COVID-19 Workspace Safety Plan – Lab Specific

This workspace safety plan will assist Principal Investigators who wish to continue or resume research activities in their lab. This plan will include a review of activities to be undertaken in the lab to ensure effective controls are in place to prevent the spread of COVID-19. Principal Investigators are responsible for ensuring this document reflects current government guidance and notices which can be found, along with information about UBC’s response to the pandemic at https://covid19.ubc.ca/.

This plan must be reviewed by your Local Safety Team, and signed by your Unit Head/Director. Once complete, the plan can be submitted with your online application to return to research.

Resources to Consult

The following guidance documents and resources were used in the development of this plan:

☑ Preventing Exposure
☑ Personal Protective Equipment
☑ Physical Distancing Guidelines
☑ Reporting COVID-19 Exposure
☐ Communications Resources
☐ UBC Research Resumption webpage
☐ WorksafeBC

Section #1: Lab information

<table>
<thead>
<tr>
<th>Department</th>
<th>Mechanical Engineering</th>
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<tbody>
<tr>
<td>Faculty</td>
<td>Applied Science</td>
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<tr>
<td>Building(s)</td>
<td>CERC</td>
</tr>
<tr>
<td>Lab(s)/workspace(s)</td>
<td>154, 156, 157, 158, 159</td>
</tr>
</tbody>
</table>

Introduction to Your Lab

Patrick Kirchen’s lab is located in the Clean Energy Research Center and utilizes spaces to carry out experimental research related to combustion and emissions, generally from internal combustion engines. There are currently 10 researchers in my group (4 PhD, 5 MASc, 1 UG), of which 9 require laboratory facilities for their research.

Section #2 - Risk Assessment

1. Lab/workspace Occupancy (under proposed COVID-19 operations)
List the number of people that will be present in your lab/workspace at the same time. List this by every room/lab/workspace you occupy.

Confirm that you have discussed each employee’s comfort level with returning to work and have addressed any concerns, or will require further assistance in doing so. Any worker (staff, students,
All workers listed below have been consulted on their comfort level with returning to work. This has been done on an individual level as well as a group. Any concerns have been addressed and integrated into the plan presented herein. Workers are asked to document their comfort level in an email to the PI.

Any workers that are not comfortable in returning to campus can request and exemption from their supervisor.

A maximum of three researchers and one PI will be in the aggregate lab space at the same time:
- One researcher in CERC 154 (“combustion lab”), and
- One researcher in CERC 157 and one researcher in CERC 159; OR one researcher in CERC 158
- PI in either 154 or 156

Each of the lab spaces (154, 157-159) are separate rooms and are separated by more than 5 meters. Users of 157-159 will also use 156 (“Control Room”). To ensure sufficient physical distancing 158 will not be used if either 157 or 159 are used. Users of 156 must remain on opposite ends of the room.

This will result in on-site activities resuming at ~1/3 the normal level.

Below is a summary of the researchers in my group and a plan for on-campus or remote work:
- **PI:** The PI will be on campus for supervision and workplan compliance verification. This will be scheduled on an ad-hoc basis but will not exceed a 30% time on campus. The activities will be limited to direct/hands-on supervision or inspections. This will not be used for meetings that can be carried out remotely. Where possible, computer desktop sharing will be used to facilitate remote training and/or supervision.
  - **PhD:**
    - Will carry out experiments needed for thesis completion (currently in year 4) and meeting NSERC CRD project commitments. These measurements will require a minimum of 8-10 weeks on campus. Any delay will further delay program completion (originally planned for December 2020).
    - Expected time distribution: On campus 30%; remote 70%.
    - Remote time will be used for data analysis and experiment planning.
    - CERC 157/156.
    - These activities will require access to, or support from the MECH machine shop.
  - **MASc:**
    - Will carry out experiments needed for thesis completion (currently in year 5) and NSERC CRD project commitments. Measurements will require 6-8 weeks (on campus). Any delays will further delay thesis completion, which was originally planned for August 2020.
    - Expected time distribution: On campus 30%; remote 70%.
    - Remote time will be used for data analysis and experiment planning.
    - CERC 158/156.
Will carry out experiments needed for thesis completion (currently year 1) and NSERC CRD project commitments. He will commission instrumentation (~6 weeks on campus) which will be used for his and other students’ theses, in addition to a time-sensitive field campaign with an industry partner (Seaspan Ferries) in the second half of August. In addition to delaying thesis progress significantly, not being able to return to campus will jeopardize this unique field campaign. The details on site workplan for the field campaign is being developed by Seaspan and will be submitted as an addendum when it is available (expected in July, 2020).

