proof of completion of training requirements must be provided to Margaret Moulton, your supervisor, or in other case the lab manager.

2. Laboratory Safety Manual

You must have your own copy of the "Laboratory Health and Safety Manual for General Laboratory Practices. It is the policy of this University that all employees of Department of Earth Sciences must adhere to the practices, guidelines and policies described in this manual.

Please read the manual thoroughly and discuss any aspect that you do not fully understand with your supervisor. Keep your copy handy. It is also available and kept up to date at:
http://www.uwo.ca/humanresources/facultystaff/h_and_s/lab_safety/lab_safety_idx.htm

3. Laboratory Orientation

Safety is a shared responsibility between you, your co-workers and your supervisor. **Be sure to ask your supervisor to acquaint you with the location and operation of all building safety devices** such as the fire alarm tone, eyewash, safety shower, fire extinguishers, fire blankets, first aid kits, evacuation routes and exits, spill control and containment kits, laboratory evacuation procedure, etc.. Familiarize yourself with the Safety link on the Departmental website.

You and your supervisor must also review the operation of the **fumehoods** and all other instrumentation you may need to operate and complete the orientation checklist.

4. Laboratory Working Hours and Conditions

You should not work in the laboratory alone (Laboratory Safety Manual, 8.2)**.** We recommend that a qualified graduate student, PDF or faculty member must also be present. Consult your faculty supervisor as to who he/she designates as qualified for the work you will be performing. It is you and your supervisor's shared responsibility to ensure that person is present.

It is your right to work in a safe working environment. It is your supervisor's responsibility to ensure that your working environment is safe. It is your responsibility to tell your supervisor of any conditions that you believe are unsafe. Until you are satisfied that your working conditions are safe you may refuse to work.

REMEMBER THAT SAFETY IS A SHARED RESPONSIBILITY BETWEEN YOU AND YOUR SUPERVISOR.

To ensure that you and your supervisor understand the importance of safety in all laboratories in the Department of Earth Sciences, please complete the following.

I _____(supervisor) have read the above and will ensure that

_____(laboratory worker) has understood and will comply fully with the above conditions before beginning any work.

Signed _____ Date_____
(Supervisor)

I_____(laboratory worker) have read the above and will ensure that I will comply fully before beginning any laboratory work.

Signed_____ Date_____
(Laboratory Worker)

Only after completion of this form may keys to the laboratory be issued.

Cc: Supervisor
Laboratory Worker

12) Record of Safety Training Completed by Workers

Worker's Name (printed)	Safety Training Course	Date Completed	Initials (attach certificate in appendix, if available)	
			Worker	Supervisor

13) Specific Training Record

You must receive hands on training before using this machine/procedure
Additional safety information:

Name of New User	e-mail	Department	Phone	Supervisor	Date Training Completed	Initials User	Initials Trainer

14) MONTHLY INSPECTION CHECKLIST

Date (month/year): _____

General Information

Y	N	N/A	
			Laboratory Safety Documentation Binder is accessible
			Laboratory Safety Documentation Binder is up-to-date
			Is an emergency contact sign posted with names and numbers of key personnel?
			Are UWO accident/incident forms available and accidents/incident procedures posted?

Basic Safety

Y	N	N/A	
			Are aisles, walkways and exits clear and all walking surfaces slip free?
			Are routes for emergency evacuation posted?
			Is the access to all emergency equipment and services clear?
			Are shelves, bookcases etc. sufficient for the intended load and well secured?
			Are records kept of workplace equipment inspection and maintenance?
			Is all mechanical, cutting, chemical and/or ionizing equipment properly shielded?
			Are all vacuum and/or pressure systems properly shielded or guarded?
			Are proper Dewars being used for cryogenic liquids? (i.e. liquid nitrogen).
			Does all electrical equipment have (CSA, ULC, etc.) approval stickers/plates?
			Is all equipment connected directly to the supply without the use of extension cords?
			Is electrical equipment (without GFCI protection) well clear of wet environments?
			Are compressed gas cylinders individually and securely restrained?
			Is the proper regulator being used for each compressed gas?
			Maintenance has been scheduled, recorded, and performed for equipment requiring this.

WHMIS

Y	N	N/A	
			Is the laboratory/emergency equipment posted according to UWO guidelines?
			Are all hazardous materials labeled according to section 8.3?
			Is there a current inventory all hazardous substances in the lab?
			Do the workers know where to find current (< 3 yrs.) MSDS's for materials being used?
			Have all workers received the prescribed training from OH&S and are current?

Hygiene Practices

Y	N	N/A	
			Are chemicals stored and segregated according to UWO regulations?
			Is waste segregated/streamed/stored/labeled properly?
			Are large/heavy containers stored less than 2 meters above the floor?
			Are explosion proof refrigerators used for the storage of flammable liquids?
			Are there < 10 liters of flammable liquids outside an approved (yellow) cabinet?
			Are fumehoods being used as required and free of storage and clutter?
			Is the fumehood flow alarm of flow indicator present and working properly?
			Is proper personal protective equipment being worn by all lab personnel?
			Is the lab free of all evidence of food consumption in hazard areas?

Emergency Equipment and Procedures

Y	N	N/A	
			Do personnel know the location of the closest First Aid Kit and Spill Kit?
			Has the contents of the First Aid kit been checked and updated this month?
			Is there an Eyewash Station and Safety Shower (<25m) available as needed?
			Are the Fire Extinguishers appropriate and checked regularly (monthly)?
			Do personnel know the Emergency Evacuation Plan and route of exit from the workplace?
			Is a visitor policy in force, are visitor safety glasses available?

