

COVID-19 GUIDELINE FOR REOPENING RESEARCH SPACES

Prepared by
Environmental Health & Safety

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UNIVERSITY OF
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TABLE OF CONTENTS

1. INTRODUCTION	1
2. SCOPE	1
3. RESPONSIBILITIES	2
Unit Heads / Department Heads	2
Principal Investigators/Supervisors	2
Lab Users / Workers	3
Environmental Health and Safety	3
<hr/>	
4. MEASURES TO REDUCE THE RISK OF TRANSMISSION	4
Exposure Reducing Measures, Strategies	4
Infection Prevention and Controls	5
<hr/>	
5. WHEN ENTERING THE RESEARCH SPACE FOR THE FIRST TIME	6
6. GENERAL SAFETY CONSIDERATIONS	7
Guidance of Face Mask	7
Safety Training	7
Permits	8
Housekeeping	8
7. EMERGENCY PLAN	9
<hr/>	
APPENDICES	
A: Resources for COVID-19	10
B: Physical distancing evaluation flowchart	11
C: Lab equipment verification checklist	13
D: Peroxide Formers list	16
E: Re-entry checklist	17
F: Emergency Plan	18

1 | INTRODUCTION

As government regulations and public health advice continue to evolve, the university is resuming operations of research spaces that were closed or operating with reduced occupancy due to COVID-19.

In so doing, the health and safety of people in the research space is a priority and appropriate measures must be put in place. Research spaces include traditional laboratories, “dry labs” like computing labs and observation facilities, fieldwork sites and any other physical location where research is conducted. Such measures will take into account factors including legal obligations, public health advice, and operational considerations. The university is maintaining measures to protect the health and safety of its faculty, staff, students, contractors and other members of the U of T community, and to provide reassurance to our community who may have concerns about COVID-19 transmission. This guideline outlines strategies and the university’s requirements for operating research spaces upon re-entry or for increased occupancy.

This guideline is also a consolidation of various tools and resources from the university and public health authorities. For general re-entry guidance, please refer to the [COVID-19 General Workplace Guidelines](#).

2 | SCOPE

This guideline applies to all buildings occupied or operated by the University of Toronto at all campuses and other off-campus locations*. It applies to all staff, faculty, librarians, post-doctoral fellows, visiting scientists and students of the university, and to all other occupants of university buildings.

All measures taken to prevent the spread of COVID-19 should be done in compliance with requirements under the *Occupational Health and Safety Act* and its Regulations, the *Emergency*

* Individuals working in research affiliated institutes and/or hospitals must follow the host guideline and/or directives in addition to applicable health and safety requirements in this Guideline.

Management and Civil Protection Act and its Regulations, and public health directives issued under the *Health Protection and Promotion Act*.

All measures taken by any individual research team also need to consider the broader context, including the physical location, in which the team operates.

3 | RESPONSIBILITIES

UNIT OR DEPARTMENT HEADS

- Determine and approve which research groups need to be on site to conduct research and which groups are able to work remotely.
- Provide support as required for research groups needing to restart and for those continuing or increasing research operations.
- Ensure 2-metre physical distancing is being maintained in common areas and in research spaces. For research spaces where 2 metre distancing cannot be maintained consistently, ensure mitigation measures are considered before relying on PPE.

PRINCIPAL INVESTIGATORS/SUPERVISORS

Before Resuming Research Operations:

- Determine which positions need to be on-site to support the research activities
 - There may be individual considerations around:
 - Requests for accommodation due to high-risk status (i.e. staff that fall within the category considered high-risk by provincial public health officials).
 - Caregiving obligations and accommodations (the status of daycares and schools will shift through phases).
 - Transportation and mitigating fear around use of public transportation.
- Confirm that measures taken to ensure appropriate physical distancing in the research spaces are compliant with accessibility requirements. For accessibility considerations, please consult with the Accessibility Office.
- Develop, document, and implement appropriate procedures for re-entry including specifics for your research space and for the use of shared equipment.

- Ensure controls identified in the procedures are followed.
- Ensure all personnel in the research space are provided with appropriate communications, instructions and training on the re-entry procedures.
- Ensure the re-entry procedures are readily available to all users of the research space.
- Get the approval of the re-entry plan and any modifications of the plan by the unit and division head e.g. changing staff who will be coming into labs, increasing the number of individuals, location of research space.