Expected time distribution: On campus 30%; remote 70%. Remote time will be used for data analysis and experiment planning.

CERC 159/157/156.

These activities will require access to, or support from the MECH machine.

Will carry out experiments needed for thesis completion (currently year 1) and KIST project commitments. This includes assembly, installation, and commissioning of a fuel system. Further delays will be significant as these commissioning activities will become significantly more time-intensive when the engine has been modified for another project (expected end of summer 2020).

On campus 30%; remote 70%. Remote time will be used for experiment planning and material procurement. CERC 159/157/156.

These activities will require access to, or support from the MECH machine.

Will carry out experiments needed for thesis completion (currently year 1), NSERC CRD project commitments and a field campaign with Seaspan Ferries in the second half of August. Activities will include recommissioning and validation of a methane sensor. In addition to delaying thesis progress significantly, not being able to return to campus will jeopardize this unique field campaign.

Expected time distribution: On campus 30%; remote 70%. Remote time will be used for data analysis and experiment planning.

CERC 154/157.

These activities will require access to, or support from the MECH machine.

Will carry out experiments for NSERC CRD project commitments. He will calibrate and prepare the methane sensor for a field in the second half of August. Delays in these activities will jeopardize the field campaign.

Expected time distribution: On campus 10%; remote 90%. Remote time will be used for data analysis and experiment planning.
2. Hazard Identification
Describe what hazards exist in your lab/workspace; both research-related (chemicals, heavy machinery) and COVID-19-related (areas that require closer personal interaction, equipment/instruments that cannot maintain social distancing i.e. that require >1 person to operate).

Research related hazards:
- Rotating machinery
- Hot surfaces
- Noise
- Compressed gases, high pressure liquids
- Toxic gases (CO, NO)
- Flammables (CH4, H2, natural gas, diesel)

COVID-19 related hazards
- Shared instrumentation and tools (can be operated independently):
  - Engine exhaust gas analyzers
  - Lab benches
  - Hand tools
  - Inspection of equipment
- Joint operated equipment and operations (requires >1 person, difficult to maintain physical distancing):
  - Media separator installation/commissioning/operation (facemask, gloves, safety glasses)
  - Optical conversion of Proteus engine (facemask, gloves, safety glasses)
  - Training for use of equipment and instrumentation (facemask, gloves)

To facilitate these activities, the PPE indicated in the PPE section will be used. Note at any instance of such operations must be documented in the schedule and sign in/out form.

3. Employee (HQP, research staff, other) Input/Involvement
Detail how you have involved frontline workers (HQP and research staff) and Joint Occupational Health and Safety Committees (JOHSC) and/or Local Safety Teams (LST) in identifying risks and protocols as part of this plan.

Describe how you will publish your plan (online, hardcopy) and otherwise communicate workplace health measures to employees. Guidelines from SRS are available here: [https://srs.ubc.ca/covid-19/health-safety-covid-19/working-safely/](https://srs.ubc.ca/covid-19/health-safety-covid-19/working-safely/)

This plan was generated based on the SRS guidelines, BCCDC guidelines and fact sheets, CERC return-to-work townhall, MECH guidance documents, and CERC/CHBE return to work contract. Based on these, a draft plan was presented to and discussed with the researchers to identify areas for further refinement. The plan was updated and again presented and discussed with the researchers. The CERC LST has provided guidance on hygiene, occupancy, and traffic management.

Each researcher will need to review and sign the plan, indicating that they will adhere to it before they may return to campus. All researchers will receive a copy of the plan by email, softcopy will be placed on our UBC Workspace share, and hardcopies will be available in each of the lab spaces.
Section #3 – Hazard Elimination or Physical Distancing

4. Scheduling
For those required or wanting to resume work at UBC, detail how you are rescheduling employees (e.g. shifted start/end times) in order to limit contact intensity at any given time at UBC.

Discuss your working alone procedures and how they will be adapted for this safety plan. Also describe how you will track those entering/leaving work i.e. sign in/sign out process.

