

The below considerations are in addition to the general measures already established by the government regarding how to conduct as individuals and as society to prevent the transmission of the virus. Government guidance is available at these links:

[Federal Government](#)

[Provincial Government](#)

[Regional Government](#)

[Brock Coronavirus Information](#)

A. Core Principles for Minimizing Exposure to Virus

1. Maintaining distance of 2m/6ft wherever possible.
2. Following strict hygiene protocols, respiratory protection etiquette, and minimizing contact with contaminated or potentially contaminated surfaces.
3. Wearing PPE where advised and needed for respiratory and contact protection. See details further down for PPE to wear in a lab or other shared research space. For the appropriate PPE outside a lab setting, check the document [COVID-19: Use of medical/non-medical masks and physical distancing](#).

B. Preparing Shared Campus Spaces for Reopening

1. Install standard University signage across entry/exit points to buildings, higher traffic areas, and points of gathering.
2. Where there is a narrow walkway and multiple users, establish one-way traffic. Indicate so with directional arrows on the floor and eye-level, eye-catching signage at point of entry, and pointing to exit. (University signage to be available.)
3. Limit passage through doorways and narrow spaces to one individual at a time.
4. Where possible, avoid using hands to open doors. Instead, push the door open with the forearm or body. As well, use the elbow to press the elevator buttons as possible.
5. Establish separate entry and exit ways to research spaces whenever possible and identify with clear signage.
6. Establish foot traffic plan for common areas where possible, e.g., lounges and study areas.
7. The grad student's area is closed as part of the mitigation for covid-19 transmission. Once permitted to open and utilize, redistribute seating in graduate students' areas as needed to keep distancing side to side and back to back, when inserting a physical barrier (e.g., Plexiglass) is not enough.
8. In labs and student office areas, reduce seating in multiuser spaces to accommodate occupancy restrictions (currently set at 1 individual per 18 m²) or designate individual chairs for each user.
9. Complete the [Researcher COVID-19 Mitigation Strategy](#) form or the [Teaching Lab COVID-19 Mitigation Strategy](#) form, as applicable.

C. Preparing Users for Reopening

1. All researchers must complete the COVID-19 online training modules on Sakai.
2. Supervisors must communicate and discuss requisites for working in any shared research space and all associated protocols to ensure comprehension and acceptance of the terms by users of the space.
3. Initially, supervision or frequent contacts with users will be required until the supervisor has confirmed that personnel can work safely under the modified procedures.
4. Screening will occur at designated entrances on Brock University campus.

D. Scheduling Requirements

1. Identify a scheduling authority for each shared research space.
2. Occupancy limits are established according to the dimension of the shared research space and are generally calculated at a rate of 18 m² per person. The COVID-19 provincial stages also factor in, so this is subject to change. Keep up to date on the Brock news.
 - a. When only one person is allowed per lab, exemptions may be requested for research activities that require multiple people in a single space due to safety considerations.
3. The identified scheduling authority will determine admittance to shared campus research space and stagger users based on the ability to keep distancing at benchwork, desk area, and shared spaces/equipment.
 - a. Institute a one-hour gap between individuals occupying research space to allow individuals to arrive and depart without crossing paths and to allow the air in the space to be exchanged through existing systems.
 - b. Require wearing medical masks level I or level II and eye protection (goggles or face shield) where simultaneous occupancy of a space is a possibility.
 - c. Identify appropriate risk-mitigation strategies where safety requirements demand multiple users share one space. These strategies will require review by the Academic Safety Committee.
4. Schedule undergraduate lab activities with consideration for traffic flows and disinfection requirements.
 - a. Stagger start of undergrad lab activities for labs sharing a hallway, whenever possible.
 - b. Open doors to labs in anticipation to time of entry and exit to prevent students from handling the knob and gathering at the point of entry/exit. This will necessitate TAs to go in well in advance and for sufficient time to be allocated between class bookings.