Ongoing Responsibilities:

- Adapt and maintain research operating procedures.
- When required, provide equipment, personal protective equipment (PPE), instructions or other resources as identified by the re-entry procedures.
- Protect physical and psychological health and safety by dealing effectively with employee concerns.
- Ensure that high-touch shared equipment surfaces within the research space are regularly disinfected before and after use.
- Create and update a schedule that ensures individuals maintain consistent 2-metre physical distancing within the research space unless an exception for physical distancing is approved for a specific task (see Section 6) and monitor compliance to both the schedule and physical distancing.
- Adhere to your approved research restart/adaptation plan and do not increase the number of people coming into the lab without appropriate approvals.

RESEARCH SPACE USERS AND WORKERS

- Work remotely as much as possible and only be present in the space if necessary.
- Report hazards and concerns to your supervisor.
- Review and follow instructions in the re-entry and operating procedures.
- Use equipment and/or protective equipment as defined in the procedures.
- Stay home if you feel unwell or are experiencing symptoms, and follow the process outlined by Human Resources & Equity.
- Minimize time around people and maintain 2-metre physical distancing, unless an exception for physical distancing is approved and appropriate PPE is worn.
- Remember that some individuals with COVID-19 may be asymptomatic.

ENVIRONMENTAL HEALTH & SAFETY

Environmental Health & Safety is responsible for:

- Developing and periodically updating this guideline, in consultation with the appropriate stakeholders, based on the changing COVID-19 situation and public health directives.
- Conducting safety visits and audits in research spaces.
- Identifying and facilitating best practices for COVID-19 safety.
- Being available for consultation as needed.

4

MEASURES TO REDUCE THE RISK OF TRANSMISSION

EXPOSURE REDUCING MEASURES AND STRATEGIES:

- There is still a risk of contracting COVID-19; therefore, prevention measures need to be implemented. See <https://research.utoronto.ca/covid-19> for more information.
- Investigate ways to reduce traffic into your research areas and to reduce this risk as much as possible. Provide or continue virtual or phone meetings.
- There may be supply shortages, especially for personal protective equipment (PPE) such as masks. Do not plan to start or continue work for which you do not have an adequate stock of PPE (when required), and plan for limited availability (e.g. chemical resistant gloves, fit-tested N95 respirators, face shields).
- Develop and maintain a plan for physical distancing in your research space:
 - Limit the number of individuals in the space at any one time. To minimize the risk, implement cohorts (groups of people) so the same group of people work together without overlap with other cohorts. For example, consider implementing scheduled shifts and/or flexible work arrangements and continue to promote physical distancing through telework arrangements where possible.
 - Assign work areas to maintain at least 2-metre physical distancing between individuals. Where practical, implement signage for the direction of foot-traffic in main circulation paths and entry points to minimize close physical interactions when travelling within the research space—e.g. have arrows on the floor to show the direction to travel, and when there is more than one entry point, have one designated for entrance and one for exit.
 - If personnel must work in less than 2-metre to others for specific tasks, research space users should be provided with the appropriate masks based on an EHS assessment of risk (see section 6 below).
 - Emphasize that people should wash their hands frequently with soap and water for at least 20 seconds. If soap and water are not available, ensure an alcohol-based hand sanitizer is available.
 - Regularly disinfect high-touch shared equipment surfaces within the research area before and after use with either:
 - a) 0.1% sodium hypochlorite (active ingredient in bleach) for 5 minutes of contact time then rinsed with water – note that sodium hypochlorite is corrosive;
 - b) 70% ethanol;
 - c) 0.5% accelerated hydrogen peroxide products such as PreEmpt (follow manufacturers' recommendations for contact time); or,

- d) other hard surface disinfectant approved by Health Canada.

If you think you were exposed to COVID-19 or are experiencing symptoms, please follow the Ontario Ministry of Health self-assessment tool: <https://covid-19.ontario.ca/self-assessment/>. Upon completion of the self-assessment, you will receive information on what to do next.

INFECTION PREVENTION AND CONTROLS

1. Avoid touching your face, nose or mouth.
2. Wash your hands often and thoroughly with soap and water or alcohol-based hand sanitizer.
3. Practice proper respiratory etiquette, such as sneezing and coughing into your elbow.
4. Do not shake hands.
5. Maintain physical distancing of 2 metres or more.
6. Stay home if you are sick. Stay home if you are asked to self-isolate
7. Follow all applicable policies, including the Policy on Non-Medical Masks or Face Coverings

In order to support the above strategies, conspicuously post the public health posters that are linked in **Appendix A. Resources for COVID-19** of this guideline.

