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

Department	ECE
Faculty	Applied Science
Building(s)	*Fred Kaiser Building*
Lab(s)/workspace(s)	*4060*

Introduction to Your Lab

Kaiser 4060 consists of an office area (about 30 students) with an adjacent photonics lab consisting of three large optical tables. The office area is shared with other research groups. Dr. Chrostowski's usage of Kaiser 4060 is for photonics 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.

Room #	Total # of Personnel (usual)	Total # of personnel who needs access to the space	Max # at one time during Phase 2
4060	30	4 Regular (3 PhDs, 1 RA) 13 Occasional (7 Master Students, 5 PhDs, 1 RA)	9

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, faculty, post docs, research associates, technicians and other research personnel) who has concerns about returning to work on campus can request an exemption to his/her supervisor.*

The regular personnel that have been asked to return to on-campus research as they are experienced in either the characterization and measurement aspects of biosensors, or will be fabricating biosensor chips.
The occasional personnel are students with experiments that can be automatically performed once the initial set-up is complete. The data from these experiments can be obtained via VPN remote-network access, minimizing the time required to be physically in the lab.

Kaiser 4060 will operate at a fraction of normal capacity. During this time, a maximum of a total 5 personnel will be allowed in Kaiser 4060 combined at one time. Kaiser 4060 is broken down into 4 areas (detailed below in Section 3), "The Lab", "Section 1", "Section 2", and "Section 3". Only 3 personnel maximum are allowed in "The Lab" at any given time, while the other sections will allow only 2 personnel maximum each.
In "The Lab", personnel will be working from more than 2 meters distance away. Experiments consist of 1 operator of the optical test bench (controlled by a computer) and another operator who will control the additional equipment (e.g. electrical controls for opto-electrical testing). There are 3 test benches in the "Lab" area and each one is positioned a distance greater than 2m away from the others.
The personnel in the computer workstation areas ("Section 1", "Section 2", and "Section 3") have workstations that are placed more then 3 meters apart. Each workstation will only have 1 personnel operating on it at a time.

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)

Kaiser 4060 is split into four areas (Lab, Section 1, Section 2, and Section 3). The details of the areas can be found below in *5. Occupancy Limits, floor space, and traffic flow.*
Kaiser 4060 Lab area uses low-power lasers which the users are trained in using and are not a notable hazard. The Section 1, Section 2, and Section 3, areas are computer workstations which there are no notable hazards.

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/

Our lab has been operational under a COVID-19 exemption for our "Rapid ID of Covid-19 Biomarkers Indicating Viral Infection Using Label-Free Silicon Photonic Sensors" project. Our procedures and protocols were developed in consultation with the Faculty of Applied Science and the VPR Office, and already approved.

Research staff have been consulted on safe procedures and maximum occupancy that will allow for comfortable physical distancing. Brimacombe LST published Common Areas Safety Plan which have been included in the preparation of this plan.
The plans will be distributed electronically by email, by Slack channel ubc-qtw4458.slack.com, and a hardcopy will be available in Kaiser 4060 posted on both doors leading into the lab.

Section #3 – Hazard Elimination or Physical Distancing

The following general practices shall be applied for all UBC buildings and workspaces:

- *Where possible, workers (HQP, research staff, others) are instructed to 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*
- *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*
- *Supervisors must ensure large events/gatherings (> 50 people in a single space) are avoided*
- *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. When working alone, HQP and staff must be aware of working alone procedures and how these have been adapted for COVID-19.*
- *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.*

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

All shared equipment and room sections have an online booking calendar. Equipment and lab rooms are booked one week in advance, and will be discussed in weekly meetings to ensure no conflicts. Calendars will be printed each week and posted on lab door.
• The online calendar is stored on the lab Nextcloud server:
https://qdot-nexus.phas.ubc.ca:25683/apps/calendar/p/5BjH58nGaJ3SLa4j

Coordination is performed via a slack channel: ubc-qtw4458.slack.com. Prior to entry, users will check the slack channel for the previous booked member's sign out message. If the previous member has

signed out, the user may leave a sign in message and proceed to enter the lab space. If not, the user will track down the previous member via slack, email, or phone contact and coordinate a safe time of entry with no overlap. Upon leaving, the user will leave a message in the slack channel informing their sign out.