E. Requirements for Users of Shared Research Spaces

1. All users of shared research space must sign in and out as they enter and leave to confirm dates, times, and completion of sanitization routines. Supervisors may establish a paper-based system only if each user has an individual sheet affixed to a visible surface within their designated workspace that is accessible to others and cannot be easily damaged.
2. Personal protective equipment (PPE) to be worn always in labs or other shared research spaces whenever others are or may be present include a medical-grade mask and eye protection (goggles or face shield) because physical distancing is difficult:

- a. **Medical grade mask** ([ASTM](#)¹ level I or level II).
- b. **Eye protection: goggles** ([CSA](#)² Class 2).
Goggles must fit snugly, particularly from the corners of the eye across the brow. Indirectly vented goggles are suitable for infection control and are recommended over non-vented goggles to decrease the chances of fogging. They generally can be worn over prescription lenses.

In chemistry, where splash resistant goggles are indicated, Class 2, indirectly vented goggles are appropriate. If the goggles are unsuitable because won't fit over prescription lenses, face shields can be worn over the regularly used goggles in chemistry.



Figure 1. Class 2, indirectly vented, snug fit, over prescription lenses goggles.

¹ ASTM International (American Society for Testing and Materials): An international organization that develops and publishes voluntary consensus technical standards that operate globally.

² CSA Group: A global organization dedicated to safety, social good and sustainability. Leader in Standards Development and in Testing, Inspection and Certification around the world including Canada, the U.S., Europe and Asia.

c. **Eye protection: face shields** [CSA Class 6](#)

Face shields are commonly used as an infection control **alternative** to goggles when goggles cannot be worn over prescription lenses or to provide protection to other facial areas



Figure 2. Face shield class 6 fit snugly (adjustable) along the brows to the corners of the eyes, extends to the ears, the crown, and past the chin, are an alternative to goggles, and protect from splashes and impact.

To provide optimal protection from splashes and sprays, a face shield should have crown and chin protection and wrap around the face to the point of the ear, like the one shown in Figure 2. In chemistry labs, these face shields can be worn over the regularly used goggles. However, shields made of materials that burn easily should **not** be worn when in proximity to flammables, e.g. the disposable shields that are made of a thin plastic material commonly used through the pandemic.

d. **Gloves.** As needed according to the hazards present in the lab or specific activity.

For protection from COVID-19 gloves are not required when there is access to hand hygiene.

e. **Lab coats** as required or according to the hazards present in the lab or specific activity.

i. Lab coats and gloves are for lab use only, not to be worn in public areas.

f. **N95 or KN95 respirators** are required for some forms of [human participant research](#).

- If other health and safety hazards exist, a further risk assessment and review of PPE is required. [HSW](#) can assist in this assessment.
- When putting on and removing PPE, care must be taken to avoid contaminating the inner side of the PPE (side that goes in contact with the skin) with contaminated hands or objects. See [Annex # 1](#) for the procedures for putting on and removing PPE.
- Researchers can secure medical-grade masks and eye protection (goggles or face shield) through [Science Stores](#) or purchase via [Workday catalogues](#).

3. Hands to be washed upon entry to the lab and before exit. Hands to be sanitized upon exit.

- a. Paper towels to be available at every handwashing sink.
- b. Paper towel and sanitizer to be available in all common areas (e.g. kitchenettes, lounges).

4. Workspaces, common use equipment, faucets, and chair arms to be decontaminated by the user at the end of the work session in all shared research spaces, including labs whether wet, dry, undergrad, or grad. See [Annex # 2](#) for guidance on the type of disinfectant that are appropriate and decontamination procedures.

5. For common-use equipment rooms:

- a. To be occupied one individual at a time. Users to attend to provided schedules and check the occupancy status of the room through a glass panel, where available, or by calling at the door and wait for a signal /lack thereof before entering.
- b. Where hazards present require the use of additional PPE (e.g., liquid nitrogen generator room MC G200, autoclave rooms), personal protective equipment to be worn while inside the room that provides protection against the hazards present (lab coat and cryogenic gloves).
- c. Lab coat and gloves to be transported in a bag, worn while inside the room and removed before leaving.
- d. Bags used for the transport of PPE to be of individual use, kept within the individual's designated space in the lab and to be disinfected before and after use.
 - i. Boxes of gloves of various sizes can be made available in the room. Nitrile gloves to be worn before putting on cryogenic gloves.
- e. An appropriate disinfectant to be maintained inside the room to surface-decontaminate objects. See [Annex # 2](#) for considerations on cleaners and disinfectants, and for the recommended disinfectants.