5

ENTERING THE RESEARCH SPACE FOR THE FIRST TIME

SURVEY FOR UNSAFE CONDITIONS

When re-entering your research space after an extended closure, enter rooms with caution. Look through entry-door windows to see if any materials may have been damaged or if water or liquids are present on the floor or surfaces. Listen for any local alarms indicating a safety or instrument issue. No work is to begin in the space until this inspection is completed[†].

- 1) Walk through **all** of your areas and complete a visual inspection looking for any evidence of problems: note any unusual odours (that are not directly associated with the space having no occupancy for a long period of time), look up at the ceiling and around the walls for signs of water leakage or other damage, look for broken chemical containers, old waste, leaks, failed equipment, spills, etc.
- 2) Mitigate any leaks, spills, or releases if you are capable of handling them safely. If not, contact [Environmental Protection Services](#).
- 3) Review all safety equipment and PPE.
- 4) Check equipment that may have been affected by a power disruption as soon as possible. Keep refrigerator and freezer doors closed until temperature levels return to normal. Check for leaks that may have occurred if the temperature was compromised.
- 5) If any damage has occurred as a result of the closure, report the damage through your department.

Redesign research team members' schedules for appropriate at least 2-metre physical distancing based on the available space, engineering controls, PPE availability and other required conditions so that all activities in the research space are performed safely. If 2-metre physical distancing cannot be achieved for some of the tasks, you may contact EHS for a risk assessment.

[†] Use the [Laboratory Inspection Checklist](#) to document your visual inspection.

6 | GENERAL SAFETY CONSIDERATIONS

PERSONAL PROTECTIVE EQUIPMENT (PPE)

This information will change based on government and public health directives. Please regularly refer to the university's FAQs for updated information.

At the University of Toronto, EHS will determine whether employees and students should be provided with the appropriate medical masks (N95 masks, surgical masks etc.) when working in specific environments such as some research labs and healthcare settings. Non-medical masks or face coverings are required to be worn indoors in University common-use spaces on its property, lobbies, elevators, hallways and corridors, stairwells, washrooms, service desks, cafeterias and lunchrooms, common areas in residences, study lounges, meeting rooms, classrooms, research and teaching labs, shared or open-space offices, and other locations used in common where practicing physical distancing may be difficult or unpredictable. For more details on the Policy on Non-Medical Masks or Face Coverings, click [HERE](#), please also review the [Joint Provostial and Human Resources Guideline on Non-Medical Masks](#). Additional information on non-medical cloth masks is available [HERE](#). In leased spaces, occupants may also be subject to the policies and guidelines of the building owner or manager.

Per the [Joint Provostial and Human Resources Guideline on Non-Medical Masks](#) there could be exceptions for research spaces where non-medical masks or face coverings are not normally required since the departmental/divisional research re-entry plans mandates individuals in research spaces to maintain a **consistent** 2-metre physical distance. Click [HERE](#) to review the exceptions on non-medical masks or face coverings. Please follow the Physical Distancing Flowchart (Appendix B) to determine if physical distancing measures will negate the need for additional PPE. If the flowchart indicates that maintaining 2-metre physical distancing may be difficult or unpredictable, for example due to the nature of the laboratory work or due to the foot traffic in the laboratory, consider relocating or reassigning workbench areas, relocating equipment, scheduling access, etc. You can also contact your local safety committee for further assessment on mitigation measures and EHS if further assistance is required (ehs.ppe@utoronto.ca). Implementation of such mitigation measures will require approval by the unit or department head. As a general rule, masks cannot be used to replace the need for physical distancing. If PPE is required after reviewing the flowchart or consulting with EHS, please proceed with purchasing appropriate PPE (gloves, surgical/procedural masks, etc.) as you regularly would through your existing supply chain (e.g. [MedStore](#), ChemStore).

Please do not provide/use medical grade masks (surgical/procedural masks) if physical distancing measures are in place unless required or advised by EHS.

