Buildings Safety Plan for CHBE’s Phase I
Resumption of On-Campus Research

This Safety Plan for Phase 1 Resumption of On-Campus Research within the CHBE Building and CHBE-associated buildings including the Clean Energy Research Centre (CERC), and the Gas-Gun Facility (GGF), is comprised of a set of departmental policies, procedures and guidelines based on a continued need to minimize time spent in the building and to work remotely whenever possible. In addition to defining building operations, it specifies the responsibilities of Faculty Members and research lab staff and students.

The Safety Plan must be read, signed and submitted to the CHBE Department Head by any Faculty Member seeking to return to the CHBE Building to conduct work-related activities. Based on guidance from James Olson, Dean of APSC, it is expected the resumption of activities within CHBE, including research operations, during this first stage will not exceed 30% of our level of operations prior to the temporary limiting of on-campus activities instituted in late March 2020. This document reflects current government and UBC guidelines in response to the pandemic as specified at https://covid19.ubc.ca/.

Department
Chemical and Biological Engineering

Name of Buildings
Chemical and Biological Engineering and Clean Energy Research Centre (CERC)
2360 East Mall

Gas Gun Facility (GGF)
6301 Stadium Rd

CHBE-Associated Research Building:

Gas Gun Facility
Introduction and Description of CHBE Working Space

Research within the UBC Department of Chemical and Biological Engineering (CHBE) is primarily conducted within the Chemical and Biological Engineering Building, the Clean Energy Research Centre (CERC), the UBC Pulp and Paper Centre which houses the BioProducts Institute (PPC/BPI), the UBC Gas Gun Facility (GGF), and temporary laboratory spaces (Rojas, Foster, Cranston) in the Wesbrook building (WES). The CHBE Building, including CERC, houses research laboratories and shared research infrastructure, administrative offices, classrooms and a public atrium, and number of classrooms, meeting rooms and club rooms. The GGF is comprised of an office connected to a small open laboratory space. The safety plan defined here provides policies and guidelines all CHBE-associated personnel must follow as well as specific plans for operations with the main CHBE building, CERC and GGF occupied by CHBE-associated faculty.

The central purpose of this plan is to appropriately limit and manage the number of people in the CHBE building, CERC and GGF, including common areas, workspaces and research labs at all times so as to establish a safe working environment, including maintaining physical distancing guidelines mandated by the Province and UBC. The COVID-19 virus will remain a serious concern for several months, and thus all CHBE-associated personnel approved to enter the CHBE building or CHBE-associated research spaces must adopt habits that allow us to perform work within our building, associated research spaces, laboratories, Stores and workshops while mitigating the risk of acquiring and spreading the virus. This operations plan for safe resumption of on-campus research, comprised of a set of policies and procedures, is based on a continued need to minimize time spent on campus and to work remotely whenever possible. It has been created through leadership provided by the CHBE Local Safety Team (LST), co-chaired by Marlene Chow and Savvas Hatzikiriakos and populated by representatives of all major worker classes within our departmental enterprise (UG and Graduate Students, Lab Managers, Staff, Faculty, APSC representatives, etc.) to ensure that the LST includes their needs and concerns in the safety protocol planning process.

Reference Documents

The following guidance documents and resources UBC Safety & Risk Services COVID-19 Website were used in the development of this plan:

- Prevention, Working Safely on Campus including
  - Personal Protective Equipment
  - Using Non-Medical Masks
  - UBC Employee COVID-10 Guidance document.
  - Risk Assessment and Safe Work Procedure
  - Essential in Person Training and Guidance
- BC CDC website on masks, physical distancing and other practices.
- WorkSafeBC Covid-19 Information
- UBC Building Services provides custodial services ad their procedures are outlined online.
General Policies

The specific safety and operations policies and procedures defined below are intended to supplement the Provincial and university guidance provided in the documents identified above. Together, these policies and procedures are intended to promote safe working conditions through reduced building occupancy, physical distancing, surface cleaning and personal hygiene. No one may enter or work in the CHBE building or its associated research spaces (CERC and GGF) without the express written permission of their immediate supervisor(s), the Department Head (Charles Haynes), and the CERC Director (Xiaotao Bi) as applicable. The CHBE building and associated research spaces (CERC and GGF) will be open to researchers and research support staff from 7:00 AM to 7:00 PM Monday to Friday on a limited-capacity and limited-activity basis, subject to approval of a **Workspace Safety Plan** prepared and submitted by a Principal Investigator that includes a list of authorized personnel, a work-shift schedule to be updated weekly, and clear plans for implementing physical distancing and sanitation in laboratories and other workspaces to enable safe work. It is understood that those granted permission to conduct on-campus research will limit that activity to laboratory tasks that cannot be done elsewhere. Time spent on campus must be kept to a minimum. It is expected that those who do not have permission to work onsite will continue to work remotely.