When working alone, users will have a remote buddy that will check-in with them on slack. The buddy must acknowledge on slack that they will be available for remote check-in BEFORE the user enters the facility. Each user will send a message on Slack when they:

1. Enter the Lab space
2. Every 2 hours that they are in the room
3. When they leave the room

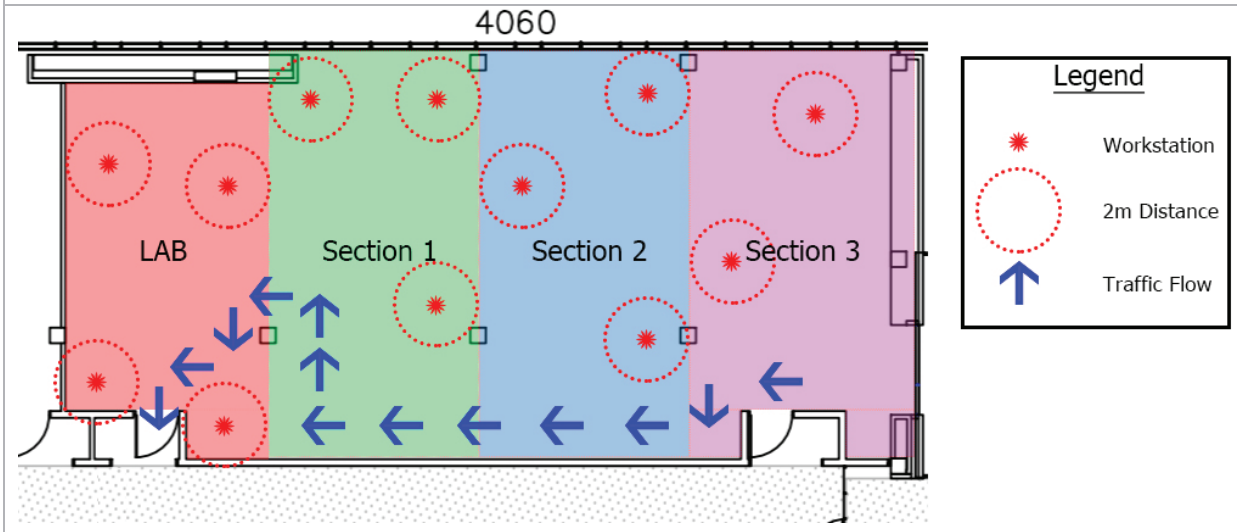
If the remote buddy does not receive a scheduled update via Slack, then they will attempt to reach the user by email and by phone call. If they are unable to reach the user by these secondary methods, then the remote buddy will call campus security and ask security to check in physically (UBC Security Number 604-822-2222).
No work with hazardous materials will be allowed while working alone.
Users are only allowed to create reservations for Kaiser 4060 during the periods of 7am to 6pm in compliance with the reopening regulations. All users must vacate Kaiser 4060 prior to 6pm to allow for cleaning by the custodian staff.

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 apart 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



LAB: Max Occupancy 3

Section 1: Max Occupancy 2 Section 2: Max Occupancy 2 Section 3: Max Occupancy 2 Kaiser 4060 is split into four areas (color coded in the diagram above). Users will have to specify an area when making a booking on the online calendar.

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.
Doorknobs, light switches, faucets will be wiped with alcohol wipes after each use. Computer keyboards and mice will be wiped with alcohol before and after each user uses them. Tools will be wiped with alcohol wipes before and after use. Once cleaned, tools will be stored in appropriate drawers and containers. Hand sanitizers will be available at the entrance of Kaiser 4060 and the exit door located in the Lab section of Kaiser 4060. Alcohol wipes will be available in each of the four areas of Kaiser 4060 (refer to appendix for a diagram of the locations). Restocking of supplies will be delegated by the Project Manager Stephen Lin, to a user who has made a reservation on that day. The planned to be provided by the building staff but in the event in which there is short supply, the Project Manager and PI will look for alternatives. If supplies cannot be obtained, users are not allowed to use Kaiser 4060. All users will wipe down equipment they have used prior to leaving the lab space. For equipment that cannot be wiped, reservations for the equipment will require a 72 hour gap between different users. When existing, users will sign off via an online check list to inform future users on the cleaning they have performed. The submitted results are generated to a google-sheet log in real-time and is shared with the users.
7. Equipment Removal/Sanitation 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)
All lab rooms and key equipment will be booked online. If a piece of equipment will change users, both users will wipe done areas that are commonly touched such as buttons, touchscreens, etc. with alcohol wipes. Any equipment where this is not possible due to sensitivity will be quarantined for 72 hours between different users. Tea kettle will not be allowed to be used in the office. Only 2 personnel may be allowed in each computer workstation area (Section 1, Section 2, and Section 3) at one time, and this will be booked via online calendar.
8. Safety Infrastructure Requests (Partitions, Plexiglass installation)

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.
The total number of personnel will be limited such that plexiglass installation will not be required for safe physical distancing.