Annex #1. Personal Protective Equipment Procedures**General considerations**

Physical distancing between individuals of at least 2 m or 6 feet remains a key mitigation strategy to lower the risk of COVID-19 transmission. The nature of lab work imposes frequent movements within the space and the shared use of equipment, items, and resources. This can make physical distancing difficult to attain at times or unforeseeable. Hence, medical masks level I or level II and eye protection are required whenever others are or may be present in a shared research space. For this and for the required PPE see above [Section E Requirements for Users](#).

In research with human participants, other respiratory protection may apply. Check the guidance document titled HSW Guidance for Research with Human Participants under Pandemic Conditions

If worn properly, [medical masks](#) help block large-particle droplets that may contain germs keeping it from reaching your mouth and nose. Medical masks also help reduce exposure of your saliva and respiratory secretions to others. However, they do not provide complete protection from pathogens and other contaminants because of the loose fit between the surface of the medical mask and your face. Therefore, it is essential to wear masks properly, following the procedures described in next heading.

Medical masks are not intended to be used more than once. If your mask is damaged or soiled, gets damp, or if breathing through the mask becomes difficult, remove the mask, discard it safely, and replace it with a new one. To safely discard your mask, place it in a plastic bag and put it in the trash. Wash or disinfect your hands after handling the used mask.

If a medical mask needs to be reused due to low availability, reduce the numbers of times of reuse to the minimum possible. Discard the mask daily or if it gets damp or when it becomes hard to breathe through it. Since the handling of masks increases the chances of contaminating its inner side (the side in contact with the mouth/nose), any handling must be done with extreme care, following the procedures describe [here](#).

Goggles must fit snugly from the corners of the eye across the brow. They should be CSA class 2. Face shields are commonly used as an infection control alternative to goggles as they can also provide protection to other facial areas. To provide optimal protection from splashes and sprays, a face shield should have crown and chin protection and wrap around the face to the point of the ear; face shields CSA class 6 meet the description.

Any coughing or sneezing suspected of being caused by a respiratory infection will disqualify the individual to work in a shared research space. If you suspect you have contracted a respiratory infection, stop working in the shared research space, notify your supervisor and follow the public health authorities' guidelines on how to proceed further regarding testing, isolation, and medical help.

Procedures

The way and order in which personal protective equipment is donned and doffed is of great importance to prevent self-contamination during the process. It should be done sequentially and carefully. Follow the steps as shown in the diagrams below.

<https://www.publichealthontario.ca/-/media/documents/ncov/ipac/ppe-recommended-steps>

**Recommended Steps:
Putting On Personal Protective Equipment (PPE)**

Public Health Ontario | Santé publique Ontario

1. Perform Hand Hygiene

2. Put on Gown

- Tie neck and waist ties securely

3. Put on Mask/N95 Respirator

- Place mask over nose and under chin
- Secure ties, loops or straps
- Mould metal piece to your nose bridge
- For respirators, perform a seal-check

4. Put on Protective Eyewear

- Put on eye protection and adjust to fit
- Face shield should fit over brow

5. Put on Gloves

- Put on gloves, taking care not to tear or puncture glove
- If a gown is worn, the glove fits over the gown's cuff

For more information, please contact Public Health Ontario's Infection Prevention and Control Department at ipac@oahpp.ca or visit www.publichealthontario.ca.

Ontario

Annex #1. Personal Protective Equipment Procedures (cont.)

Recommended Steps:
Taking Off Personal Protective Equipment (PPE)

1. Remove Gloves

- Remove gloves using a glove-to-glove / skin-to-skin technique
- Grasp outside edge near the wrist and peel away, rolling the glove inside-out
- Reach under the second glove and peel away
- Discard immediately into waste receptacle

2. Remove Gown

- Remove gown in a manner that prevents contamination of clothing or skin
- Starting with waist ties, then neck ties, pull the gown forward from the neck ties and roll it so that the contaminated outside of the gown is to the inside. Roll off the arms into a bundle, then discarded immediately in a manner that minimizes air disturbance.