All personnel approved to conduct research on campus in CHBE-associated space during this limited resumption of research must adhere to the following policies and procedures:

**Policy 1:** Violation of any component of the safety plan stipulated in this document will result in immediate loss of access to the CHBE building or CHBE-associated research spaces (CERC and GGF) until further notice.

**Policy 2:** 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/](https://covid19.ubc.ca/). They are also responsible for following current departmental safety policies procedures, all of which provided at [https://www.chbe.ubc.ca/resources/health-safety-environment/](https://www.chbe.ubc.ca/resources/health-safety-environment/).

**Policy 3:** Prior to returning to campus and (re)establishing any on-campus activities with students or other HQP, faculty must complete, sign and submit to the Department Head this **Building Safety Plan** for CHBE’s Resumption of On-Campus Research. By signing and submitting this contract, CHBE faculty are confirming that they have made all personnel working with them aware of the mandatory policies and procedures stipulated in this **Building Safety Plan**. PIs must also prepare their **Workspace Safety Plan** and receive approval for it by the CHBE Local Safety Team (LST), the Department Head, and where relevant, the Director of CERC. Once approved, the PI must share those plans with all personnel and ensure that all elements of the plans are enforced through the creation and use of a **compliance checklist**.
Policy 4: CHBE and its Faculty and Administration cannot require any individuals, including those under their direct supervision, to enter CHBE, CERC or GGF or to work in conditions in which they feel unsafe.

Policy 5: CHBE and its Faculty and Administration will ensure that all returning personnel be made fully aware of the risks through information made available through https://covid19.ubc.ca/, on the CHBE department website, and by WorkSafeBC.

Policy 6: Each Faculty supervisor will prepare and post a daily logbook in each of their laboratory spaces. Personnel are required to record in the laboratory-specific logbook the following information each time they enter/exit the space:

- Name
- Time they completed the CHBE BC Health Self-Assessment before coming to UBC that day (see Policy 7)
- Arrival and Departure Times

Policy 7: Any individual scheduled to come to CHBE or its associated research spaces (CERC and GGF) must:

- Self-monitor their health status using the CHBE BC Health Self-Assessment. If healthy, record that they self-monitored their health status via the logbook provided by the faculty supervisor (see policy 6)
- Use the online CHBE Check-in on arrival and Check out on departure.

The temperature and any abnormal symptoms of the individual must be assessed prior to arrival. COVID-19 affects different people in different ways. Most infected people will develop mild to moderate illness and recover without hospitalization. Covid-19 coronavirus symptoms according to WHO include:

Common symptoms:
- fever
- dry cough
- tiredness

Less common symptoms include:
- aches and pains
- sore throat
- diarrhea
- conjunctivitis
- headache
- loss of taste or smell
- a rash on skin, or discoloration of fingers or toes

Serious symptoms include:
• difficulty breathing or shortness of breath
• chest pain or pressure
• loss of speech or movement

Anyone experiencing any of these symptoms must use the CHBE BC Health Self-Assessment tool to determine if further testing or medical care is required. No one with symptoms should leave their home. If symptoms develop while at work, individuals are to leave immediately for home to self-isolate, monitor symptoms and/or seek medical attention in accordance with Public Heath directives. Return to work only after the mandated self-quarantine period is complete and all symptoms resolve.

Again, no one with symptoms should leave their home or come onto campus.

Policy 8: Faculty Supervisors will prioritize assignment of work shifts to those personnel for whom access to the lab is most needed to further progress toward their research-thesis based degree or their professional progress. Granting of laboratory access to undergraduate students (including co-op and work-study students) will not be permitted without special and explicit approval from the Department Head and, if relevant, the Director of CERC.