Researchers in my group will only be returning if there is a demonstrated need related to thesis and/or project sponsor activities.

Access to the laboratories will be scheduled (sample schedule provided below) as follows:
- A weekly schedule will be developed and used to identify which researchers may be in which lab spaces.
- The use of any shared (major) equipment is explicitly identified.
- Note that room 156 is not as a designated work space as it is the control room associated with 157, 158, and 159; however the desk in front of 159 may be occupied by the PI for supervisory activities. Also note that 158 may not be used when either 157 or 159 are used.
- During any given time period, the lab spaces and equipment may only be used by those identified in the schedule.
- Access is scheduled such that researchers may spend a maximum of two weeks in the lab, followed by two weeks working remotely. The two weeks of remote work is to be used for data analysis and planning. Researchers are expected to continue appropriate physical distancing during the remote working periods.
- If researchers developed COVID related symptoms at any time during on-campus or remote working, they will self-isolate according to BCCDC protocols (http://www.bccdc.ca/health-info/diseases-conditions/covid-19/about-covid-19/if-you-are-sick).
- All researchers will self-assess each day prior to travelling to campus
- Researchers will be required to sign-in and sign-out on a hard copy schedule specific to their space. On this form they must also indicate any major equipment that was used.
- Scheduling and sign-in/out will be coordinated according to CERC/CHBE protocols (see appendix).
- Working hours are limited to 8am-4pm to allow custodial staff access for cleaning.

Sample schedule:

<table>
<thead>
<tr>
<th>Facility</th>
<th>Combustion Lab (154)</th>
<th>Proteus (157)</th>
<th>SCRE (158)</th>
<th>Hydra (159)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
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<td>Week 2</td>
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Working Alone:
- No researcher may work alone at any time (as before)
- Researchers may not enter the test cell while an engine is running (as before)
- Researchers are expected to communicate with other researchers so all are aware ongoing activities and potential hazards.
- Researchers must discuss and document their planned activities with the PI and other researchers prior to travelling to campus. Prior to completing any activities involving the hazards outlined in section 2,
researchers must establish a check-in interval with a researcher in one of the other spaces. This plan will be discussed developed by the PI and researchers prior to coming to campus.
- Any commissioning or energizing activities that must be carried out within an engine cell (e.g., pressurizing a fuel system) require that another researcher act as an observer from the control room (156). This will allow physical distancing to be maintained while still being able to provide immediate support if needed. The need for this arrangement will be planned prior to travelling to campus and will be discussed on a case-by-case basis.
- In the event the work plan changes (e.g., to include hazards not originally anticipated), the researcher will contact the PI by email or telephone and establish a work plan and suitable check-in interval prior to commencing the activities. This modified plan must be documented.
- Music and/or headphones are not be used to ensure that researchers can respond to calls/requests for assistance from researchers in other spaces. The exception to this is hearing protection while operating the engines. Researchers using hearing protection must confirm this with other researchers, and may only do so when other researchers are not carrying out activities with hazards.

Supervision:
- The need for supervision will be assessed during the development of the schedule. Each researcher will identify planned activities and through the discussion with the PI, the need for supervision will be identified.
- If PI or senior student supervision is required the schedule be adjusted to accommodate this and the PI (or supervisor) will nominally be located in the “PI station” area on the designated workspace diagram.

In addition to the above, the following general practices will be followed:
- Where possible, workers (HQP, research staff, others) will work from home.
- Anybody who has travelled internationally, been in contact with a clinically confirmed case of COVID-19 or is experiencing “flu like” symptoms must stay at home.
- All employees are aware that they must maintain a physical distance of at least 2 meters from each other at all times. If activities require a distance of less than 2 meters, a plan must be developed and documented.
- Do not touch your eyes/nose/mouth with unwashed hands
- When you sneeze or cough, cover your mouth and nose with a disposable tissue or the crease of your elbow, and then wash your hands
- All employees are aware of proper handwashing and sanitizing procedures for their workspace
- Staff/researchers will not attend large events/gatherings (> 50 people in a single space)
- Supervisors must ensure that all workers have access to dedicated onsite supervision at all times; via their own presence, members of safety committees, campus security or other.
- Researcher will follow the Working Alone Policy as outlined above.
- All staff wearing non-medical masks are aware of the risks and limitations of the face covering they have chosen to wear or have been provided to protect against the transmission of COVID-19. See SRS website for further information.
- Note transportation/vehicle guidelines if applicable: 1 Person per vehicle, unless the vehicle is large enough to maintain 2m between occupants.
- Any field measurements will follow these protocols as well as the additional measures indicated by any site owners.