For all other work conducted at the University, the general use of face masks or face coverings for protection against COVID-19 is required by the Policy on Non-Medical Masks or Face Coverings. Please consult the [General Workplace Guidelines](#) for more information.

SAFETY TRAINING

Ensure safety training is up-to-date. Please see the [EHS training matrix](#).

All personnel working with SARS-CoV-2, including its RNA and DNA, must review the SARS –CoV-2 Biosafety Guideline available [here](#) and take the online EHS 620 – SARS-CoV-2 Biosafety Training course. You can find this new course on “[My EHS Training](#).”

PERMITS

Ensure your permits are up-to-date and accurate, including amendments for the use of new biological agents, and the list of authorized users. When transferring biological agents to external parties, ensure you have appropriate documentation i.e [Biological Transfer Notification](#) and [Material Transfer Agreement](#)

HOUSEKEEPING

Cleanup: Clean up and put away chemicals, supplies, equipment, glassware, and other items left out during the shutdown.

Cleaning maintenance: Determine an appropriate lab cleaning protocol to disinfect high-touch shared equipment surfaces, e.g. using 70% ethanol. Ensure the proper workplace WHMIS label when preparing the disinfectant dispensers.

Hazardous waste: Secure, correctly label, and/or prepare for hazardous/chemical/biological waste disposal as appropriate.

Plumbing Traps: Run all taps over sinks and pour water in floor drains (if present) to prevent foul odours from entering the lab.

7 | EMERGENCY PLAN

Given the current uncertainty in the trajectory of the COVID-19 situation, it is prudent for researchers to develop and update an emergency plan to prepare for the possibility of an orderly winding down of research activities. Prepare your laboratory including ensuring continuity and minimizing hazards, and ensuring lab users are aware of these activities by implementing a communication system:

1. Develop and maintain an up-to-date emergency contact list for personnel in laboratories and those responsible for specific equipment/facilities
2. Identify equipment/facilities that would require special attention (e.g. maintenance or shutdown, certification or calibration requirements) during a closure or reduced personnel situation, prepare Standard Maintenance Procedures, and have these available.
3. Identify and train personnel in the operation of essential and critical equipment or for general research project backup/maintenance to ensure these are performed safely
4. Plan for adjustments to research methodology where collaboration or research participation may be compromised due to illness or closure
5. Have written documentation in place detailing ongoing experiments and associated SOPs, critical steps, and how to interrupt/stop as appropriate
6. Ensure that necessary supplies are accessible and on hand e.g. liquid nitrogen, compressed gas. Have a plan in place of when supplies will be delivered, including contact numbers for suppliers
7. Plan for scaled down operations
8. Plan for start-up if necessary, after a shutdown

Please see Appendix F for templates.

APPENDIX A

RESOURCES FOR COVID-19

For the latest information about the Division of the Vice-President, Research & Innovation's COVID-19 response, please see the [Research & Innovation Coronavirus \(COVID-19\) Research web site](#). Please take the time to review the [University's UTogether 2020 page](#) and [FAQs](#) and the [Human Resources & Equity page on COVID-19](#). If you or members of your unit have a question that is not covered, please contact ehs.office@utoronto.ca.

COVID19 Awareness Video for Research Laboratories

This awareness video is for those who desire supplemental information on COVID-19 when working in research spaces. Due to the ongoing COVID-19 situation, our typical work situation has changed and there are some new procedures that we must follow to protect ourselves and our fellow U of T community members when we work on campus. This awareness video (~12 minutes) outlines some information and procedures for research personnel that need to be implemented when you are on campus.

UofT Posters on COVID-19

[MEDICAL Mask Poster](#)

[NON-MEDICAL Cloth Mask Poster](#)

[Covid-19 Prevention and Precautions Poster 18x24 FA](#)

[Covid-19 Prevention and Precautions Poster 11x17 FA](#)

[Covid-19 Prevention and Precautions Poster 8.5x11 FA](#)

[Restricted Access Poster 8.5x11 FA](#)

[How to put on or take off surgical masks and disposable gloves](#)

Posters from other public health organizations on COVID-19

[Toronto Public Health poster on proper handwashing](#)

[Toronto Public Health poster on using sanitizers](#)

[Toronto Public Health Cough Etiquette](#)

[US Water Quality and Health Council posters on cleaning and sanitizing](#)

Public Health Organizations

[Toronto Public Health](#)

[Peel Region Public Health](#)