Policy 9: Personal interactions while on campus must maintain a minimum physical distance of 2 m. All persons working in CHBE-associated spaces must always be mindful of this 2 m distancing requirement, and be respectful and patient when interacting with others. In circumstances where physical distancing cannot be maintained, supervisors must put in place other protective measures, including those specified in the SRS UBC Employee COVID-19 Physical Distancing Guidance.

Policy 10: To minimize close physical contact, all hallways, elevators and stairwells will have marked preferred directions for moving through the building (CHBE, CERC). All personnel must adhere to them.

Policy 11: All individuals must minimize time at UBC, and work remotely, ideally from home, whenever possible.

A re-start does not mean a return to normal work. During this Phase 1 resumption of activities, time spent in the building must be kept to a minimum.

Maximum Building Occupancies During Phase I Resumption of Research

The estimated Maximum Normal Occupancies of CHBE, CERC and GGF are provided in the table below, along with the corresponding Phase I Resumption of Research period in which the level of research activity per day cannot exceed 30% of normal activity.
Building

<table>
<thead>
<tr>
<th>Building</th>
<th>Maximum Normal Occupancy</th>
<th>Occupancy Limit in Phase I Resumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHBE including CERC Gas-Gun Facility</td>
<td>500</td>
<td>150</td>
</tr>
<tr>
<td>CHBE including CERC Gas-Gun Facility</td>
<td>15</td>
<td>3</td>
</tr>
</tbody>
</table>

Approvals of Workspace Safety Plans submitted by CHBE PI’s will be based on overall department adherence to these daily occupancy limits.

Building and Floor Wardens

For each CHBE-associated building and research space, space-specific wardens have been assigned with responsibility to monitor daily all activities under their watch to ensure the labs and the personnel are fully compliant with both the approved Workspace Safety Plan for the PI and the Buildings Safety Plan for the unit. Spot checks for compliance will also be performed regularly.

The Building and Floor Wardens are:

<table>
<thead>
<tr>
<th>Warden</th>
<th>Building</th>
<th>Spaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marlene Chow</td>
<td>CHBE and CERC</td>
<td>All</td>
</tr>
<tr>
<td>Samy Larkam</td>
<td>CHBE and CERC</td>
<td>All</td>
</tr>
<tr>
<td>Ken Wong</td>
<td>CHBE</td>
<td>Floors 3 to 6</td>
</tr>
<tr>
<td>Soung-Jae Bong</td>
<td>GGF</td>
<td>All</td>
</tr>
</tbody>
</table>

Procedures

**Transit to and from UBC**

- Any personnel required to be at UBC are strongly recommended to use transportation that minimizes exposure risk: travel by private vehicle, motorbike, bicycle, or walking is recommended.
- Translink options are discouraged, but if used must be in compliance with current City of Vancouver and BC recommendations
- Staggered starts/departures of lab personnel within an assigned laboratory work shift must be employed to minimize close physical contact during arrival/departure periods

**Entering and Exiting CHBE and CERC**

Use of masks is recommended when travelling through common spaces, including stairwells, hallways, etc.

**CHBE Building**

- All CHBE personnel must enter the CHBE Building through the WEST doors to the building atrium, and access floors above using the WEST stairwell or elevator. The use of the elevator is not recommended and is to be avoided unless shipments, equipment or
other heavy loads are to be transported. (The WEST door has the handicapped button, so it is possible to avoid touching the door handle.)

- All CHBE personnel must exit the CHBE Building through the EAST stairwell door or EAST doors of the building atrium.
- APSC Development and BMEG personnel enter and exit the CHBE East Wing through the north door of East Wing and use the north stairwell of the East Wing.

**CERC**

- The CERC wings of CHBE must be accessed from within the CHBE building using the entry doors on the WEST side of the building. Personnel needing entry to the second-floor labs of CERC must use the WEST stairwell or elevator of CHBE and the WEST entry door to CERC. Personnel working within CERC must exit the building through the NORTH stairwell and door of CERC.
- The CERC high head lab must be accessed from its SOUTH entry door which lies adjacent to the WEST entrance of CHBE building.

**GGF**

- The Gas Gun Facility main entry is located on the SOUTH side of the building and secondary exits on the EAST and WEST side of the building. As the number of people in the facility at any time is limited to a maximum of two with staggered arrival/departure times, normal entry and exit will be through the main SOUTH entrance door.
- For security, the EAST and WEST doors will serve their intended purpose as emergency exits.