Corrective actions or follow-up to be done (and by whom):

_____
_____
_____
_____

Supervisor or Safety Designate that completed inspection: _____

The completed checklist should be put in the lab safety binder record each month

15) Accident/Incident Reporting Procedures and Documents

General Accident/Incident Reporting Steps:

Priority Steps

The Accident / Incident scene must be secured and made safe to prevent further accidents until the investigation is complete

Step 1

All medical and first aid is attended to.

Step 2

Steps for Supervisors

The Supervisor conducts investigation and completes the Accident / Incident Report Form.

Step 1

Complete the upper part of the form with the person(s) involved. If there is a dispute separate reports may be filed.

Step 2

Analyse contributing factors and from these determine the corrective actions needed. Indicate these on the form.

Step 3

Distribute copies of the Accident / Incident Report Form: as follows:
Occupational Health and Safety
Department Chair or Director/Manager / Administrator
Employee/Student/Volunteer
Originator/Supervisor

Step 4

Critical Accident/Incident Reporting Steps:

A critical injury means an injury of a serious nature that...

- places life in jeopardy,
- produces unconsciousness,
- results in substantial loss of blood,
- involves the fracture of an arm or a leg but not a finger or toe,
- involves the amputation of a leg, arm, hand or foot but not a finger or toe,
- consists of burns to a major portion of the body,
- or causes the loss of sight in an eye.

Source: Occupational Health and Safety Act of Ontario, Regulation 834.

If a workplace injury meets the definition of a critical injury take the following steps:

Step 1

Ensure the accident victim has received proper first aid.

Step 2

Secure accident scene and prevent any evidence from being removed prior to the completion of the investigation.

Step 3

Contact Occupational Health and Safety by calling directly to ext 84741 or through UWO police at 911.

For initial documentation of a critical injury, use the Critical Injury Report Form (below)

Attachments:

Safety Procedure - Accident-Incident Report Investigation

Accident-Incident Reporting Form & Investigation Report Form

Safety Procedure- Injury & Illness Reporting

Critical Injury Report Form

15a) SAFETY PROCEDURE – ACCIDENT/INCIDENT INVESTIGATION

EFFECTIVE DATE: March 1, 2007

1. PURPOSE

The purpose of this procedure is to identify the duties, roles and responsibilities of workplace parties so that an effective and immediate accident/incident investigation and reporting process is in place. This will include identifying all contributing factors of the accident/incidents and hazardous situations and making the necessary recommendations to prevent the accident/incident from recurring.

2. SCOPE

- **Review regularly** reports of the following injury/incident types to determine any investigation needs:
    - First Aid
    - Health Care
    - Near Miss
- **Definitions**
    - *First Aid* - When an employee, as a result of an accident in the workplace receives on-site first aid assistance. Includes cleaning minor cuts, scrapes or scratches; treating a minor burn, applying bandages and/or dressings, cold compress, cold pack, ice bag, and splints.
    - *Health Care* – An injury that results in attention received from a recognized health care provider but that does not result in time away from scheduled work or a wage loss
    - *Near Miss* – An event that under different circumstances could have resulted in physical harm to an individual or damage to the environment, equipment, property and/or material

The following categories of accident/incidents require an immediate investigation as they may produce a loss to people, equipment, material and environment:

- *Fatality* – An injury that results in loss of life
- *Critical Injury* – As defined in the Ontario Regulation 834/90 it is a critical injury if the injury places life in jeopardy; produces unconsciousness; results in substantial loss of blood; involves the fracture of a leg, or arm but not a finger or toe; involves the amputation of a leg, arm, hand, or foot but not a finger or toe; consists of burns to a major portion of the body; or causes the loss of sight in an eye.
- *Lost Time* – A work related injury that results in the injured employee missing scheduled time from work resulting in a wage loss
- *Property Damage* - When there is significant property damage, a value of $250 is suggested as a general guideline to be used by a supervisor, although other factors could impact on the need and level of investigation and reporting
- *Occupational Illness* – A condition that results from exposure in a workplace to a physical, chemical or biological agent that normal physiological mechanisms are affected and the health of the worker is impaired
- *Environmental Release* – An accidental discharge of a physical, biological or chemical substance into the workplace and/or community
- *Fire/Explosion* – An event where undesired combustion occurs

3. COMMUNICATION

The results and corrective action taken for the accident/incidents will be communicated to the employees in a number of ways:

- Minutes of the health and safety committee meetings
- Postings on the safety bulletin boards
- Follow up on Action Plan completed by the supervisor/leader to affected individuals

Notification requirements are the responsibility of Occupational Health and Safety(as outlined below) to notify the following:

External

- Ministry of Labour (MoL) - must be notified immediately by phone, of any fatalities or critical injuries, with this to be followed by a written investigation report within 48 hours.
- Ministry of Labour (MoL) - Fire and Explosion – immediately if it results in an injury.
- Ministry of Environment (MoE) – Chemical releases – immediately.
- Federal - Dangerous goods (spills) – Immediately
- Workplace Safety & Insurance Board (WSIB) – within 3 days or upon first becoming aware of, any accident that causes injury which results in Health Care or Lost Time