[Ontario Ministry of Health](#)

[Public Health Ontario](#)

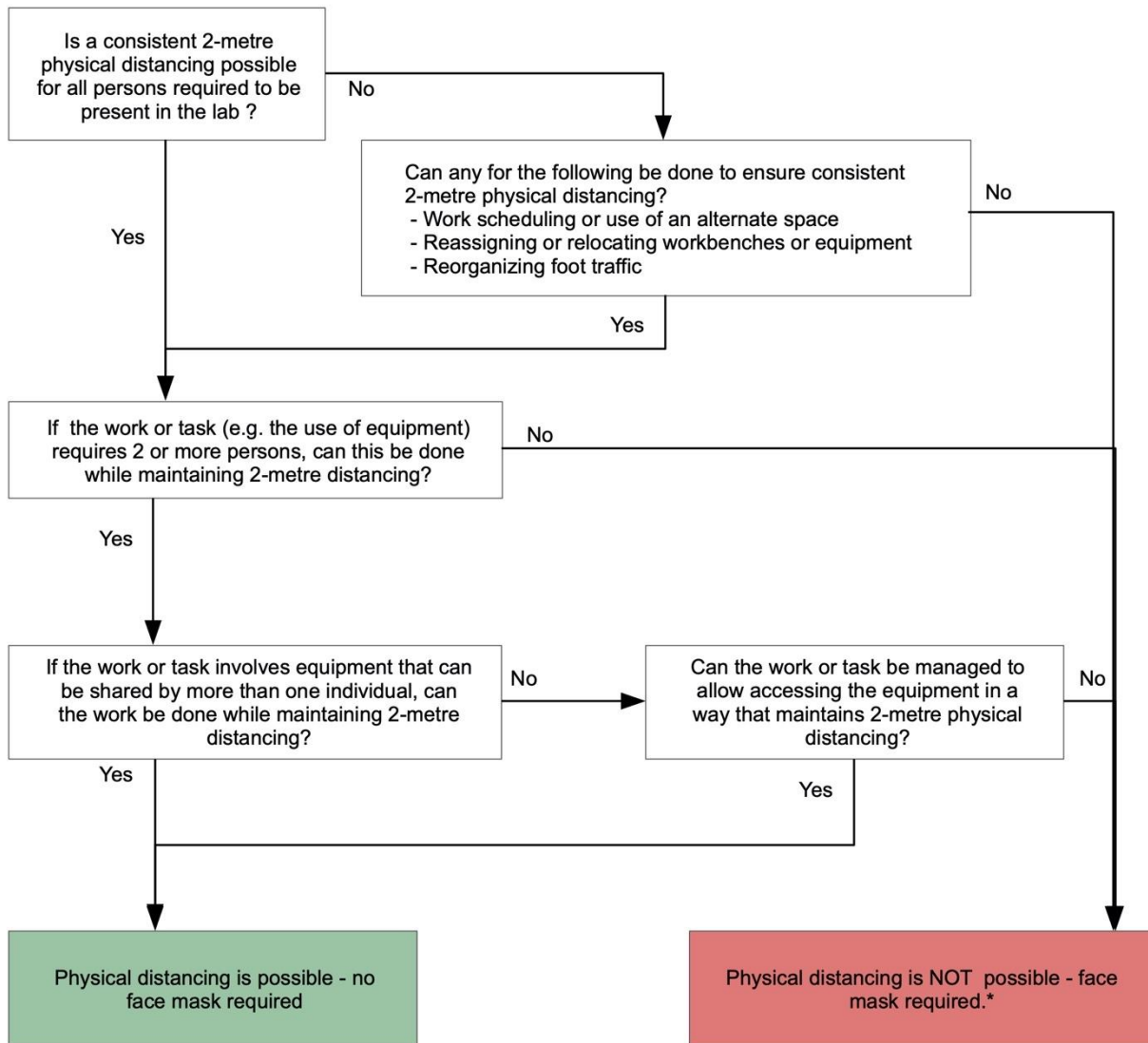
[Public Health Agency of Canada](#)

[World Health Organization](#)

[CCOHS: Know the difference – Respirators, Surgical Masks and Non-Medical Masks](#)

APPENDIX B

PHYSICAL DISTANCING EVALUATION FLOWCHART



*Face mask must be used when physical distancing or other engineering controls cannot be implemented. Refer to the [General Work Guideline](#) for the general use of PPE outside lab areas.