**Office/Social Space Use**

- Shared student and PDF offices are to be used one person at a time AND only if working from home is not possible.
- In-person group meetings, including lab group meetings, in any space must not be held during this Phase 1 Resumption Period.
- Office desks should be wiped before and after use with disinfectant.
- Use of laptops and tablets while in any CHBE-associated space should be avoided if at all possible. If absolutely required, they must be wiped down with disinfectant upon entering and before exiting the premises.
- All personnel must actively work to minimize personal (close contact) interactions; maintain physical distancing when personal interactions or occupancy of the same space (e.g. hallways) are required.

**Work (Laboratory) Space(s) Use**

The following steps must be completed by each PI prior to resumption of any on-campus research activities under your supervision:

- The required **Annual Safety Audit** of all laboratory space(s) must be completed and recorded by the CHBE/CERC (Samy Larkam) Safety & Technical Coordinator prior to resumption of any access to or resumption of work within your laboratories. All safety
issues recorded in that inspection must be addressed prior to resumption of work. However, completion of the audit does not grant permission to resume work, as approval of the PI’s proposed safety and work plan must also be granted by the Department, CERC Research Centre director(s), and the APSC RRA (Resumption of Research Activities) committee.

- Specific COVID-related risks must be identified (i.e. highly touched surfaces, shared equipment/infrastructure, areas where contact with others could occur) and a plan to mitigate them must be provided by the PI, approved by the Head and research centre Director (if required), and implemented.

- PI’s must prepare and submit for approval by the CHBE Head, and research centre Director (if required), an individual faculty Workspace Safety Plan that clearly and dully defines how research will be safely conducted in their specific laboratory space(s) during this Phase I Resumption Period. That plan, the template for which has been provided, must include
  - Daily schedules for a limited number of personnel (2 per lab at any time within a standard 50 m² space and 1 per lab at any time within smaller lab spaces) entering, using and exiting the laboratory space(s)
  - Procedures for ensuring safe physical distancing at all times
  - Procedures for disinfection of work spaces and commonly touched surfaces (e.g. door handles, equipment, etc.).
  - Personal Protective Equipment (PPE) needs and use. PI’s may order PPE requirements through CHBE Stores.
  - Buddy systems as well as clear chains of command and contact information must be established and enforced to address and report any concerns or incidents
  - Personnel Tracking procedures - Each Faculty supervisor will prepare and post a daily logbook in each of their laboratory spaces in which personnel are required to record the following information each time they are in the space (Name, completion of the BC Health self-assessment protocol before coming to UBC that day, Arrival Time, Departure Time)

- Once the plan is approved, PI’s must provide and review the detailed plan to all personnel under their supervision, and also post the plan at appropriate positions in their laboratory space(s).

- PIs are responsible for making sure that their laboratory and their personnel are fully compliant with this Building Safety Plan and their Workspace Safety Plan at all times. As part of this, PIs should create and use of a compliance checklist for workspace safety.

Safety and Operational Guidelines that should be followed by all personnel include:

1. Always maintain a minimum distance of two metres (2 m) to the next person.
   
   Rules of thumb: keep at least one workspace (bench) between you and others.
2. To facilitate physical distancing and effective contact tracing, **the workday within the lab(s) of the approved PI should be organized into a single shift, beginning at 7:00 am and ending at 7:00 pm, each week day (M-F) during this limited Phase 1 Resumption of Research activities.** Lab personnel assignments to each shift will be set by the faculty supervisor, and reassignment of personnel within the daily work shifts in a given week will not be permitted once those assignments have been made. Though restrictive, this is to facilitate contact tracing should a positive diagnosis occur within a shift. Within each research group, each shift must establish a chain of command, including a lead member assigned to contact both the PI and the department in case of a concern or emergency, and a lead member to oversee routine laboratory duties such as receipt of deliveries and interfacing with personnel from CHBE Stores. Any individual in any CHBE space must actively clean and disinfect surfaces they have touched or accessed, particularly high-touch surfaces (e.g. door handles).

3. Every person attending work on campus in the greater CHBE research space (including CHBE, CERC, GGF) must **always use** the sign-in and sign-out systems described above to ensure that all occupants are known at any given time, and that the total number of occupants meets our overall safe work plan. Records of the sign-in and out will be maintained and monitored by the PI, the Head of the CHBE Department, and where appropriate, the Director of CERC.