5. Occupancy limits, floor space, and traffic flows
APSC recognizes that labs are dynamic environments and it may be challenging to adhere to physical distancing guidelines. Nonetheless, controls must be in place to keep personnel spaced at least 2m
Apartment at all times. Clear communication of this to employees, monitoring of implementation, in addition to physical controls (signage) are needed.

**As such: Using floor plans and/or photographs of your lab/workspace:**

1) Identify and list the rooms and **maximum occupancy** for each workspace/area;
2) Illustrate a 2 metre radius circle around stationary workspaces/benches/instruments and common areas or equivalent approach to social distancing; and
3) Illustrate one-way directional traffic flows

- Traffic flows will be as per the attached diagram for CERC. Researchers will enter through the main CERC door and exit through the side door. Researchers working in the engine cells (157, 158, 159) may also exit through the rear doors in each cell. Exit doors may be propped open for re-entry for short periods of time, only if other researchers are in CERC and can observe the space (e.g., 156, but not 157-159).
- Researchers that must pass through 154 to access other spaces must ensure that they maintain 2 meters distance from any researchers in 154. The researcher in 154 may need to temporarily relocate to another part of the room to facilitate this.
- Workers will have designated spaces (per attached “Designated Workspace Plan”) and must remain in these spaces, except for entry/exit and to temporarily acquire tools/material from other spaces. Workers must maintain 2m distance when passing through other spaces.
- Only one worker is permitted per space (154, 157, 158, 159); with the exception of 154, where the PI may utilize a designated space (see workspace plan) when present for supervisory activities.
- Workers may not use other spaces, even if they are not immediately occupied.
- The workspaces for 157 and 158 overlap and workers may **not** be simultaneously be using both spaces. Similarly, 159 may be used while 158 is used.
- Only one worker may use the AVL and/or gas cylinders in 156 at a time. These must be sanitized after use.

### Section 4 – Engineering Controls

#### 6. Cleaning and Hygiene

**Detail** the cleaning and hygiene regimen required to be completed by HQP, research staff and the PIs for common areas/surfaces (Custodial has limitations on cleaning frequency, etc.).

Outline specific cleaning processes and schedule for high-touch equipment, specialized/sensitive equipment or other unique circumstances to your lab/workspace. **Detail** how and what types of cleaning products and disposal options you will provide. **If possible,** include cleaning stations/infrastructure on your lab photos/plan.
Handwashing (see also general practices in “Scheduling”)  
- All workers must wash or sanitize their hands upon arrival and prior to beginning work, as well as any time they leave or return to their designated workspace.  
- The sink in 154 shall be used for handwashing. The CERC provided sanitizers may be used in lieu of handwashing.  
- Posters indicating proper handwashing (see appendix) will be affixed near the sink.

Cleaning of tools and equipment will be carried out according to the SRS guidelines: Cleaning Safe Work Procedure

Tools  
- Each workspace is equipped with its own set of basic handtools which should remain in the respective workspace. Once removed from the toolbox, the tools must be cleaned before they are returned to the toolbox.  
- To avoid confusion, tools not in a toolbox will be considered as “in-use” and not cleaned and those in the tool box must be cleaned. To avoid clutter, workers will clean tools and return them to the toolbox at the end of each day. Workers should plan sufficient time at the end of the day to ensure tools are cleaned.  
- Workers may use specialized tools from other workspaces in their own workspace, but must clean any tools before returning them. Each workspace has a bin in which tools from other spaces can be stored until they are cleaned and returned (at the latest by the end of the workers scheduled access).  
- In summary, all tools and equipment used by a worker must be cleaned before:
  - The end of the work day and/or scheduled time in a designated workspace (typically Friday),  
  - Tools are returned them to another workspace, or  
  - They are used by other workers.  
- After cleaning of tools, any metallic tools will be coated with light oil (e.g., WD-40) to minimize oxidation and corrosion