APPENDIX C | LAB EQUIPMENT VERIFICATION CHECKLIST

SAFETY EQUIPMENT AND PPE[‡]

Biosafety Cabinet: Review the certification date to ensure it is within one year and confirm that it is operating normally. Contact your certification provider if needed.

Eyewash station: Flush eyewash stations for 3-5 minutes to remove sediment and stagnant water noting clarity of water and appropriate tepid temperature, and document this on the weekly inspection sheet. Check that flow is still at 1.5 l/min and ensure that the flow pattern is adequate to rinse both eyes. Report problems to your building manager.

Fire extinguishers: Ensure they have been checked and the arrow indicates ready for use – ensure clear access.

First aid kits: review the first aid kit and ensure its completeness.

Fume hood: Review the certification date to ensure it was within one year; if it has been longer than one year, please contact ehs.office@utoronto.ca. Confirm that the hood is operating normally (with appropriate draw) and check the proper function of the fume hood alarm using the test function.

Gas cabinets: Confirm that the cabinet is operating normally and check proper functionality per specifications of manufacturer.

Gloves: Ensure adequate stocks of gloves are available to conduct your research (of appropriate materials and sizes). You may try using reusable gloves where appropriate considering the limited supply and critical needs of health care workers.

Glove box: Check for leaks and integrity of gloves.

Respiratory protection: Consider the use of engineering controls first (e.g. fume hood) or reusable respiratory protection when required for your research or when physical distancing is not achievable at any given time. Limit the use of N95 masks to preserve supplies for healthcare workers as much as possible. Refer to Section A. of this document.

Safety devices: Check all safety devices; for example, test interlocks and emergency stop buttons for functionality.

[‡] Assess the need for Personal Protective Equipment (PPE) based on the type of work in your research space using the Laboratory PPE Assessment Tool and plan for limited availability of PPE, including required face masks, face shields, and gloves. Do not plan to start work for which you no longer have an adequate stock of PPE

Soap dispensers: Ensure they have adequate content and are working properly.

Spill Kit: Review your spill kit and ensure completeness of all supplies.

LAB EQUIPMENT AND INSTRUMENTS

Walk through your lab area and check any electrical equipment that remained plugged in (freezers, fridge etc.) for appropriate temperatures.

Computers and controllers: Check for software security updates, licence renewals.

Equipment and instruments: Review equipment manuals for safe start up instructions; review all SOPs and safety procedures.

Ionizing and Non-Ionizing Radiation Equipment

- Read the equipment's operating manual and the standard operating procedures (SOPs) of your experiment to regain familiarity.
- If planning to work in shifts, develop a procedure for shift changes and keep a logbook indicating the status of the equipment at the time of the shift change.

Lasers:

- Before starting the laser read the manual for "Cold-start" situation.
- Check the alignment. Take all precautions: reduce power if possible, use low power visible light to align high power IR systems, use safety goggles with appropriate OD, beam stoppers, etc.
- Water cooling system must be checked before starting the laser. It is a good moment to have the water changed.
- Mirrors and other optical elements may have dust on their surfaces. Dust particles can produce dangerous diffuse reflections in class 4 laser systems and damage the optics. Check all your optics before unblocking the beam.
- For high power enclosed lasers used for cutting plastics or other materials, check the exhaust system.
- Contact the Laser Safety Officer if you have further questions.

Open source radionuclides:

- Review the SOPs, the safety precautions specific to the radioisotope, the shielding, and the PPE.
- Run the experiment without the radioisotope to regain expertise.
- Check the proper functioning of the monitoring equipment (the GM detector or the Liquid Scintillation Counter).
- Contact the Radiation Safety Officer if you have more questions.

Other equipment: Review start up procedures, ensure all safety devices work properly.

Sealed sources and Irradiators: Review the operating procedures and for "Cold-start" situation.

X-Ray devices: Review start up procedures and test for leaks as appropriate.

SUPPLIES

Availability of material: Prepare for supply chain disruptions and limited availability of materials:

- Recognize that order placement may be slower as the volume of requests increases
- Plan for limited sales of high demand items

Hazardous material inventory: Conduct a hazardous material inventory to ensure that there was no loss of materials such as chemicals, radioactive materials, toxins, controlled substances, etc. Report missing highly hazardous chemicals or regulated materials such as radioactive materials and biological agents to the appropriate EHS safety officer.

