COVID-19 Workspace Safety Plan – Lab Specific

Use of this template: All light italicized grey font are instructional and must be removed before final copy is approved.

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>Materials Engineering</th>
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<tbody>
<tr>
<td>Faculty</td>
<td>Applied Science</td>
</tr>
<tr>
<td>Building(s)</td>
<td>Frank Forward</td>
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<tr>
<td>Lab(s)/workspace(s)</td>
<td>119</td>
</tr>
</tbody>
</table>

Introduction to Your Lab

The facility in the Frank Forward Building is used to support the research groups of Professors Poole, Poursartip, Maijer and Sinclair and their work on thermal processing and mechanical properties of engineering materials. These groups have approximately 30 graduate students, postdoctoral fellows and research engineers. The laboratory contains 4 servo-hydraulic test frames, 2 screw driven universal test machines, 2 fatigue testing machines, a rolling mill, furnaces for heat treatment of metals and a small polishing facility for sample preparation.

Section #2 - Risk Assessment

1. Lab/workspace Occupancy (under proposed COVID-19 operations)

Frank Forward 119 – 3 people maximum
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
Frank Forward 119 – Normal operations could have up to 10 people in the lab

REQUESTED BACK to WORK
Frank Forward 119
Zhicheng Wang (Supervisor: D. Maijer) – PhD student, needs access to set up samples in fatigue machine, once test started, it may run for several days with out need for constant attention.

WORKING REMOTELY (Students supervised by D. Maijer)
Meet Upadhyay, Chunying Wei, Daniel Hawker, Thomas Ferguson, Jixiang Xu, Asmita Chakraborty, Pegah Pourabdollah, Arman Khobzi, Eiko Nishimura

NOTE: it has been communicated to each member of group that they are not obliged to return to work if they uncomfortable doing so.

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)

Frank Forward 119 – mechanical pinching in servohydraulic test machine and high temperatures (possible burns) in furnaces
COVID-19-related hazards include:
Close contact (low risk as indicated above)
Close personal interaction (little to none; no equipment or procedures require more than one person to operate)

In no areas is it necessary for anyone to be closer than 2 m from another person. No equipment requires more than one person to operate it.
The closest contact will be people passing by each other only briefly at ≥2 m separation.
Commonly handled equipment and commonly touched surfaces constitute the most significant hazard.

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.
Have consulted with students and staff who use the space, consulted with LST (Bé Wassink, Chair). Based on feedback from these consultations, the plan was updated.

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/

Will post hardcopy of plan on doors to laboratories and on the Department of Materials Engineering website. Workplace health measures will be discussed in weekly online research group meetings.

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

Scheduling will be done by Dr. Zhijun Zhang in consultation with Professors Poursartip, Poole, Maijer and Sinclair. Researchers wishing to access the lab will send an email to him (copy their supervisor) and he will confirm by email the day in which they may work. Personnel may be in the building ONLY on days when they have been scheduled to be there. There is absolutely no admittance to the building outside of the scheduled times. At most, there will be two other researchers (in addition to Dr. Zhang) permitted in the lab at any time.

Specific Access Scheduling: Zhicheng Wang (researcher covered by this application) will need access to the fatigue machine he is working with for 30 – 60 minutes at a time every 3 – 4 days. He will coordinate a window to access the machine with Dr. Zhang.

Working alone procedures
Frank Forward 119: not allowed

Zhijun Zhang will be present in Frank Forward 119 when work is conducted in laboratory

Sign in/out procedure:
Frank Forward 119 – hardcopy sign in/out document for each laboratory

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

The distances between stations are >2m. Researchers will be instructed to keep 2 m separation when moving about the lab; yield to others as they move about. There is one sink (2 m away from fatigue tester. Researchers will be instructed to keep 2 m separation when seeking to access the sink. Note: the aisles are narrow and setting up one-way traffic flows is not practical since people need to be able to access the various parts of the lab.

We have reduced occupancy to less than 33% of the normal occupancy of 10. We will have 3 people maximum occupancy.

Will coordinate ingress and egress between occupants.