Internal

- Joint Occupational Health and Safety Committee
- Wellness Information Coordinator, Rehabilitation Services - when an accident causes injury that results in Health Care or Lost Time. An Employees Report of Accidental Injury or Industrial Disease (FORM 7) must/will be sent to the Workplace Safety and Insurance Board (WSIB) within 3 days of the accident or upon first becoming aware by the Wellness Information Coordinator
- Corporate Insurance Administrator, Human Resources – property, vehicle and/or equipment damage

4. ROLES & RESPONSIBILITIES

Supervisor (Investigator) Responsibilities

- The supervisor in the area where it happened investigates the accident/incident and completes the Investigation Report within 24 hours of the accident/incident or hazardous situation. Fax the completed Accident/Incident Reporting Form and Investigation Report to 519-661-2079 (ext 82079 on campus). As well, the supervisor will ensure that the employee receives the ESRTW documentation package (located on the Rehabilitation Services website, contains the Functional Accommodation Form, "Dear Treating Practitioner" Letter, Confidentiality Guideline and WSIB – ESRTW Information Sheet) if the employee is seeking medical aid and/or losing time from work.

- In the case of personal injury the supervisor ensures that the injured employee(s) receive immediate and appropriate first aid and/or health care.

- Reports those injuries that result in critical injury to Occupational Health & Safety (OHS) immediately by calling ext 82198. During non-business hours the supervisor should call Campus Community Police Services at ext 83300 or 911 from a campus phone.

- In conducting the accident/incident investigation and completing the Investigation Report, the supervisor must ensure the following has been completed:

    - *Assessment of the Scene*

        i) Inspection of the site, equipment, material that were involved in the accident/incident
        ii) Site must be secured especially in the case of a critical injury
        iii) Use of photographs, sketches, drawings of the accident/incident scene indicating sizes, distances, and weights of objects as appropriate

    - *Interviewing*

        i) Interview employee(s) involved
        ii) Interview any eyewitnesses
        iii) Interview outside experts if applicable i.e. suppliers, equipment designers
        iv) Interviews must be documented
        v) Interviews should be conducted as soon as possible
        vi) Interviews should be conducted one-on-one in a quiet place

    - *Identifying the contributing factors*

        i) Factors to consider are people, equipment, material, environment, process

    - *Write the report*

        i) Record all findings of the accident/incident investigation on the standard investigation reporting form ensuring that all requirements of the written investigation procedure are captured

ii) Accident/Incident Reporting Form and Investigation Report is available online at: http://www.uwo.ca/humanresources/docandform/forms/ohs/aiir.pdf
iii) Copies of the completed Accident/Incident Investigation form are distributed as per the distribution list on the form

- *Make recommendations for corrective action*

i) Responsibilities must be assigned (investigators, management, technical personnel) for completion of the Action Plan
ii) Record on Investigation Report form under Action Plan
iii) Recommendations should focus on the corrective action(s) to all the contributing factors identified
iv) Recommendations should specify What, Why and How the corrective actions will be completed

- *Ensure recommendations are acted upon*

i) Assign responsibility for the follow-up of the corrective action(s)
ii) Record on Action Plan section of the Investigation Report form
iii) Detail what has been done, who has completed the actions and when the actions were completed

- *Ensure the recommendations are communicated to employees by either the work unit or university*

- Please note that when a department fails to report the accident/incident within the required time, any fines levied by the WSIB will be charged to that department.

- The supervisor may involve others and is encouraged to seek advice on corrective measures and other input as needed from Occupational Health & Safety (OHS) and/or Rehabilitation Services and/or Workplace Health Services. These areas have personnel with extensive training and/or licensed professionals in health and safety, ergonomics and physical health/medicine.

Management (Department Chair or Unit Head) Responsibilities

- Signs and ensures that completed Accident/Incident Investigation reports are faxed to 519-661-2079 (ext 82079 on campus), (Rehabilitation Services, Rm 4159, Support Services Building) within one working day

- Reviews all Accident/Incident Investigation Reports for his/her department and identifies the causes or contributing factors. Ensures all corrective actions have been taken to prevent recurrence and have been communicated to all employees in the work area. Utilizes Occupational Health and Safety (OHS) resources as needed to ensure that such actions are completed. Other service units may need to be contacted to assist in implementing corrective actions.

- Assists or works in cooperation with OHS and/or the local health and safety committee and/or the Joint Occupational Health and Safety Committee as needed to correct or

address identified matters of health and safety within his/her department.

Joint Occupational Health & Safety Committee Responsibilities

- Reviews and analyzes accident/incident, details identifying areas of concern and makes recommendations to administration as necessary on matters of health and safety.
- The certified worker member will participate in the investigation of all "critical injury" accidents
- Assists as needed in the implementation of corrective actions.

Occupational Health & Safety Responsibilities

- Reviews all Accident/Incident Reporting Forms and Investigation Reports and follows up as appropriate/required. Ensures that recommendations are appropriate and that preventative and corrective actions have been taken. Assists or provide direction as needed for the implementation of corrective actions.
- Ensures reports are distributed to any areas requiring information for subsequent follow up of additional corrective action or for injury treatment and rehabilitation and/or accommodation purposes.
- If an accident results in a "critical injury", OHS will immediately notify the following:
  - Ministry of Labour (MoL) - Within 48 hours, will send a written report to the Ministry of Labour.
  - Joint Occupational Health and Safety Committee certified worker member or the worker representative for the appropriate employee bargaining association (i.e. Staff,Faculty,PMA,CUPE 2361,CUPE 2692 etc.). If bargaining unit representative cannot be reached, the management certified member is contacted.
  - Co-chairs of the JOHSC
- Director of Occupational Health and Safety or designate will take part in the investigation of critical incidents or fatality and provides necessary support and assistance as required.