Chemicals: Assess chemicals that may have become unstable during the closure and manage any expired, outdated, peroxide-forming, self-reactive, or other reagents with a limited lifespan appropriately. Also look for chemical containers that are bulging or have imploded. Submit a chemical waste pickup request for chemicals in these categories.

Reagents: Review all reagents in stock and ensure you have enough to conduct your experiments, and reorder as required. Consider micro-scaling as much as possible to minimize the use of reagents and solvents and avoid potential substantial delivery delays and limited availability.

Disinfectant: Make sure you have disinfectant available to wipe frequently touched surfaces in your lab.

APPENDIX D | PEROXIDE FORMERS

The below is quoted from The CRC Handbook of Chemistry and Physics, Internet Version 2019 100th Print Edition, 2019, <http://hbcponline.com> (accessed April 2020). Note that the easiest way to test for peroxides is with commercially available peroxide test strips/sticks.

Because some compounds form peroxides more easily or faster than others, prudent practices require testing the supply on hand in the laboratory on a periodic basis. The following list provides guidelines on test scheduling. The peroxide hazard of the compounds listed in Group 1 is on the basis of time in storage. The compounds in Group 2 present a peroxide hazard primarily due to concentration, mainly by evaporation of the liquid. The compounds listed in Group 3 are hazardous because of the potential of peroxide-initiated polymerization. When stored as liquids, the peroxide formation may increase, and therefore these compounds should be treated as Group 1 peroxidizable compounds.

Group 1 – Test Every 3 Months

Divinyl acetylene	Sodium amide
Isopropyl ether	Vinylidene chloride
Potassium	

Group 2 – Test Every 6 Months

Acetal	Ethylene glycol dimethyl ether (glyme)
Cumene	Methyl acetylene
Cyclohexene	Methyl isobutyl ketone
Diacetylene	Methyl cyclopentane
Dicyclopentadiene	Tetrahydrofuran
Diethyl ether	Tetrahydronaphthalene (tetralin)
Dimethyl ether	Vinyl ethers
1,4-Dioxane	

Group 3 – Test Every 12 Months

Acrylic acid	Styrene
Acrylonitrile	Tetrafluoroethylene
Butadiene	Vinyl acetate
Chloroprene	Vinyl acetylene
Chlorotrifluoroethene	Vinyl chloride
Methyl methacrylate	Vinyl pyridine

APPENDIX E | RE-ENTRY CHECKLIST

Question	Status	Comments
Is there a plan in place for physical distancing? e.g. staggering work hours, working in separate areas	Yes N/A	
Have all options for telework been explored?	Yes N/A	
Have lab staff and students been instructed on infection control/prevention?	Yes N/A	See COVID-19 General Workplace Guidelines [add link] for details on reporting, infection control and prevention
Have public health posters from Appendix A been posted?	Yes N/A	
Has the flowchart for use of masks been completed for situations where distancing is not possible?	Yes N/A	
Is all safety training up to date?	Yes N/A	
Are safety permits up to date?	Yes N/A	
Has a visual lab inspection been conducted?	Yes N/A	
Has equipment been checked for issues due to power failures or other issues?	Yes N/A	
Has the Lab PPE assessment Tool been used to look at PPE requirements for the next few months?	Yes N/A	
Check eyewash	Yes N/A	
Check fume hood	Yes N/A	
Check biosafety cabinets	Yes N/A	
Check glove boxes	Yes N/A	
Check/refill spill kit and first aid kit	Yes N/A	
Check fire extinguishers' stickers	Yes N/A	
Check all lab equipment and review applicable SOPs	Yes N/A	
Assess chemicals for stability, especially peroxide formers	Yes N/A	
Ensure supplies of surface disinfectant	Yes N/A	
Run taps to fill plumbing traps to prevent odours	Yes N/A	

APPENDIX F | EMERGENCY PREPAREDNESS

Date: _____

EMERGENCY CONTACT LIST

A. Principal Investigator Information

Principal Investigator Name	Department	Room Number(s)