3. Perform Hand Hygiene

4. Remove Eye Protection

- Arms of goggles and headband of face shields are considered to be 'clean' and may be touched with the hands
- The front of goggles/face shield is considered to be contaminated
- Remove eye protection by handling ear loops, sides or back only
- Discard into waste receptacle or into appropriate container to be sent for reprocessing
- Personally-owned eyewear may be cleaned by the individual after each use

5. Remove Mask/ N95 Respirator

- Ties/ear loops/straps are considered 'clean' and may be touched with hands
- The front of the mask/respirator is considered to be contaminated
- Untie bottom tie then top tie, or grasp straps or ear loops
- Pull forward off the head, bending forward to allow mask/respirator to fall away from the face
- Discard immediately into waste receptacle

6. Perform Hand Hygiene

This is an excerpt from Routine Practices and Additional Precautions In All Health Care Settings (Appendix L) and was reformatted for ease of use.

Watch the videos in the links below to learn how to don and doff PPE and how to properly wash and sanitize hands. Practice the techniques as needed until you are confident you can do it correctly.

[How to Hand Rub](#)

[How to Handwash](#)

[How to Put on a Gown and Gloves](#)

[How to Put on a Medical Mask](#)

[How to Remove Goggles and Face Mask](#)

[How to Remove Gloves](#)

How to put on a mask

1. Before entering the shared research space, remove any jewelry; tie and secure hair back, if you have long hair.
2. [Clean your hands](#) with soap and water or [hand sanitizer](#).
3. Remove a mask from the box and make sure there are no obvious tears or holes in either side of the mask.
4. Determine which side of the mask is the top. The side of the mask that has a stiff bendable edge is the top and is meant to mold to the shape of your nose.
5. Determine which side of the mask is the front. The colored side of the mask is usually the front and should face away from you, while the white side touches your face.
6. Follow the instructions below for the type of mask you are using.
 - *Face Mask with Ear loops:* Hold the mask by the ear loops. Place a loop around each ear.
 - *Face Mask with Ties:* Bring the mask to your nose level and place the ties over the crown of your head and secure with a bow.
 - *Face Mask with Bands:* Hold the mask in your hand with the nosepiece or top of the mask at fingertips, allowing the headbands to hang freely below hands. Bring the mask to your nose level and pull the top strap over your head so that it rests over the crown of your head. Pull the bottom strap over your head so that it rests at the nape of your neck.
7. Mold or pinch the stiff edge to the shape of your nose.
8. If using a mask with ties: Then take the bottom ties, one in each hand, and secure with a bow at the nape of your neck.
9. Pull the bottom of the mask over your mouth and chin.
10. Watch the video on how to [put on](#) and [take off](#) a mask.

How to remove a single-use mask

1. Clean your hands with soap and water or hand sanitizer before touching the mask. Avoid touching the front of the mask. The front of the mask is contaminated. Only touch the ear loops/ties/band. Follow the instructions below for the type of mask you are using.
2. *Face Mask with Ear loops:* Hold both ear loops and gently lift and remove the mask.
3. *Face Mask with Ties:* Untie the bottom bow first then untie the top bow and pull the mask away from you as the ties are loosened.
4. *Face Mask with Bands:* Lift the bottom strap over your headfirst, then pull the top strap over your head.
5. Throw the mask in the trash. Clean your hands with soap and water or hand sanitizer.

Medical masks are not intended to be used more than once. If your mask is damaged or soiled, gets damp, or if breathing through the mask becomes difficult, remove the mask, discard it safely, and replace it with a new one. To safely discard your mask, place it in a plastic bag and put it in the trash. Wash or disinfect your hands after handling the used mask.

If a medical mask needs to be reused due to low availability, reduce the numbers of times of reuse to the minimum possible. Discard the mask daily or if it gets damp or when it becomes hard to breathe through it. Since the handling of masks increases the chances of contaminating its inner side (the side in contact with the mouth/nose), any handling must be done with extreme care, following the procedures below.

