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>ELECTRICAL AND COMPUTER ENGINEERING</th>
</tr>
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<tbody>
<tr>
<td>Faculty</td>
<td>APSC</td>
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<tr>
<td>Building(s)</td>
<td>BRIMACOMBE</td>
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<tr>
<td>Lab(s)/workspace(s)</td>
<td>QMI 373/373A/373B</td>
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Introduction to Your Lab

Provide a brief overview of your lab(s) and other used/shared facilities, current size of your group and your general research area (1-2 sentences).

- The Walus Lab at the Electrical and Computer Engineering department (housed in AMPEL’s QMI Room # 373, 373A and 373B) conducts multidisciplinary research involving the development of electronic and biological materials using printable technologies. Experimental work is at the core of the research activities carried out. The diverse Walus group consists of 1 PDF, 4 PHDs, and 1 MASC, of which the current experimental subgroup is 3 (1 postdoc, 2 PhDs) and this does not consider external users of our lab facilities.

- The lab houses instruments which require regular use as part of operational maintenance and enable core lab members and guests from other labs/organizations to conduct their research. Our lab also houses novel materials with short shelf-lives which are time-intensive to formulate and/or manufacture.

- In addition to the QMI workspace, our core lab personnel use facilities in ECE (new locations of Lightning Lab, Machine Shop and Stores due to MacLeod closure) quite regularly for their research. Other than that, they also make use of fabrication and testing facilities in the CFET labs and the cleanroom (both in AMPEL) occasionally.
Section #2 - Risk Assessment

1. Lab/workspace Occupancy (under proposed COVID-19 operations)
   Only 3 research personnel and lab PI will be allowed access during Phase 1.
   Lab PI: KONRAD WALUS
   Research personnel 1: MARITA RODRIGUEZ (Postdoctoral fellow, core member)
   Research personnel 2: ANINDYA LAL ROY (PhD candidate, core member)
   Research personnel 3: CLAIRE PRESTON (MASc student, guest member)

   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.

   “Normal” operations of the lab imply use of lab facilities by core lab members and guest members from other labs. The total count including guests from other labs and lab PI was roughly 14 before research curtailment due to COVID-19. Currently, we are requesting permission for FOUR, TWO of whom will be regulars and TWO occasional.

   Marita is a postdoctoral fellow in our lab and has impending project deadlines to meet and has already faced significant setbacks due to on-campus research curtailment.
   Anindya is a PhD candidate nearing completion of his degree and has deadlines of his own to meet and has faced similar setbacks as above.
   Claire is a guest MASc student who has had her thesis completion held up and will be using a critical piece of equipment occasionally (up to 4 times a week, 15 min runs) for her research.

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)

   - Our lab houses acids/bases/oxidisers and flammable chemicals and they have their appropriate cabinets.
   - Our lab also uses compressed gases like nitrogen, oxygen, compressed air and carbon dioxide and they are all securely fastened to the wall-mounted gas cylinder racks.
   - Our lab also houses BSL 2 materials which are securely stored in environmentally controlled units.
   - Our lab also houses a few heavy pieces of equipment but they are all either bolted down or locked to prevent motion.

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 return to research plan was collaboratively developed by the HQP who will be working within our lab during the research restart and by the lab PI. This plan was produced based on
COVID-19 Safety Plan Template

recommendations and guidelines given to us by our local (AMPEL/QMI) Joint Occupational Health and Safety Committee member, Gary Lockhart, along with our local safety team (LST). This plan adheres to, and in many ways, echoes the return to work plans established for our building by these safety personnel. At all times while working in the lab, we will continue to adhere to all health and safety guidelines, as outlined by safety and risk services.

- As per instructions detailed in this application, our final plans will be posted to UBC’s COVID-19 Safety Plan website, as well as an announcement of plan availability and link to this final plan will be added to the main root site of the ECE departmental website. Our plan will be directly distributed to each of our lab members (including members not involved in Phase 1 return) and will also be available in hardcopy directly outside our lab space.

### Section #3 – Hazard Elimination or Physical Distancing

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

- Where possible, workers (HQPs, 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

- We will implement a remote buddy system whereby any of the **TWO** core lab members working alone will notify the other member and the lab PI when starting and ending their work. In addition, they will update their status in the lab to the remote buddies every hour for
longer durations of work. Any guest member will be allowed to work only in the presence of at least ONE of the core lab members.