Employee Responsibilities

- Immediately reports to supervisor any work related injury/illness. This includes accidents such as cuts, puncture wounds, needle stick injuries, sprains and burns as well as those that are of a gradual onset (chronic) i.e. back pain, repetitive strain.
- Immediately reports to supervisor any "near miss" events and/or unsafe work situations and provide necessary details to the supervisor.
- If an employee has to leave the workplace due to a work related injury or illness, he/she is advised to go first to Workplace Health Services during normal working hours (8:30 am - 4:00 pm). Alternate medical attention should be sought outside these hours. The employee should have a copy of the ESRTW documentation (located on the Rehabilitation Services website, contains the Functional Accommodation Form, “Dear

Treating Practitioner" Letter, Confidentiality Guideline and WSIB – ESRTW Information Sheet) and take the package with them for their health care practitioner to complete. In the case of an emergency, the employee or person providing assistance must contact the supervisor as soon as possible following the treatment of the injury.

- If an employee has restrictions in performing regular job duties and requires workplace accommodation, he/she must provide the Rehabilitation Coordinator in Rehabilitation Services with documentation indicating the nature and duration of the restrictions. Further documentation may be requested by the Rehabilitation Coordinator upon written consent of the employee.

Workplace Health Services Responsibilities

- Administers first aid measures as necessary and determines need and arranges for treatment referrals as needed.

- Refers employees to the Rehabilitation Coordinator who will arrange and coordinate accommodation in the workplace as needed. Subject to the employee's written consent, provides an initial medical report to the Rehabilitation Coordinator in Rehabilitation Services.

- Arranges for follow up medical assessments of ill/injured employee.

Rehabilitation Services

- Reviews the Accident/Incident Reporting Form and Investigation Report(s) for the purpose of determining the need for rehabilitation and/or accommodation assessment.

- Consults with Workplace Health Services and other Health Care Professionals to review medical reports and refers employee for clinical assistance.

- Refers corrective actions and follow up to the Health and Safety Consultants.

- Completes and forwards necessary documentation and any other supporting correspondence to the Workplace Safety and Insurance Board within 3 working days of being notified of a work-related accident/illness.

5. TRAINING

- As part of their health and safety accountabilities, all supervisors must complete the mandatory Faculty/Supervisor Responsibilities Course where they are trained on how to properly conduct these investigations. This training must be completed upon being hired or after a promotion into a supervisory position.

- The supervisor may involve others and is encouraged to seek advice on corrective measures and other input as needed from Occupational Health & Safety (OHS) and/or Rehabilitation Services and/or Workplace Health Services. These areas have personnel with extensive training and/or licensed professionals in health and safety, ergonomics and physical health/medicine.

6. EVALUATION

This procedure will be reviewed on an annual basis or if an investigation identifies revisions are required by OHS.

15b)

SAFETY PROCEDURE - INJURY & ILLNESS REPORTING

EFFECTIVE DATE: March 1, 2007

1. PURPOSE

The purpose of this procedure/guideline is to outline the requirements, methods and outcomes of reporting all occupational injuries and illnesses.

2. SCOPE

The following categories of injury and illnesses will be reported, regardless of the nature or severity of the event:

- Fatality
- Critical Injury/Illness
- Lost time Injury/Illness or one involving Health Care Only
- First Aid
- Occupational Illness
- Property Damage
- Near Miss
- Fire
- Environmental Release

- **Definitions**

  - *Injury* - An event that results in physical harm to an employee

  - *Illness* – A deviation from the normal, healthy, state of the body

3. ROLES & RESPONSIBILITIES **(Employee, Manager/Supervisor, First Aid Provider)**

i)Employee

- an employee who sustains an injury or becomes ill as a result of workplace conditions or work activity must verbally report the injury or illness to any manager/supervisor immediately (not necessarily their own)

- if, because of the nature of the injury or illness, an employee is unable to report, it is the responsibility of another worker, who happens upon the incapacitated worker, to promptly report the event to the manager/supervisor

ii)Manager/Supervisor
The manager/supervisor of the area, upon being notified of the injury or illness shall:

- promptly ensure that first aid is administered by a qualified first aider
- ensure the employee is given subsequent medical treatment if necessary; and that such treatment is recorded
- additional rescue/response (e.g. SERT, Hazmat) teams are notified as necessary
- complete an Accident/Incident Reporting Form and distribute to the employee. If the following occurs: fatalities, critical injuries, lost time, occupational illness, property damage, fire and environmental release, refer to the Accident/Incident Investigation procedure. An investigation is required and the completed Investigation Report is then distributed to the appropriate parties including the employee, budget head/chair, manager/supervisor, Workplace Health, the applicable union/employee group
- ensure the appropriate personnel (i.e. the employee, budget head/chair, manager/supervisor, Workplace Health, Rehabilitation Services, Occupational Health and Safety, the applicable union/employee group) within the organization are notified
- follow up by direct supervisor with injured employee for injuries of a non-lost time nature to ensure onset of pain has not manifested itself

4. Communication

This procedure is communicated to all managers/supervisors and employees through training courses from Occupational Health and Safety (Health and Safety Orientation training for New Employees and Supervisor/Leader Accountabilities for Health and Safety), postings on health and safety bulletin boards, Health and Safety Committees (departmental and JOHSC), coaching of employees by managers/supervisors found to have contravened the procedure. This procedure is also reviewed annually through applicable performance reviews.