Shared Major Equipment (AVL, instrumentation, cameras, gas bottles, etc.)  
- Equipment will not be shared by workers at the same time.  
- At the end of each scheduled access, each worker will clean the contact surfaces of the facilities that they have used. This includes but is not limited to:
  - Workbenches, tables, counters, desks  
  - Door handles, light switches, sink fixtures  
  - Equipment control panels (buttons, switches, dials, etc), gas valve, regulators, etc.  
- Each of the engine cells (157-159), the 154 workspaces, the AVL analyzer, and the gas bottles will have a sign indicating whether they are “clean” or “dirty”. While in use, the signage must indicate “dirty” and only once it has been cleaned per the checklist can the sign be changed to “clean”.  
- Workers scheduled to use a given space or equipment are required to ensure that it is cleaned prior to the end of their scheduled time.

In addition to the above cleaning procedures, temporal phasing of equipment use will be implemented: equipment will remain unused for a minimum of two days between different users.

Training:  
- All workers will review this plan as well as the SRS guidelines.  
- Prior to commencing an on-campus work, the worker will walk through the workspace with the PI (maintaining 2m physical distance) to:
  - Identify boundaries of designated workspace and surfaces that may be used  
  - Identify surfaces, equipment, etc. that must be cleaned
**COVID-19 Safety Plan Template**

- Provide orientation of cleaning and handwashing station

**Supplies:**
- The following supplies for this plan have been ordered from McMaster Carr and will be available prior to workers commencing activities.
  - “dirty” tool bins
  - Paper towels for hand drying
  - Hand soap
- Cleaning supplies for tools and surfaces will be provided by MECH, additional degreaser will be used for oily and/or grease

<table>
<thead>
<tr>
<th>7. Equipment Removal/Sanitation</th>
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<tbody>
<tr>
<td>Detail your appropriate removal of unnecessary tools/equipment/access to areas and/or adequate sanitation for items that must be shared that may elevate risk of transmission, both research-related (i.e. instruments, tools) and general (i.e. coffee makers in break rooms)</td>
</tr>
</tbody>
</table>

- Equipment and workspaces are limited to one researcher at a time, with a break of at least two days in between.
- The offices and break room space (CERC 153) will remain closed.

<table>
<thead>
<tr>
<th>8. Safety Infrastructure Requests (Partitions, Plexiglass installation)</th>
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</thead>
<tbody>
<tr>
<td>Describe any needs for safety infrastructure i.e. physical barriers, plexiglass installation required for your lab/workspace and if possible include them on your photos/room plan.</td>
</tr>
</tbody>
</table>

- As all workspaces are separate rooms distanced by significantly more than two meters, no additional barriers are required.

**Section 5 – Administrative Controls**

9. Communication & Training Strategy for Employees

Describe how you (the PI) have or will communicate the risk of exposure to COVID-19 in the workplace to your HQP/research staff/other employees and the safety controls in place to reduce such risk.

Detail how you will ensure that all employees successfully complete the Preventing COVID-19 Infection in the Workplace online training and orientation to your specific safety plan.

- All workers returning to the workspace will have reviewed this plan, as well as earlier drafts.
- Once approved, this plan will be remotely presented and discussed with all workers.
- The plan will be stored electronically on our UBC Workspace and will be accessible to all workers.
- Expectations have been discussed with each research during remote one-on-one meetings, as well as two remote group meeting specifically for this purpose.
- Each returning worker will have an on-site orientation (discussed above)
- Researchers will not be permitted to return to campus until they have emailed to the PI a certificate of completion for the “Preventing COVID-19 Infection in the Workplace” online training.
- If workers have concerns they may raise these directly to the PI or the local safety team in CERC
Researchers must self-assess every day prior to coming to campus using the BC Self-Assessment tool (https://bc.thrive.health/covid19/en) and may only come to campus if they have no symptoms.
  o If workers do have symptoms, they must self-isolate, contact 8-1-1, and inform the PI.
  • Any suspected workplace exposures to COVID-19 must be reported to the PI immediately, ideally via email.

10. Signage
Detail the type of signage you will utilize and how it will be placed (e.g. floor decals denoting one-way walkways and doors, ‘cleanliness state’ of equipment/instruments, hand-washing guidance). See WorksafeBC for signage guidelines and templates.