4. The maximum number of persons allowed in each room/space at any time will adhere to the policies defined above, will be posted in the room and must not be exceeded.

5. Avoid personal contacts by keeping your required distance (2 m or 6.6 feet) from others and reducing time spent in common areas and movement throughout the buildings. Where possible, complete multiple tasks requiring movement through common areas in one trip.

6. When in use, doors of shared offices should be propped open to minimize frequent touching. Lab doors should be closed to ensure ventilation systems operate correctly. As noted above, all high touch areas within your work space should be cleaned regularly.

7. PPE (Non-medical masks) - Respiratory mask usage is not mandatory but is encouraged in working areas: labs, equipment rooms, group offices. Respiratory mask use is highly recommended when travelling through common areas of each building. Personnel may bring and use their own clean washable cloth mask. Dispose of PPE and all waste responsibly.

   *All waste is to be disposed of in the waste bins at east and west end of the hallways.*

8. PPE (Lab Coats and Safety Glasses) - Lab coats and safety glasses must always be worn at all times in work areas. Lab coats are not to be worn in common areas.

   - Store your personal lab coat away from that of others.
• Lab coat laundry will be made available to all CHBE-associated researchers, regardless of their location within the greater CHBE work space, and should be used regularly. Laundry service use will require you to bag lab coats and label the lab room of use before delivery to CHBE Stores for cleaner service delivery.

9. PPE (Gloves) - Gloves are to be used for laboratory work and are not to be worn in common/office areas unless handling chemicals and/or equipment.

10. Hand Washing - All personnel in all CHBE-associated spaces are required to wash their hands regularly, and to wash hands and sanitize all commonly touched surfaces when entering or leaving any space.

• Hand washing with soap (preferable) or sanitizer use must take place when entering or leaving the building. Regular hand washing in work spaces is expected.
• Additionally, personnel must wash hands and sanitize appropriately any time they move between areas: lab, office, and common areas. Dispose of paper towels in appropriate waste containers.

11. Surface cleaning - Disinfectant must be used to wipe down any frequently touched surfaces pre- and post-use, including:

• All common surfaces including handles and switches.
• All multiuser equipment (pipettes, automated pipettes, balances, gloveboxes…)
• Shared chemical/reagent bottles
• Disinfectant spray bottles (70% ethanol with surfactant and bleach) and paper towels will be provided by the CHBE department in common areas on each floor.
• Dispose of all used cleaning materials in appropriate waste containers. Waste containers in labs will NOT be emptied. At the end of a day, lab users are to empty waste containers into the bins at the end of the hallways. Hazardous waste and glass are to be disposed of following department guidelines.

12. Work routines must be coordinated in both time and space (shift work) and must include:

• Establishing daily work shifts (weekdays only) in accordance with the guidelines provided above
• Coordinating shifts within shared labs (e.g. lab shared with two other research groups) to remain below the lab’s maximum occupancy
• Coordinating work within common lab areas (equipment rooms; shared research spaces) to maintain physical distance.
• Coordinating cleaning/disinfection routines and responsibilities.

13. Multi-user Facilities

*CERC High-Head Lab (HHL)*
• The high head lab (room 145) is an open lab of ~500 m², currently hosting 10 research units. The equipment are well dispersed and clearly defined, which enables the enforcement of 2 m social distance among all researchers working on different units.
• Researchers in HHL are encouraged to wear non-medical masks and stay at their units except entering or exiting the room.
• Researchers must stay at the unit all the time except entering and exiting the room, maintain a greater than 2 m distance from other researchers in the lab and keep at least 2 m away from the common walk-way as marked on the floor.
• Access to the HHL must occur via the SOUTH door adjacent to the WEST entrance of CHBE building. All personnel are asked to wash or sanitize their hands prior to entering the CERC HHL.

PPC High-Head Lab

• The high head lab in the PPC is an open lab currently hosting 2 research units on the NORTH and SOUTH side of the building. The equipment is well dispersed and clearly defined, enabling the enforcement of 2 m social distancing
• Researchers associated with equipment on the SOUTH side of the lab, will access the equipment from the SOUTH door. Researchers associated with equipment on the NORTH side will access the lab from the NORTH door.
• Total occupancy of the PPC HHL must not exceed a maximum of 2 individuals within each side (NORTH and SOUTH) of the space
• All personnel are to wash or sanitize their hands prior to entering and upon exiting the HHL.