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
Each employee will be emailed this APSC Workspace Safety Plan document and asked to reply back once they have completed reading it. A copy of the APSC Workspace Safety Plan will be kept online via our Nextcloud server for users to quickly reference. Each employee will be emailed the Kaiser Building Safety Plan document and asked to reply back once they have completed reading it. Safety protocol notices for the building will be posted at the entrances. As detailed in the Kaiser Building Safety Plan: All Kaiser occupants will be required to successfully complete a mandatory online training module *Prevent COVID-19 Infection in the Workplace.* All faculty, staff, and students are required to bring concerns about the operation of the safety protocols or incidents of non-compliance to the attention of the Administrative Head of Unit or the Local Health and Safety Team (LST) by emailing: safety@ece.ubc.ca.
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 below are excerpts for the common areas from the Kaiser Building Safety Plan: Hallways - Floors will be marked with directional signage and hallways will be kept clear of clutter at all times. Bathrooms - Waiting locations will be marked 2m away from the door, handwashing and sanitizing signs will be posted near and inside the bathroom. Busy light/flags will be used to indicate occupancy of the bathroom. Doors of mid-sized bathrooms will be left open to avoid touching handles. Entrances/Exits - All persons must use the main Main Mall entrance to the Kaiser Building. Entry through other doors are not permitted and card access will be deactivated for all other doors. Exiting may be done via any perimeter door. Stairwells - The main Kaiser stairwell will only be used for occupants who are travelling upward. The rear stairwell (located North) should be used for exiting the building. Directional signs and instructions will be installed to indicate this.
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. See the SRS guidelines for handling potential COVID-19 incidents here: https://srs.ubc.ca/covid-19/health-safety-covid-19/reporting-covid-19-exposure/
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).
Calendar bookings and online check-ins will be monitored by Project Manager Stephen Lin. Kaiser Common Areas: ECE department staff will be on site on a regular basis and will be circulating to ensure no violations occur. Users of Kaiser are also responsible to report violations. Kaiser 4060: If the occupancy of the room will be greater than 1, a user of the lab space will be delegated to monitor the situation by the project manager Stephen Lin. During this time, the delegated user will report any violations or safety concerns to safety@ece.ubc.ca, the project manager Stephen Lin, and the PI Lukas Chrostowski. If the user is to leave the lab, they will hand off the duty of monitoring to another occupant of the lab. They will then notify the project manager and others via the slack channel.

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.

#	Type of PPE	Activity and PPE Use Rationale
2L	Hand Sanitizer	For washing hands in lab area and office
5	Disinfectant Wipes	Wiping down equipment and high contact surfaces

- *If applicable list any other protective controls such as access to showers/laundering facilities*
- *Discuss how you will safely dispose of soiled PPE*

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 September 24, 2020
Name (Manager or Supervisor)
Title Professor

Shared users:

Date 2020 Sep 25
Name (Manager or Supervisor) Karen Cheung
Title Professor

Date _____

Name (Manager or Supervisor) _____

Title _____

Department/School Head/Director Approval

_____ _____

Name, Title Date

Signature

X _____

Appendix

Please attach any maps, pictures, departmental policies or risk assessments applicable UBC Guidance documents, where necessary, and other regulatory requirements referred to in document.

APSC specifically requests photographs of your current lab layout, as well as your proposed usage layout i.e. where HQP will work, what areas will be closed off, where signage will be placed, etc. If floor plans of your lab/shared workspace is available, please append these as well.