B. Lab Contacts

	Name	Email	Phone (cell)
1 st Contact (PI)			
2 nd Contact			
3 rd Contact			

C. Complete List of Lab Users

Name	Email	Phone

Date: _____

EQUIPMENT MAINTENANCE INFORMATION

Equipment Description	Location	Utilities and consumables required (e.g. chilled water, steam, CO ₂ , Liq N ₂)	Maintenance (brief description + frequency) OR reference to Equipment Specific Instructions	Contact Name	Contact Phone

Date: _____

EQUIPMENT SPECIFIC INSTRUCTIONS / STANDARD MAINTENANCE PROCEDURE

EQUIPMENT:

SPECIFIC PROCEDURES REQUIRED (prepare one sheet per equipment). Include instructions during the emergency (example: turn off procedures) and post emergency (for example start-up procedures).

Laboratory Emergency Closure Preparedness Checklist

The following are recommended steps to take prior to an event that may result in an interruption of laboratory operations.

<p>Lab Checklist:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Close fume hoods/biosafety cabinets. <input type="checkbox"/> Close all windows and lock all doors. <input type="checkbox"/> Secure/shut down all experiments that could be affected by loss of electricity, water, or other services. <input type="checkbox"/> Remove all chemicals and glassware from benchtops and store in cabinets as appropriate. <input type="checkbox"/> Remove biological materials from biosafety cabinets and/or benches, disinfect or autoclave, or safely store them as appropriate. <input type="checkbox"/> Ensure that all chemicals, radioactive, and hazardous waste containers are properly stored according to practices. <input type="checkbox"/> Ensure all gas valves are closed. If available, shut off gas to area. <input type="checkbox"/> Turn off appliances, computers, hot plates, ovens, and other equipment. Unplug equipment if possible. <input type="checkbox"/> Consolidate storage of valuable perishable items within storage units that have backup systems if possible. <input type="checkbox"/> Fill dewars and cryogen containers for sample storage and critical equipment. <input type="checkbox"/> Ensure that water reactive chemicals are in sealed containers and stored as appropriate. <input type="checkbox"/> Check that all compressed gas cylinders are secured. Remove regulators and use caps. <input type="checkbox"/> If possible, elevate equipment, materials and supplies, including electrical wires and chemicals, off the floor. <input type="checkbox"/> Inspect all equipment requiring uninterrupted power for electricity supplied through an Uninterrupted Power Supply (UPS) and by emergency power (emergency generator). <input type="checkbox"/> Secure lab notebooks and other data storage media. <input type="checkbox"/> Shut off and unplug sensitive electric equipment. <input type="checkbox"/> Ensure emergency contact and phone numbers are up to date. <input type="checkbox"/> Take phone tree with you or copy of your department's business continuity plan, if available. 	<p>Contacts:</p> <p>Principal Investigator:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 70%;">Telephone</td><td></td></tr> <tr><td>Mobile</td><td></td></tr> <tr><td>email</td><td></td></tr> </table> <p>Department Representative / Research Operations Manager:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 70%;">Telephone</td><td></td></tr> <tr><td>Mobile</td><td></td></tr> <tr><td>email</td><td></td></tr> </table> <p>Facility Manager:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 70%;">Telephone</td><td></td></tr> <tr><td>Mobile</td><td></td></tr> <tr><td>email</td><td></td></tr> </table> <p>Reporting an Emergency</p> <ul style="list-style-type: none"> ○ Call emergency services at 9-1-1 ○ Notify Campus Police - Emergency: 416-978-2222 ○ Building Emergency Repair: 416-978 3000 (83000) <p>Reporting an incident or accident</p> <ul style="list-style-type: none"> ○ https://ehs.utoronto.ca/report-an-incident/ <p>Latest U of T COVID-19 information</p> <ul style="list-style-type: none"> ○ https://www.utoronto.ca/message-from-the-university-regarding-the-coronavirus#faq <p>Feeling Distressed? There's Help.</p> <ul style="list-style-type: none"> ○ https://safety.utoronto.ca/ <p>Emergency Alerts</p> <ul style="list-style-type: none"> ○ https://www.utoronto.ca/alerts 	Telephone		Mobile		email		Telephone		Mobile		email		Telephone		Mobile		email	
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| <ul style="list-style-type: none"><input type="checkbox"/> Prepare for telecommuting as applicable and as procedures and policies of your department and division<input type="checkbox"/> Ensure you know how to contact your principal investigator, department representatives/research operations manager, and facility management group. | |
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