Storing used masks

1. Designate a container exclusively for keeping the reusable mask. Label it as “reusable mask and [name of the user]”. A rectangular plastic box with a lid that can accommodate the mask flat on the bottom with the bands extended is appropriate.
2. Remove gloves following the procedure shown in the [video above](#).
3. [Wash](#) or [disinfect](#) your hands.
4. [Disinfect](#) the lid and sides of the container with an appropriate disinfectant.
5. Remove the container’s lid and lay in on its outer side over a clean surface, taking care not to contaminate hands with the surrounding objects, counter, etc. If hands get in contact with any object/item, disinfect them immediately.
6. Disinfect the container on the inside.
7. Remove mask following the procedure shown the [video above](#). Taking the mask by the band, lay it flat inside the container. The inner side (side in contact with your face) will face the bottom of the container. Determine how you will orient the top of the mask and always place it in container the same way to avoid confusion.
8. The bands will lay free from contact with both the inner and outer sides of the mask.
9. Close the container.

When removing the mask for reuse

1. [Wash](#) or [disinfect](#) your hands.
2. [Disinfect](#) the lid and sides of the container with an appropriate disinfectant.
3. Remove the container’s lid and lay in on its outer side over a clean surface, taking care not to contaminate hands.
4. Take the masks by the bands taking care not to touch the mask surface.
5. Put the mask on following the instructions on the video above.
6. At any point during the process, if you think you contaminated the inner side of the mask, discard it. Disinfect hands any time you consider hands could have been contaminated.

When wearing masks, they will be covering the mouth and nose or will be removed. The mask should NOT be slid out of its protective position (covering the mouth / nose) to temporarily uncover the nose, as doing so may cause its inner side to get contaminated.

Removing eye protection

Goggles and face shields shall be dedicated to each individual. Disinfect them before and after wearing them. For removal, grasp the eyewear by its sides or the back part of the shield, avoid touching the front part as that’s where the most contaminants are. Store the eye protection in a clean location and protected from any contaminants. Wash or sanitize hands, as appropriate, after handling or removing the goggles and face shields.

<https://www.fda.gov/medical-devices/personal-protective-equipment-infection-control/n95-respirators-and-surgical-masks-face-masks#s2>

Annex #2. Cleaning and disinfection. Recommended Disinfectants.

Routine and effective cleaning and disinfection is an essential activity to prevent the spread of the virus that causes COVID-19. Coronaviruses are enveloped viruses. This means they are one of the easiest types of viruses to kill with the appropriate disinfectant when used according to the label directions.

- Use only disinfectants that have a Drug Identification Number (DIN). A DIN is an 8-digit number given by Health Canada that confirms it is approved for use in Canada.
 - Alcohols at proper concentration are effective and widely used. See the directions below for the [use of alcohols](#).
 - Sodium hypochlorite solutions at 1000 ppm (household bleach) are effective against the COVID-19 causative virus; however, it is not the most suitable disinfecting agent for lab surfaces and equipment lab as it is corrosive, it must be prepared fresh daily because it loses potency quickly and it is easily inactivated by organic matter. Guidance for bleach is provided [further down](#).
- Check the expiry date of products you use and always follow manufacturer's instructions.
- A list of commercially available effective disinfectants published by Health Canada can be found at this link: <https://www.canada.ca/en/health-canada/services/drugs-health-products/disinfectants/covid-19/list.html>