The below floorplan shows the location of hand sanitizer stations, disinfectant wipes, and the camera angle at which the appended images are taken from:

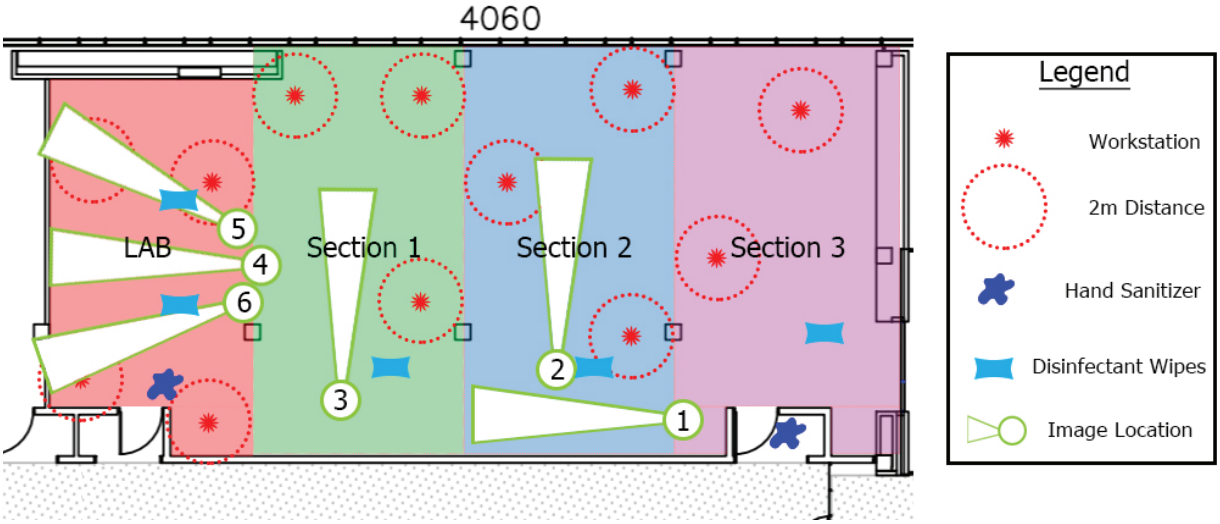


Image 1 - Shared walkway of Kaiser 4060 connecting Sections 1, 2, 3, and the Lab areas.

Image 2 - Section 2: computer workstation area.

Image 3 - Section 1: computer workstation area.

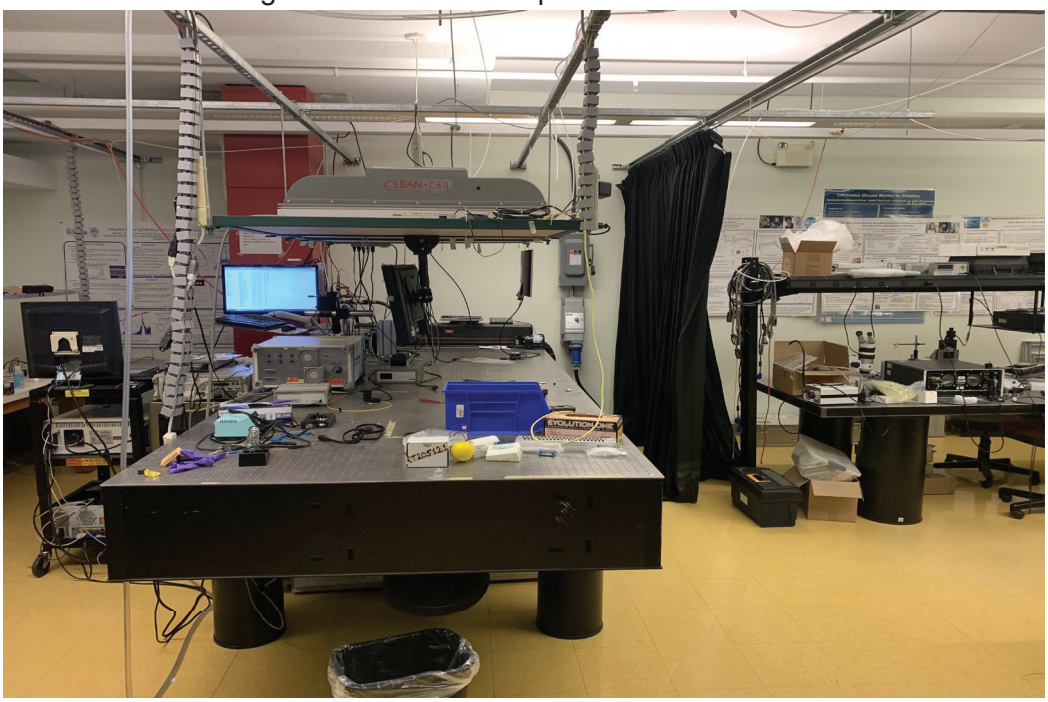


Image 4 - Lab: testbench.

Image 5 - Lab: testbench and storage area.

Image 6 - Lab: testbench and Kaiser 4060 exit door.