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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</thead>
<tbody>
<tr>
<td>Faculty</td>
<td>Applied Science</td>
</tr>
<tr>
<td>Building(s)</td>
<td>Fred Kaiser Building</td>
</tr>
<tr>
<td>Lab(s)/workspace(s)</td>
<td>Kaiser 1146</td>
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</tbody>
</table>

Introduction to Your Lab

Kaiser 1146: Micromachining and metrology laboratory. The facilities of the laboratory include 2 micro milling machines, 1 coordinate measurement machine, 2 optical microscopes, and 1 surface roughness tester. The laboratory has a single room, with the layout shown in Figure 1. The laboratory provides facilities to perform micro milling experiments, measure part and cutting tool geometry, and measure surface profile. The laboratory has 2 desks for 2 students to work. Other lab members come to use the facilities if needed.
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.

There will be 2 students working in the laboratory at the same time. The students will come to the laboratory only when they need to conduct experiments. One student will perform experiment, and the other student will work with a computer at a desk at least 2 meters away. This is based on the safety rule that another person has to be present for potential emergency assistance when one person is working on machines.

![Image of laboratory layout]

*Figure 1 Kaiser 1146 Layout*

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.

I have explained the safety rules to all employees in my laboratory through online meetings. I have explained that any worker who has concerns about returning to the laboratory can request an exemption to the supervisor. They will work from home unless they have scheduled experimental activities.
COVID-19 Safety Plan Template

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)

The lab has industry standard rotating machineries which have covers to protect the users. It is a standard rule to use safety glasses and no-one is allowed to use any machine without the presence of at least a second person in the room for emergency assistance while keeping at least 2 m distance. There is no hazardous chemical in the lab.

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.

The safety officer is Ph.D. student [redacted], who will stay in the laboratory when another student needs to perform experiment.

[redacted] will apply for the key of the KAISER 1146 as soon as possible. Xiaoliang Jin and [redacted] will apply for a time slot from the department to walk through the lab and complete the safety training. The on-site training will follow the 2 meter physical distancing rule. Then [redacted] will apply for the lab key.

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-safety/

The following signs will be posted on each door and work stations

- Safety posters recommended by UBC such as 2m social distance, cover your cough, hand wash
- Disposable safety masks with virus protection are ordered and will be available in the labs. The students will also be recommended to buy reusable masks for daily use. Face masks are optional, and students will be educated on their limitations.
- Disposable latex gloves are purchased and will be available in the labs.
- Face shields for each individual are purchased and will be available in the labs. They are recommended for use on top of the face mask when another person is nearby for discussions.
- Disinfectant sprays, wipes and hand sanitizing liquids are purchased for each laboratory.
- Each student and staff is requested to buy white, cotton laboratory coat for personal use in the labs. The coat must be taken to home for cleaning.
- Each lab already meets safety requirements set by UBC which are other than COVID 19.
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

Each student who needs to conduct an experiment will notify the safety officer ( ) and the PI (Xiaoliang Jin) to reserve a time slot in the laboratory. The nature of the experiment, the equipment and instruments, and the period of experiments will be specified. The student and the safety officer will come to the laboratory at the reserved time. Each instrument will be cleaned with a sanitization spray and wiped before and after their use. The activities will be logged at the designated space in the laboratory. The safety officer will check the safety preparations before each experiment, and will also inspect the cleaning of the station after the experiments are finished. Sign-in and sign-out sheets will be posted behind each door to record the activities in the laboratory. Without prior permission and schedule, no other person will be allowed to the labs by the designated safety officers. Only one student can conduct an experiment on a given day (no shift work).

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 meter radius circle around stationary workspaces/benches/instruments and common areas or equivalent approach to social distancing; and
3) Illustrate one-way directional traffic flows

Kaiser 1146 has one door. The layout of the lab room is shown in Figure 1. The maximum occupancy for the lab room is 2. The details of traffic flow control is described below: one person (A) will sit at the desk between the commercial micro milling machine and coordinate measurement machine, and the other person (B) will work on the machine at least 2 meters away. When A needs to exit the laboratory, he/she will verbally communicate with B if there will be close contact on the way out, so B will pause the experiment and move to the end of the lab room or step out. B will resume to the work location after A is back to the desk.
## 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.

Each instrument will be cleaned with a sanitization spray and wiped before and after their use. The workers will wash their hands in the nearby bathroom. We also purchased hand sanitizers, wipes and disinfectant sprays for the laboratory. Students will complete daily cleaning checklist as follows: The equipment and the surfaces in the working area are cleaned and sanitized by the users; The door handle is cleaned; The used PPE are discarded according to the waste disposal directives of the laboratory.

### 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)

- There is no coffee maker or other kitchen item in the lab room.
- Instruments and tools will be stored in the tool cabinets of the lab room.
- Each instrument has a UBC label on it. They will be sanitized before and after each use.

### 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.

## 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.

PI, safety officers and all students will complete the Preventing COVID-19 Infection in the Workplace online training and orientation to our specific safety plan.

There will be UBC approved announcements and signs posted in the labs. The safety precautions, rules and actions to be taken will be periodically announced to all members during our weekly, on-line meetings and will also be distributed by e-mail memos. Workers who are experiencing "flu like" symptoms should remain home. This will be emphasized to all members through on-line meetings.
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.

There will be 2 students in the laboratory at the same time, and the laboratory has a single lab room. The 2 students will verbally communicate to avoid traffic issues as explained in Section 5.

The limitations of non-medical masks will be notified to all the laboratory members in online weekly meetings. Signs with this information will be printed on June 6 and available in the Mech office. The signs will be put at the entrance door of Kaiser 1146.

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.

Emergency procedures for COVID 19 or otherwise will be posted on the lab door.


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).

Students have the right and responsibility to refuse unsafe work. Students who are concerned about workplace safety should contact their supervisor, their Local Safety Team, the Joint Occupational Health and Safety Committee, the Department Head, or the Head’s designate.

The safety officer will report to the PI every week and discuss possible update on the plan if needed. The employee can raise safety concerns to the supervisor through weekly online meeting every Friday.

Section #6 – Personal Protective Equipment (PPE)

13. Personal Protective Equipment & Cleaning Supplies
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>
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<tbody>
<tr>
<td>1</td>
<td>Disposable face masks</td>
<td>Precaution to avoid receiving and transmitting COVID 19 from mouth and nose. (Purchased already)</td>
</tr>
<tr>
<td>2</td>
<td>Disposable latex gloves</td>
<td>To avoid hand contact with surfaces used by others. (Purchased already)</td>
</tr>
<tr>
<td>3</td>
<td>Disinfected sprays</td>
<td>To sanitize surfaces used by individuals. (Purchased already)</td>
</tr>
<tr>
<td>4</td>
<td>Sanitizing wet wipes</td>
<td>To clean hands. (Purchased already)</td>
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<tr>
<td>5</td>
<td>Face shields</td>
<td>To protect the face and eyes against COVID 19 virus (Purchased already for each student/staff in the laboratories)</td>
</tr>
<tr>
<td>6</td>
<td>Safety glasses</td>
<td>To protect the eyes from mechanical equipment (already in place).</td>
</tr>
</tbody>
</table>

Masks, gloves, face shields are not required, but are available at the occupant’s choice.
Information on the limitations of non-medical masks has been provided to students, and will be emphasized in weekly on-line meetings.

**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 17, 2020

**Name (Manager or Supervisor)**  
Xiaoliang Jin

**Title**  
Assistant Professor

**Department/School Head/Director Approval**

Steve Feng, Head of Department of Mechanical Engineering

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.