The following signage will be implemented:
  • On foyer side of door to 154: “Access only for room 154, 156, 157, 158, and 159”
  • On reverse side of 154: “May only be used as exit in case of emergency”
  • On entrances to 157, 158, 159; optical table and workbenches in 154; AVL; gas cylinders; PI stations: signage indicating “clean” or “dirty”
  • Existing “corridor” markings in 154 indicate pass-through corridors; tape arrows will be added to identify direction of travel
  • UBC-SRS handwashing posters will be posted by handwashing station

11. Emergency Procedures & Reporting
PIs must ensure that all employees entering the lab should be aware of the Building Emergency Response Plan (BERP) and have access to it. If applicable, detail your strategy to amend your lab’s emergency response plan procedures during COVID-19.

All workers are required to read and be familiar with the latest revision of the CERC/CHBE Building Emergency Response Plan, available at: https://chbe.sites.olt.ubc.ca/files/2020/06/CHBE_BERP.pdf


12. Monitoring
Describe how you will monitor your workplace (supervisor, departmental safety representative, other) and update your plans as needed; detail how employees can raise safety concerns (e.g. via the JOHSC or Supervisor).

  • Monitoring will be carried out by the PI via on-site visits (<30 minutes), or during supervision activities
  • When the PI is not present, senior PhD students [REDACTED] or the lab safety representative [REDACTED] will monitor for compliance with this plan. Any non-compliance will be reported to the PI
  • Right to refuse work
  • Report incidents to CAIRS
COVID-19 Safety Plan Template

- Raise concerns to supervisor, LST, JOHSC, or safety officer.

Section #6 – Personal Protective Equipment (PPE)

13. Personal Protective Equipment

UBC has a central process for purchasing PPE. Describe what PPE you will require for your lab.

<table>
<thead>
<tr>
<th>#</th>
<th>Type of PPE</th>
<th>Activity and PPE Use Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>Facemask (N95)</td>
<td>Conversion of the engine to optical configuration (room 157) includes several operations which requires two workers. During this, a 2m distance may not be possible for short periods of time (~minutes). N95 Masks are required for these operations. During the installation and commissioning of the media separator it is anticipated that there will be periods where two workers must be in room 157 for limited periods (max. 30 minutes). It is expected that a 2m distance can be maintained; however masks will be worn as an additional precaution.</td>
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<tr>
<td>1</td>
<td>Faceshield</td>
<td>Conversion of the engine to optical configuration includes several operations which requires two workers. During this, a 2m distance may not be possible for short periods of time (~minutes). Faceshields will be used for additional protection during these operations. One Faceshield is already available and disposable faceshields are available in CHBE stores.</td>
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- PPE is available through CHBE stores. Requests can be made at: Place requests: https://ubc.ca1.qualtrics.com/jfe/form/SV_6hCdwQCnmixcQYt
- Each researcher will be responsible for disposal of their PPE into a separate closed plastic bag. Plastic bags will be provided. The sealed plastic bags of PPE for disposal should include used wipes etc. and the sealed bags are to be placed in appropriate garbage containers and bins.
- PPE is not be shared and workers are to bring take their safety glasses home with time to ensure they are not used by others.
- Faceshields will be stored in a “dirty” tool bin until they are cleaned. At this point they are returned to the cleaning station in 154.

Acknowledgement

I confirm that this Safety Plan has been shared with all workers (HQP, research personnel, etc.) who will be accessing this space both through email and will be made available as a shared document. Workers can either provide a signature or email confirmation that they have received, read and understood the contents of the plan.

Date: June 19, 2020
Name (Manager or Supervisor): Patrick Kirchen
Title: Associate Professor
Department/School Head/Director Approval

Steve Feng, Department Head
Name, Title

Signature

June 22, 2020
Date
Designated Workspaces

- Colored lines indicate designated workspace boundaries and may only be crossed for entry/exit, or acquiring tools/materials.
- If materials or tools are taken from an occupied workspace, 2m distancing must be maintained from any other workers.
- **NOTE:**
  - 158 and 157, and 158 and 159 may not be simultaneously occupied.
  - Workers in 154 may only use the optical tables and wood workbench. Other surfaces shall not be used to simplify cleaning.
  - The work bench underneath the windows in 154 and the control desk in front of 159 may be used by the PI for supervisory purposes.
- Handwashing and cleaning station is located in 154.
CERC Engine Combustion (Room 153, 154, 156, 157, 158, 159)
- one way only (enter from entrance and exit through side door)
<limit 2 people per blue section>