- Both sign in/out sheets and FOB system with tracking will be used for monitoring personnel entry/exit from the lab.
- Although our lab has certain instruments that are also used by guest members, such usage will not be permitted during Phase 1. The only exception to this is the guest MASc student listed above who will be permitted to work in the presence of at least ONE of the core lab members.
- The lab manager (Anindya Lal Roy) will be there throughout during normal working hours of Phase 1 in order to effectively monitor the implementation of ALL necessary measures.

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

- Entry and exit routes will be marked using directional markers on the floor such that they do not overlap.
- The core lab members who will be given access during Phase 1 work in separate rooms and with completely non-overlapping domains (chemicals, processes and equipment). Any common equipment will be used after mutual consensus.
QMI 373 floor plan

<table>
<thead>
<tr>
<th>Shelves</th>
<th>Commercial printing unit</th>
<th>Shelves</th>
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<tbody>
<tr>
<td>Desk with instruments (cabinets below)</td>
<td></td>
<td>Desk with new in-house developed electronic material printer and peripheral systems (cabinets below)</td>
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</table>

QMI 373A floor plan

QMI 373B (BSL 2 room) floor plan is similar to 373A with larger floor space and we can accommodate **TWO** people as shown in 373A. MARITA primarily works in 373B and ANINDYA primarily works in 373A so there is adequate physical distancing by default.

**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.

- All contact points to be sanitized by lab manager **ONCE** at the beginning and end of each work day. This includes 70% ethanol-based spray combined with paper towel to wipe shared surfaces, tools, light switches, cabinet handles, door knobs etc.
- All equipment to be handled **ONLY** if the user is wearing proper PPE (gloves are **MANDATORY**). Masks advisable when more than one person is in the room.
- Communal equipment sanitization is the **RESPONSIBILITY OF THE INDIVIDUAL USER** (ethanol-based spray or disinfectant wipes, as applicable) and is to be **STRICTLY FOLLOWED** before and after use (instructions to be printed and placed alongside all equipment).
- Essential supplies will be provided through the building management and will be distributed to individual lab members for their personal storage and use.
- Dry lab spaces such as 373A will be equipped with hand sanitizers and all spaces will be provided with disinfectant wipes.
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- Individual lab members will manage their own generated waste and will comply with the building waste disposal protocol as well as specific hazardous waste disposal protocols.

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)

- Shared equipment in QMI 373 between Marita and Anindya include the oven, the vacuum dessicator, the fume hood and the chemicals cabinet(s). Each of these will be sanitized after use by the individual using either 70% ethanol-based spray or disinfectant wipes (as applicable).
- Shared equipment in QMI 373 between Marita, Anindya and Claire includes the plasma chamber and will be sanitized after use as described above.

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.

- None required as of now due to adequate physical distancing afforded by the lab space itself.

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

- Detailed discussions have been conducted with the TWO lab members scheduled to return to the lab for Phase 1. Both of them are well aware of the safety protocols and have helped to draft the reopening plan for the lab.
- The TWO members returning to the lab for Phase 1 will submit a copy of their online training to the PI and also keep a copy for their records.

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.

- Colored markers (floor decals) showing direction of movement will be used to guide lab users.

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.


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).
Anindya Lal Roy will help to monitor rooms 373 and 373A.
Marita Rodriguez will help to monitor room 373B.
Since there are just two lab members, each will keep the other accountable regarding PPE usage, sanitization and all other safety measures.
Weekly updates to be provided to the PI for clarification of doubts and any changes in protocol implementation until Phase 1 is over.

Section #6 – Personal Protective Equipment (PPE)

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

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<tr>
<th>#</th>
<th>Type of PPE</th>
<th>Activity and PPE Use Rationale</th>
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<tbody>
<tr>
<td>1</td>
<td>Nitrile gloves</td>
<td>Generic chemical handling</td>
</tr>
<tr>
<td>2</td>
<td>Non-medical face masks</td>
<td>Chemical processing and asymptomatic carriers</td>
</tr>
<tr>
<td>3</td>
<td>Hand sanitizer</td>
<td>Mostly for dry rooms (373A)</td>
</tr>
<tr>
<td>4</td>
<td>Disinfectant wipes</td>
<td>Common contact point and equipment wipe down</td>
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Soiled PPE will include used gloves, masks and wipes and will be disposed of according to building protocol. General protocol is to dispose of them in the black bins provided in each lab but any modifications to this as recommended by building management will be strictly followed.

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: 6/11/2020
Name (Manager or Supervisor): Dr. Konrad Walus
Title: Professor

Signed
COVID-19 Safety Plan Template

Department/School Head/Director Approval

John D Madden, AMPEL Director
Name, Title

Signed

12 June 2020
Date

Name, Title

Date

Name, Title

Date

Signature

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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.