14. Multi-user instruments

• Labs/facilities must identify multi-user instruments and develop an approved protocol for their safe shared use as part of their safe-work plan
• Users of multi-use instruments must clean their hands and the instrument before and after each use. Cleaning materials are to be disposed of appropriately.
• Users must wear all required PPE (mask, safety glasses, lab coat) when using multi-use instruments

15. General Lab-Worker Safety

• Lab work-plan schedules should ensure and promote a buddy system (pairs of workers) to improve safety and avoid personnel working alone in a lab

Meals and Breaks

• Meals, snacks and breaks should be enjoyed outdoors, and not in CHBE-associated building spaces, while observing physical distancing guidelines. If the weather does not permit, food is to be consumed either in your office, provided that nobody else is in that
office at the time, or (preferably) on the ground floor of the main CHBE Building in the open atrium area while exercising physical distancing measures.

- Food and food preparation should be minimized. Users are to wipe tables and all other surfaces with disinfectant before use. When common appliances are used (e.g. microwave, coffee maker) they should be wiped down with disinfectant prior to and following use. Note: 6th Floor Lounge is closed.
- Food waste is to be disposed of in waste containers at east and west ends of the hallways available on each floor.
- No drink containers or dishes are to be left in common areas.

**Common Space Use**

There are several common areas within CHBE-associated space that normally can accommodate multiple people and where individuals tend to congregate. For the CHBE main building, these include the two main building entrances (East and West side of CHBE), open areas and the administrative offices on the second floor, the stairwell exits onto the third to sixth floors, and all hallways. All individuals must adhere to a minimum 2 m physical distancing in these areas. These areas are passageways, and should be kept clear. All personnel should pass through the areas without stopping and in the direction the posted signage and arrows on the floor surfaces indicate. Notices are posted to this effect.

Additional general guidelines that must be followed during Use of Common Area are:

- Maintain physical distancing
- Wearing of respiratory masks is highly recommended in common space areas
- Each building entry door, hallway, stairwell and elevator has been marked with signage to establish preferred directions for entering and moving through the buildings. All personnel must adhere to them.
- When moving through the building, masks should be worn if possible, and reusable personal masks that can be washed daily are encouraged
- Hands should be washed before entering common spaces and washed again upon returning to working spaces
- The first-floor atrium in the main CHBE Building will be open, but all meeting rooms will be closed for the duration of the Phase I Resumption of Research.

The following guidelines for safe use of specific common areas must also be followed:

**Hallways**

All hallways are approximately 2 m wide. Given the reduced occupancy of the building, we do not anticipate a lot of traffic. Nevertheless, each hallway has been marked with signage to establish required directions for moving through the buildings. All personnel must adhere to them. In cases where two people are headed in opposing direction, in order to pass safely, one person must step aside to the right into the nearest hallway recess in front of a lab door and wait for oncoming people to pass. Please adhere to the following passing etiquette – persons moving in accordance with building signage have the right of way, and persons going in the wrong
direction must step aside. Priority directions will be marked with signage and taped arrows on the floor. Hallways must be kept clear of clutter at all times. No extraneous items (e.g. crating materials, boxes, furniture) shall be stored in the hallways.

**Elevators**

The CHBE/CERC building has two elevators. Use of the elevators during this Phase I resumption of research period is restricted to those needing to transport materials and those who need special assistance going up and down between floors. Those who can readily manage the stairs should avoid using the elevator as it is a poorly ventilated, confined space. A maximum of two persons are permitted to use an elevator at the same time. Those traveling **up** must use the WEST elevator, while those moving **down** must use the EAST Elevator, so as to maintain proper traffic flow on each floor. Signage outside the elevator indicates maximum elevator capacity is two people during this Stage I Resumption of Research period.

**Stairwells**

The stairs in the CHBE/CERC building do not allow a full 2 m distancing if occupants are passing each other. Personnel using the stairs are not to overtake others in the stairwell.

The stairs located on the WEST end of the CHBE building are therefore to be exclusively used by personnel travelling **up** in the building, and the EAST stairs exclusively used by personnel travelling **down** in the building. Signs and floor markings are provided to notify occupants of this expectation. Please follow the directional signs and instructions.