Disinfection general guidance

- Every user of a shared research space is responsible for the cleaning and disinfection of their space.
- When applying a disinfectant, wear gloves in addition to any other required PPE. Nitrile or latex gloves (if not allergic to latex) for disinfection are good.
 - Every time a cleaning and disinfection round is completed, gloves will be removed, and a fresh pair of gloves will be put on.
 - Check gloves often for rips/tears, or any other defect and change them if so happens.
- Equipment, items, and surfaces that have been touched during the workday should be disinfected at a minimum at the beginning and the end of the work.
- Periodic disinfection rounds to high-touch surfaces/objects/items are necessary to remove viral particles or reduce the viral load.
 - When the research space is used by multiple individuals, they may coordinate cleaning and disinfecting different areas to increase efficiency.
 - If no coordination is made or when in doubt, all common-use surfaces and objects must be cleaned and disinfected by the last individual to leave the space.
- For disinfectants to be effective, the surface/object/item must be free from visible soil. Therefore, before applying a disinfectant clean first if there is soil, including dust. Clean with water, detergent and a friction movement with an object over the surface/object to be cleaned.
- In chemistry labs, contamination of surfaces with the chemicals in use is likely to occur. Hazardous interaction between the disinfectant and the chemical residues may occur.
 - Check beforehand that there are no incompatibilities between the chemicals in use with water and the disinfectant to be used during the cleaning and disinfection processes.
- Ensure the disinfectant is compatible with the surface before using.
- Never mix disinfectants - a dangerous chemical reaction may occur.
- Safety staff can assist in determining if the available disinfectants are appropriate for use besafe@brocku.ca or lvistorte@brocku.ca.

Electronics

- Consider putting wipeable covers on tablets, touch screens, keyboards, cell phones, and laboratory equipment monitors for easier disinfection.
- A good option is the use of alcohol-based wipes containing at least 70% alcohol. Rub the surface thoroughly with the wipe and let it air dry. Otherwise, follow the Health Canada [link](#) for other disinfecting agents options.
- Do not spray electronics if you use a liquid disinfectant.

How to disinfect with alcohols

1. Use 60-80% ethanol or 70-80% isopropanol (aka IPA).
2. Put clean gloves on clean hands, or if wearing gloves disinfect the gloved hands.
3. Clean the area/surface if visible dirty.
4. Apply the solution (squirt the solution directly over the surface or on a piece of cloth or paper towel) and spread it with a piece of paper towel over the surface or object to form a layer.
5. Allow to air dry. Do NOT wipe dry the alcohol.
 - a. If disinfecting wipes are available, they are a sound option. Rub the surface or object with the wipe various times and allow to air dry.
6. Discard the piece of paper towel or wipe in a garbage container lined with a plastic bag.
7. Continue to clean another object/surface, or if this is the end of disinfection round, remove gloves.
8. Wash or sanitize hands.

How to disinfect with bleach

Bleach solutions for the disinfection of general surfaces and equipment in the lab is not the best option as it is a corrosive; it must be prepared fresh daily because it loses potency quickly and it is easily inactivated by organic matter. Use bleach as a general disinfectant on surfaces and equipment if you do not have a more suitable alternative. If you must use bleach, follow these instructions:

- Put clean gloves on clean hands or if wearing gloves, disinfect gloved hands.
- Solutions with at least 1 000 ppm sodium hypochlorite are effective. Most household bleach products contain 5.25% sodium hypochlorite, so a solution of 20 ml bleach + 980 ml water is effective.
- The [Chlorine Dilution Calculator](#) is a useful tool to calculate your dilution.
- Ensure the stock product is not past its expiration date. Some bleaches, such as those designed for safe use on colored clothing or for whitening, may not be suitable for disinfection.
- Prepare the bleach solutions fresh daily and date the bottle. Discard any leftovers as hazardous waste.
- Apply the solution (squirt the solution directly over the surface) or on a piece of cloth or paper towel and spread it over the surface or object to form a layer.
- Leave solution on the surface for at least 1 minute. Wipe dry.
- Wipe the surfaces and equipment with water to remove bleach residues, if the material they are made up of is corrodible.
- Remove gloves and wash hands.

A list of commercially available effective disinfectants published by Health Canada can be found at this link: <https://www.canada.ca/en/health-canada/services/drugs-health-products/disinfectants/covid-19/list.html>

The Environmental Protection Agency of the US list of approved disinfectants is available at this link <https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2>. This list is also posted on our webpage as an [Excel spreadsheet](#).

Other literature available on this topic:

<https://www.publichealthontario.ca/-/media/documents/B/2018/bp-environmental-cleaning.pdf>

<https://www.canada.ca/en/health-canada/services/drugs-health-products/disinfectants/covid-19/list.html>

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/hand-hygiene.html>