**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.

High contact points and instruments requiring sanitization:

- Frank Forward 119
  - Doorknobs
  - Computer keyboard and mouse
  - MTS/INSTRON system interactive panel
  - Screw driver, Wrench or any other tool used
  - Polishing machine front panel and buttons
  - Lab benches
  - Sink area and faucet/taps

Users are required to disinfect the high contact points listed above at the beginning and end of their shift. Cleaning supplies/disinfectants have been secured for the laboratory. Training on disinfecting surfaces to be provide by laboratory manager (Zhijun Zhang) and SRS training course. Disposal of cleaning supplies will be done in accordance with Frank Forward building central plan. Full garbage containers will be brought to the dumpster outside the building.

Researchers instructed not to touch other persons benches/equipment. Equipment/tools obtained from other parts of the lab to be cleaned/disinfected prior to use using supplies available in MTRL stores.

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)

Tools not necessary for experiments will be stored in cabinets. Cleaning of tools/equipment has been covered in Section 6

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.

Not necessary. There is sufficient space for physical distancing in the labs. Note, researchers are not constantly stationed at one spot and need to be able to move around the lab. Barriers then are an impediment and not helpful.

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 employees/students must provide completion certificates to laboratory managers that they have completed “Preventing COVID-19 Infection in the Workplace”.
- We will have a mandatory “return to work” on-line meeting (Zoom) with all users prior to anyone returning to the laboratory where we will cover:
  - Responding to someone who starts to develop symptoms of respiratory illness (call UBC first aid for employees; 911 if it’s serious, then UBC first aid as well); 911 for persons who are not UBC employees (or can call 811 BC Nurses hotline for advice).
  - Review the working alone policy
  - Review the building safety plan and this lab plan.
  - Review how in-lab supervision will work
  - Cleaning common surfaces/equipment
  - Sign-in/sign-out
  - Emergency procedures (as per modifications in the BERP)

- We will have mandatory safety meetings at our weekly group meetings for users
- Users will confirm that cleaning and disinfection has been done upon entry and before leaving the laboratory on the sign out sheet located on the door.
- Any concerns from employees students should be communicated to laboratory supervisor: Professor Warren Poole
- No new staff will be allowed in Phase 1.

### 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.

Post SRS signs in lab as per: https://srs.ubc.ca/covid-19/communications-resources/

Work zones will be demarked in the laboratory by tape placed on floor.

### 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.


An amended BERP is posted on mtrl.ubc.ca > Safety, i.e. http://mtrl.sites.olt.ubc.ca/files/2020/05/May-29-2020-Building-Emergency-Response-Plan-MTRL.pdf. Personnel will be apprised of changes to the revised BERP during safety training as outlined in Section 9. The number of people anticipated back in the Frank Forward building during Phase 1 return will be roughly 30. The great majority will be graduate students and some research staff, such as postdoctoral fellows. The building emergency director, deputy building emergency director and floor wardens will, for the most part not be on site. Rotations of researchers into the building will mean that it is highly unlikely that a suitable number of
people will be in the building consistently, 5 days per week, to be able to enlist alternate floor wardens. Returning researchers will be instructed, as per the modified BERP: "In the event of a fire alarm sounding all occupants are instructed to immediately turn off heat sources, close room doors and evacuate the building when a fire alarm sounds. Use the stairs only. Social distancing is not required inside the building during an evacuation; the key is to evacuate as quickly as safely possible. Once outside the building go to the assembly area (north courtyard). At this point, maintain a separation of 2 m between others. Stay there until permission is given by attending emergency personnel to re-enter the building.

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).

Supervisor, Professor Warren Poole
The laboratory manager, (Zhijun Zhang) will be present at all times to oversee the laboratory and address and safety concerns raised by any user. The laboratory manager will assess compliance with this safety plan using a checklist each day. There will be spot checks by faculty/LST personnel at least weekly to check for compliance as well. Can also reference the weekly safety meeting as a check.

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>Gloves</td>
<td>Frank Forward 119 - Normal procedure when using equipment</td>
<td></td>
</tr>
<tr>
<td>Face masks</td>
<td>Frank Forward 119 - Optional but recommended</td>
<td></td>
</tr>
<tr>
<td>Face shields, face mask, goggles, laboratory coats</td>
<td>Frank Forward 119: normal procedure when using furnaces and polishing equipment</td>
<td></td>
</tr>
</tbody>
</table>

- Laboratory coats to be cleaned by service (through storekeeper in Frank Forward Building, Marlon Blom)

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 15, 2020
Name (Manager or Supervisor)  Daan Maijer
Title  Professor

Department/School Head/Director Approval

__________________________________________  _________________
Name, Title  15 June 2020  Date

Signature.
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.