5. Evaluation

Employee compliance with the injury/illness reporting procedures are monitored regularly as part of the manager/supervisor's responsibilities and as part of an overall review of the OH&S system. The procedure will be reviewed annually to ensure it remains current by Occupational Health and Safety.

Western

THE UNIVERSITY OF WESTERN ONTARIO
Accident/Incident Reporting Form & Investigation Report
FAX COMPLETED FORM TO: 519-661-2079 (82079)
MAIL TO: Room 4159, Support Services Building, Rehabilitation Services

SECTION #1 – Accident/Incident Reporting Form

PART A

Name of Employee: _____ **Employee Number:** _____

Employee Group*(if applicable)*: □ UWOSA □ PMA □ CUPE 2361 □ CUPE 2692 □ IUOE □ PSAC 610 □ SAGE □ UWOFA □ UWOPA

Status: □RF □RP/TM □CW □Undergrad Student □Grad Student □Other/Visitor

Type: □Report Only □Accident □Incident □No Injury/Hazard □ First Aid □ Lost Time □ Non-Lost Time
(If Report Only, please complete Section #1 - Parts A,B,and F – Supervisor will retain report and give copy to employee)

PART B

Date & Time of Accident/Incident: _____ **Time:** _____ **a.m/p.m**
Day/Month/Year

Date & Time Accident/Incident Reported: _____ **Time:** _____ **a.m/p.m.**
Day/Month/Year

Description of Accident/Incident:(***What happened to cause the accident/incident? What was the person doing? Was there any equipment, people or materials involved- identify the size, weight and type)***

_____

_____

_____

_____

_____

_____

Part of body injured (specify left or right side):

_____

Location/Area of Accident/Incident or Hazardous Situation (Building and Rm #):

_____

Name & Contact Information of Witness(es): _____
(If there are witnesses, please include a statement from each witness)

PART C

Treatment of Injury:

1. **Did the Employee/Student receive First Aid and by whom?** **YES □ NO □**
   If YES, give treatment details: _____
2. **Did the Employee/Student visit Workplace/Student Health?** **YES □ NO □**
3. **Did the Employee visit Hospital and/or Physician?** **YES □ NO □**
   If YES, what hospital/physician, date & time, address, phone number & give transportation details(e.g. ambulance) :

_____

To your knowledge, has the person had a similar disability? If YES, please explain below **YES □ NO □**

_____

UWO link:http://www.uwo.ca/humanresources/docandform/forms/ohs/aiir.pdf

SECTION #2 – Investigation Report

PART D

Immediately investigate if any of the following occur: Fatalities, Critical Injuries, Lost Time, Occupational Illness, Property Damage, Fire or Environmental Release

Is the employee off work due to this accident/incident ? □ **Yes** □ **No**

Date & Hour Last Worked: _____ a.m./p.m.
Day/Month/Year/Time

Normal Working Hours & Days:

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Time							
Hours							

Employee Return to Work Date: _____ a.m./p.m.
Day/Month/Year/Time

PART E

Contributing Factors (Check √ applicable factors):

□ **Hazardous method/procedure used**
□ **Improper position/posture (ergonomics)**
□ **Inadequate personal protective equipment**
□ **Incorrect/defective tools**
□ **Unsafe design or construction**
□ **Poor weather conditions**
□ **Hazardous housekeeping or arrangement**
□ **Inexperience of person in the task**
□ **Training/job instruction inadequate**
□ **Inadequate guarding of material & equipment**
□ **Inadequate lighting/ventilation**
□ **Other: _____**

_____

Detail Factors: _____

Actions and Follow up to prevent Recurrence:

□ **Contact Occupational Health & Safety for assistance**
□ **Contact Physical Plant Department for assistance**
□ **Actions to improve design/procedures**
□ **Correct congested area**
□ **Repair or replace tool/equipment**
□ **Improve personal protective equipment**
□ **Install guard or safety device**
□ **Reinstruct person involved & provide support/coaching**
□ **Request Ergonomic Assessment**
□ **Update training**
□ **Refer to Rehabilitation Services**

**** Supervisor to provide a detailed Action Plan below****

ACTION PLAN

Action Plan(include what, why & how recommendations are made)	**Party Responsible**	**Completed Date**	**Follow Up**

PART F

INVESTIGATED BY:
Name of Supervisor: _____ **(print name)** **Telephone Number:** _____ **Supervisor Signature:** _____ **Date:** _____
REVIEWED BY:
Management (Department Chair or Unit Head) Signature: _____ **Date:** _____
Employee Signature: _____ **Date:** _____ **JOHSC Rep Signature:** _____ **Date:** _____ ***(if applicable)*** **OHS Signature:** _____ **Date:** _____ ***(if applicable)***

****FAX COMPLETED FORM TO 519-661-2079 OR EXT 82079 (ON CAMPUS)****

PART G

Distribution List: **Initial - Sent Off:**

Distribute copies to:
(Supervisor to do)

1) *Workplace/Student Health Services (UCC 25)* _____
2) *Budget Unit Head/Supervisor or Chair* _____
3) *Employee/Student/Visitor* _____
4) *Originator* _____
5) *Applicable Employee's Union/Staff Group – JOHSC Rep*
   - *UWOSA-UCC 255* _____
   - *PMA-UCC 351* _____
   - *CUPE 2361 PPD-SB* _____
   - *CUPE 2692 Food Services-Perth Hall 152* _____
   - *UWOPA-SLB 57G* _____
   - *IUOE-SB* _____
   - *PSAC 610-UCC 270* _____
   - *SAGE-SLB 212G* _____
   - *UWOFA-ELBORN* _____