CERC Main office & Fuel Cell Lab (Room 150, 151, 152, 149)
- two ways (same entrance & exit) <limit 1 person per office/lab>

CERC Highhead Lab (Room 145)
- two ways (same entrance & exit) <limit 2 people per yellow section>
Overview

Employers need to take all necessary precautions to minimize the risk of COVID-19 transmission and illness to employees by identifying exposure hazards and developing measures to control exposure. Physical distancing requires us to limit close contact with others by keeping at least two meters (six feet) away from one another. For some, physical distancing will be difficult as many everyday tasks involve employees having to work closely together (e.g. confined spaces, manual material handling, maintaining/repairing equipment, retail services).

This document provides guidance about UBC’s stance on physical distancing in the workplace.

Visit [ubc.ca/covid19](http://ubc.ca/covid19) for more information about UBC’s response to COVID-19, including frequently asked questions.

Current Health Guidance Relating to Physical Distancing

Throughout the current COVID-19 global outbreak UBC has taken direction on infection prevention from the Provincial Health Officer, the BC Centre for Disease Control (BCCDC) and Vancouver Coastal Health (VCH), and continues to do so. This guidance can be expected to evolve as these agencies continually monitor accumulating scientific evidence to determine how we can best prevent the spread of COVID-19.

As this document has been developed, the current health guidance from the above agencies can be summarized as follows:

- Physical distancing means limiting close contact with other people to slow the spread of an infectious disease by keeping at least two meters (six feet) away from one another.
- Physical distancing is proven to be one of the most effective ways to reduce the spread of illness during an outbreak.
- Work from home and conduct virtual meetings, if possible.
- Stay home as much as possible.
- When outside of your home, practice physical distancing.
- If you are ill, have flu like symptoms or have a fever or cough, you should stay home.
- Avoid crowded places and non-essential gatherings
- Greet people with a wave instead of a handshake.

Achieving Physical Distancing via the Hierarchy of Controls

Based on the current public health guidance and operational needs on our sites, UBC’s position on Physical Distancing is that all necessary precautions must be taken to minimize the risk of COVID-19 transmission to employees. Where physical distance requirements are not met by current Safe Work Procedures (SWPs), tasks may not be assigned unless SWPs are amended as per the Safe Work Procedure (SWP) Review Form to address this additional hazard.
Not all SWPs or common practices allow for easy physical distancing due to space constraints, equipment design, load-splitting needs, etc. Where working in close quarters is used to address another identified hazard, e.g. over exertion, identifying and developing alternative measures to control the original hazard is the best practice. Where this is not possible, additional measures to address infectious risk should be monitored carefully to ensure they do not introduce additional risks.

The best practice for mitigating risk is to follow the Hierarchy of Controls. Note that the examples provided are not exhaustive. Contact Safety & Risk Services for assistance in finding options suitable for your needs.

- **Elimination**
  Physically remove the hazard
  - Public Health is working to eliminate COVID-19

- **Substitution**
  Replace the hazard
  - Outsource unacceptably high risk tasks to specialized contractors
  - Use a lifting device rather than multiple workers to handle heavy loads.

- **Engineering Controls**
  Isolate the hazard from the workers
  - Install barriers to separate employees from other employees, students or public.

- **Administrative Controls**
  Change the way work is performed
  - Organize & prioritize work tasks to limit the number of employees present at one time
  - Position & train employees to meet physical distancing requirements.

- **PPE**
  - Revise PPE requirements to augment other controls and provide PPE to employees if and where it is required to perform work safely and only if risk is still present after implementing the controls above.

It is important to note that while the controls are listed in order of effectiveness, all types of controls should be considered and generally work best in combination.

If you have any questions or require advice about Physical Distancing at UBC, please contact Safety & Risk Services by emailing ready.ubc@ubc.ca.
WASHING YOUR HANDS

Duration of the entire procedure: 20-30 seconds

1. Wet hands with warm water.
2. Apply soap.
3. Lather soap and rub hands palm to palm.
4. Rub in between and around fingers.
5. Rub back of each hand with palm of other hand.
6. Rub fingertips of each hand in opposite palm.
7. Rub each thumb clasped in opposite hand.
8. Rinse thoroughly under running water.
10. Turn off water using paper towel.
11. Once dry, your hands are now safe.

Clean hands protect against germs & infection