WITNESS STATEMENT ***(Include for each witness when submitting AIIR)***

Name of Witness: _____

Contact Information: _____

Phone/Ext: _____

Date and Time of Accident/Incident: _____

Injured Worker's Name: _____

Location of Accident/Incident: _____

Your Account of the Accident/Incident:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Name of Witness: _____ **Date:** _____

Signature of Witness: _____

ADDITIONAL INFORMATION

Name: _____ **Date:** _____

Signature: _____

Appendix

18) Standard Operating Procedures –An Example form the Shoesmith and Wren Research Laboratories

by

J.J. Noël

ABSTRACT

This document defines Standard Operating Procedures (SOPs) and describes their purpose, length, style, and contents. It gives instructions on writing and testing SOPs. Its purpose is to provide a helpful guideline for writing effective SOPs for equipment used and laboratory activities performed in the research laboratories of Professors J.C. Wren and D.W. Shoesmith in the Department of Chemistry at the University of Western Ontario.

REVISION AND APPROVAL

This document shall be approved by the Radiochemistry Laboratory professor. The document shall be reviewed annually, revised as necessary to keep it up to date, and re-issued by the Laboratory Supervisor after each revision.

Department of Chemistry
University of Western Ontario
London, Ontario N6A 5B7
2007 January

1. What are Standard Operating Procedures (SOPs)?

A SOP is a set of instructions or steps that someone should follow to complete a job safely, with no adverse impact on the environment, while meeting regulatory requirements.

2. Why write SOPs?

There are many productivity- and quality-related reasons for using SOPs, but for our purposes we will focus on safety, environment, and regulatory issues.

We need to write SOPs for the following reasons:

1. to provide the individuals who are performing the operation with all the safety, health, environmental, and operational information required to complete the job properly;
2. to ensure that no failures occur that would harm employees or anyone in the surrounding community;
3. to ensure that approved procedures are followed in compliance with university and government regulations;
4. to be used as a training document for teaching users about a process;
5. to serve as a historical record of the how, why, and when of steps in a process for use when modifications are made to that process and when a SOP must be reviewed and revised;
6. to serve as an explanation of the steps in a process that can be reviewed in case an incident investigation is required;
7. to ensure that operations are done consistently to maintain quality control of processes and products.

3. What operations require a written SOP?

Ideally, all operations of a technical nature should have a written SOP. Practically though, it takes time and effort to write them; SOPs are most necessary for potentially hazardous operations. Some operations are more hazardous by nature than others, and these deserve priority in the actual effort of SOP writing.

4. How long should SOP documents be?

SOPs may range from just one up to several dozen pages. A SOP should be *as long as necessary to cover the needs of the job*.

Keep in mind that it is difficult and tedious to follow a long list of steps, and therefore easy to miss one too. If an operation involves more than 10 steps, it may be more effective to break it into smaller sections or activities, such as "*Preparations*", "*Getting Started*", and "*Completing the Process*".

It may be possible to shorten the SOP (*and decrease the amount of effort required to write it!*) by simply referring in the SOP to the manufacturer's operating manual for the piece of equipment, if one is available. Lost manuals are of no use… Provide the title of the operation, then refer to the specific part of the manufacturer's manual (e.g., "Maintenance and Troubleshooting, page 57).

Large SOPs can sometimes be written by several people independently, in sections that can be spliced together in the final edit.

5. What style should a SOP follow?

The SOP should be simple and organized, with the points or steps numbered. Instructions should be given as full sentences or *very clear* bullet form that does not leave room for confusion or different interpretations.

You can use the "template" available from the Lab Supervisor as a starting point. Be sure to modify as necessary. Use an organization that favors simplicity and ease of reading.

In our labs, the instructions should be given at a level that could be followed easily by a foreign (relatively new to English) graduate student or a 4th year undergraduate student. Explain all issues clearly and without undue jargon or abbreviations. Make use of a glossary of terms and list of abbreviations as required.

6. What should be included in a SOP?

The SOP should identify and explain the *best practices* to protect health, safety, and environment, *not just the bare minimum required by law*.

The following items should be included:

a) A title (with a descriptive verb) that defines the purpose of the SOP. Include the word "safety" or a derivative in the title.

   Example:

   - "Working Safely with Hydrofluoric Acid (HF)"

b) A document reference number, version number, and revision date on the title or cover page and on the first inside page. The first inside page should also list the revision history. Reference numbers will be assigned by the Supervisor.
c) A statement identifying the research group and department, and the general and specific points of activity for which the SOP has been written.

   Example:

- "This SOP has been written to explain the safe use of hydrofluoric acid (HF) in the Shoesmith Laboratory of the UWO Chemistry Department."

d) A statement outlining the purpose of the SOP, in one or two sentences, including information about its scope, any process and regulatory standards (e.g. ASTM or CSA standards), and both desirable and undesirable consequences. Add clarifying statements to exclude potentially related topics that are not covered by this SOP if needed. A separate "Limitations" section of the SOP may be useful to organize and clarify these if there are several exclusions.

Example:

- "The purpose of this SOP is to provide instructions for the safe use of 48% hydrofluoric acid (HF) to prevent spills and injury to the worker and environment. The use of calcium gluconate antidote gel to treat skin contact with HF is also explained. This SOP does not cover the use of hydrogen fluoride gas."

e) A list, organized by category, of any items (parts, reagents, tools, etc.) required for following the SOP. Think of this list as being a "tools and parts kit" for doing a job. Use general terms for common tools and equipment. Sometimes a table instead of a paragraph is an appropriate format for this information. For instance:

Personal Protective Equipment	Safety goggles, lab coat, apron, face mask, sleeve protectors, gloves, respirator.
Other safety, health and environmental equipment	eye wash station, safety shower, fire extinguisher.
Environmental equipment	spill cleanup kit, hazardous waste containers, fume hood.
Reference materials	old SOPs, operating manuals, other reference materials
Training requirements	WHMIS, Laboratory Safety and Waste Management, Radiation Safety Training, personal instruction from Supervisor or designate
Parts	the items required to assemble, operate, or repair something, including instrumentation (nuts, bolts, screws, potentiostat, etc.)
General materials	glassware, standard solutions, protective equipment, hazard labels, lab notebook
Specific materials or ingredients	chemicals, standards
Tools	wrenches (specify sizes), screwdrivers (specify types), hammer, voltmeter, torque wrench, metal stamp kit, etc.

Other lists might use a simple bulleted format:

- Time conditions: frequency for performing the operation described by the SOP (for example, "every two days" or "before each measurement").
- Information sources: when "information" such as alloy weights, mixture percentages or similar data are required, include the source.

f) An overview of the steps in the SOP that describes the process in terms of its major functions. Include anticipated safety, health, environmental and operational results.

g) A description of the machinery, mechanism, instrumental system, or apparatus, and its major components so that readers can orient themselves to the system as a whole and to its major parts. If the SOP describes the only operation performed with the equipment in question, then the equipment can be described in detail here. For widely used equipment, it may be more efficient (*saving work*) to write an "instrument SOP" for each piece of equipment, describing therein the detailed apparatus, and then simply refer to these in any "operational SOPs" that employ the equipment.

h) Definitions of abbreviations, terms and concepts. If the SOP contains any abbreviations, or any terms and concepts that readers may be unfamiliar with, define each of these in its own paragraph so that readers (1) know that they are unusual words or concepts, and (2) can find them easily for use when needed. If there are more than a few of these in the SOP, include them in a glossary or list of abbreviations at the beginning of the document.

i) Safety warnings, cautions and notes placed prominently within the SOP ahead of the actual step to be described. ***Never place safety items at the end of a step!***

j) A sequential, numbered list of process steps with explanations, presented in the order in which a SOP user should perform them. Group several related steps together under subheadings, such as primary steps, secondary steps, safety steps, belt-tightening steps, ventilation steps, emission control steps, and so on. If two steps must be done at once, explain them in a sentence that clearly says so. You may wish to highlight (with italics or underlining) the first part to differentiate it from the actual step.

Example:

- *This step has two parts that must be done at the same time*. While gripping the safety lever with your left hand to keep it from slipping downward, use your right hand to remove the retaining pin.

k) A more detailed explanation of a step if a reader needs more information to understand fully the reason for performing it.

Examples:

- CAUTION: scald alert! While gripping the safety lever with your left hand to keep it from slipping downward and releasing scalding steam, use your right hand to remove the retaining pin.
- CAUTION: belt can whip out! Stand behind the red warning line on the floor before reaching over to tighten the two white lock-out nuts, which hold the belt and keep it from whipping loose.

l) Alternative steps to take in case a desired step does not work.

Examples:

- If the alarm buzzer sounds, press the alarm button to turn it off. If the alarm does not stop, flip the circuit breaker marked "Alarm" to the "off" position (up) and then immediately flip it down to the "on" position again. The alarm should not sound again. If it sounds again, stop operations, vent the steam valve, and call alarm maintenance immediately.
- Pull the throttle to vent steam. If steam does not vent, perform step 7 and then immediately start over again at step 3.

m) A clear indication of the timing if an SOP or some of its steps are time-dependent.

Example:

- Once a week: check laboratory fumehood air flow to ensure it meets required specifications.

n) A citation of any reference sources, document numbers and dates if possible for any step that depends on informational input (data),.

Example:

- Use resin-hardener mix 3-45 specified by Hysol Application Note #24 dated March 6,1995.

o) Graphics (drawings, photographs and thumbnail icons) as needed to communicate clearly. Well-labeled drawings are often better than text.

p) Drawings of labeled (named) parts of objects to show proper relationships and orientations among the parts or other objects. Show the positioning of hand tools, other tools and even hands and feet if applicable when work is to be performed. For example, show the positioning of a wrench or direction for turning a valve. Show the individual parts of a device in an exploded view and the final assembled position.

A word about warnings….

Depending on the SOP, the writer might include an overall warning or caution that describes the general safety concerns. This should be placed at the beginning of the SOP where it is the first thing read after the title on the first page of text.

If more than one safety warning, caution or note exists, list them in boldface type in a "Warnings" section at the beginning of the SOP, in addition to their logical places within the document. With each item in the "Warnings" section, cite the page where the warning is in effect. The purpose of placing the cautions first is to alert the reader to read the warnings first. Often a page of safety cautions appears immediately after the title page and before the first page of text.

If there are only one or two warnings, these might be best placed at the top of the first page of text rather than on a separate page. The goal is to place warnings where the reader will read them.

Point out any actual warning signs or symbols that should be in place on or around the apparatus while the operation is taking place, and remind the worker to verify their presence and replace missing warning signs.

Write warnings and cautions in clear sentence form. Notice how these examples signal the subject of the alert immediately and then follow with an explanation.

Examples:

- WARNING, eye hazard! To prevent eye injury from spills or splattering, wear safety goggles and face shield in this area.
- DANGER--carbon monoxide! This gas kills very quickly! If an alarm sounds, leave the area quickly.
- CAUTION, flammable natural gas! No Smoking. No sparks. No flames. If you smell gas, leave the area and call 911 immediately.
- DANGER! 25,000 Volts! To prevent electrocution, never remove or bypass interlocks.

Write notes to provide people with information that can help them satisfy safety, health, environmental and operational procedural requirements. For example, if it is permissible to use a power bar instead of an extension cord, this information should be stated in the SOP.

Example:

- NOTE and CAUTION: Only use a CSA approved breaker-equipped power bar with this equipment if a permanent cord extension is needed. Do not use an extension cord except on a temporary basis.

q) Thumbnail graphics to visually alert readers that they have come to a safety item. A few examples of safety icons that you might develop:

- flame when fire is a possibility
- safety goggles
- gloves
- hot surfaces warning
- small signs that warn about particular gases

r) A references section that includes a complete list of source material used for the SOP. If someone wants to confirm something, they will know where to look.

7. What is next after the SOP has been written?

Test the SOP in the lab and then develop troubleshooting instructions. Anyone who has ever assembled a consumer product knows there are always problems to solve, either while trying to assemble something or after it has been assembled. Anticipate all these problems for a reader and include them in a troubleshooting section. Also incorporate troubleshooting tips at each step in a process where they actually occur.

One way to anticipate safety, health, environmental and operational problems is to ask an inexperienced person to "walk through" a mock (inactive) process (under close supervision of an expert) and try the steps. An unknowledgeable person might ask questions or demonstrate behaviors that an experienced or familiar person would not.

Most importantly, SOPs should be reviewed by several people qualified to evaluate the SOP in terms of its completeness and clarity of safety, environmental and operational components. In keeping with the intent of various International Standards Organization (ISO) standards, these reviews should be based on the maximum safety, health and environmental considerations, not merely "what the law requires".

8. Some final tips for SOP writing.

a) How much someone knows about an entire process or job affects the way he or she does that job. Incorporate safety, health and environment into the traditional how-to-operate or how-to-do steps. This teaches the person comprehensively so that he or she has a complete picture of the responsibilities for doing a job properly. This knowledge base simplifies follow-up training.
b) Write an SOP to be as long as necessary for a specific job. All jobs differ in the number of steps required to complete them properly. Short changing someone by providing a short and incomplete SOP sets up failure and is dangerous. Write the SOP to satisfy fully the definition of a SOP.
c) People tend to ignore long SOPs because they cannot remember more than 6 to 12 steps. If the SOP goes beyond 10 steps, consider these solutions:

- break the long SOP into several logical sub-job SOPs,

- write an accompanying shortened SOP that lists only the steps but not detailed explanations of those steps, and
- make the long-form SOP a training document or manual to supplement the shorter sub-job SOPs mentioned earlier.

d) If writing a shortened SOP or sub-job SOPs, prepare the longer comprehensive training SOP first to get a picture of what training is needed, then decide how to break it into shorter sub-job SOPs. Writing sub-job SOPs first and then trying to put them together may leave out linkage steps that make sub-jobs interdependent.
e) Consider the work culture in which people have worked previously, and the kind of safety culture we are trying to establish and maintain here. In writing for people who came from a workplace culture in which shortcuts were accepted practice, explain the reasons behind certain steps so that SOP users will understand the importance of following ***all*** the steps in the proper order.
f) Consider the range of ages, education, knowledge, skills, experience and training, English language familiarity, and workplace culture of the individuals who will be performing the SOP steps.
g) Keep in mind that many people do not read all the steps before starting on step one. Many people read one step, perform it, read the next step, perform it, and so on. To try to compensate for this habit, forecast future effects and steps at certain points in the SOP to tell readers things they should know in advance, such as upcoming steps that require caution, precision, timing, assistance, and personal protective equipment.
h) Once you have completed writing an SOP, have several workers test it and give you feedback. If needed, consult safety, health, and environmental experts prior to writing the SOP, and have them observe the SOP being tested so they can add comments.
i) Review the effectiveness of SOPs at least annually and make necessary changes if in-lab practice suggests that descriptions should be improved.

- Review SOPs whenever processes and equipment are changed.
- When new equipment is installed, take the opportunity to write a new SOP, incorporating the good from the old, and adding what is necessary to satisfy the new equipment.

9. Summary

Standard Operating Procedures should be more than just documents drafted by personnel with a focus only on production and operations. SOPs should be written to encompass safety, health, environment and quality considerations.

SOPs should be written for all jobs, should be as long as necessary, and should be aimed at a specific audience –the potential user. Writers should be aware of how people are likely behave in order to write with those behaviours in mind.

SOPs should be based on research that includes review of printed material, interviews, and observations of the job. The SOP itself should include a clear title, references and revision dates, who the SOP is for, what it covers and does not cover, a list of tools and parts for the job, definitions of terms and concepts, safety warnings and cautions, graphics, and the names of the authors.

There is more to writing SOPs than has been covered here. If you require more information, seek out a guide to writing SOPs on the Internet or at the library or ask for help from your supervisor.

10. Reference.

[1] Kenneth Friedman, Department of Journalism and Communication, Lehigh University, Bethlehem, PA., Via Internet at: http://www.lehigh.edu/~kaf3/sops/sop_index.html, January 23, 2006.