**Potable Water Sources**

CHBE Administration will coordinate with UBC Building Operations to monitor the quality of water within the CHBE/CERC building. Drinking fountains are not available for use in Phase 1.

**Lunch Rooms**

The lunch rooms in CHBE/CERC will be open on a limited basis. The 6th floor lounge is closed. Maximum occupancy is 2 persons at a time, with use restricted to limited preparation of food and drink items. Please be patient and consider adapting your schedule to avoid overcrowding. All personnel are asked to eat outside whenever possible. If weather does not permit that, personnel must eat in the first-floor atrium while exercising personal distancing in their office, provided that nobody else is in that office at the time. Hands must be washed on entry and again on exiting the lunchroom and the atrium.

Users must disinfect all touched surfaces with the disinfectant provided. Individuals must wash their containers and implements at the sink of the lunchroom, not in the lab or washroom sinks. Personal dishes, cups and utensils that are washed must be dried immediately and not left in the drying rack or anywhere in the room. Soap and paper towels will continue to be provided. Priority must be given to the person exiting in the event that someone is entering when another is leaving.
First Floor Atrium of CHBE/CERC Building

The first-floor atrium will be open to all CHBE-associated personnel for eating lunch and for enjoying breaks. The same cleaning procedures as defined for the lunch rooms should be applied. Occupancy will be limited to 12 by reducing the number of chairs and tables. Occupancy limits will be posted. Users must clean and disinfect all touched surfaces with the provided disinfectant provided before departing the atrium.

Washrooms

Washrooms are a high-risk space. Extra care in hand-washing, not touching your face with unwashed hands and respecting physical distancing measures is crucial. In multi-user washrooms (normally appropriate for 2 users), doors to washrooms will be propped open to minimize the number of high touch surfaces. Only one occupant may use a washroom at a time. Users are expected to announce themselves before entering and only enter if the washroom there is no one present. Single user washrooms lock and have an occupied sign. Further instructions are posted at the entrances of each washroom.

Other Common CHBE Spaces

Main Offices

The CHBE student administration offices will remain closed and locked, with staff working remotely. The administration floor (2nd floor of CHBE) will be accessible only with a UBC card or fob and the offices accessible by key. Limited administration staff will be available during the work week, typically Mon – Fri:

Charles Haynes, Head Rm 261 10:00 am to 4:00 pm
Marlene Chow Rm 253 8:30 am to 4:30 pm

PIs may enter the administration offices to a maximum occupancy of:

Main Office, Rm 218 maximum 2 people
Mail and Photocopy Room, Rm 218B maximum 1 person

Mail will be delivered to the second floor of CHBE by the UBC central mail centre in a contactless manner. Hand sanitization will be performed by Marlene Chow before after collection, and after mail distribution to PI bins. Those who will continue working off-campus will be permitted to come to reception to collect urgent mail items from the mail and photocopy room, subject to approval by Marlene Chow (marlene.chow@ubc.ca) or the Department Head (charles.haynes@ubc.ca). Requests and approvals will be made by email. Brief visits to collect items from offices or labs will also be allowed on the same basis, and with justification and a specific time window. These visits must also be scheduled and approved to make sure maximum occupancy levels are respected for specific workspaces. All coming to the CHBE Building must complete the BC Health Self-Assessment and the online CHBE Check-in on arrival and Check out on departure.
**CHBE Stores**

CHBE Stores daily (M - F) operational hours will be:
- 8:30 am – 12:00 pm
- 1:00 pm – 3:45 pm

Only one person in addition to the Storekeeper is permitted in CHBE Stores at any time. Wait in the hallway to the north of Stores if the storekeeper is serving another individual. All personnel are asked to contact the storekeeper by email or phone whenever possible so as to minimize Stores visits.

- All required research items by CHBE-associated laboratories must be ordered through Stores. Items not ordered through Stores will not be accepted on delivery by Stores.
- Book appointments to pick up orders through the CHBE MRBS system (CWL login to MRBS and select CHBE Stores Pick-Up).
- Items to be picked up will be left outside of the Stores door.
- Stores equipment that is shared such as carts are to be wiped down by users on pick-up and on return. The Gas cylinder carts are stored adjacent to an outside door so no entry into Stores is required.
- Minimize visits to Stores to no more than once a day to pick up multiple items if required.
- Stores equipment that is shared such as carts are to be wiped down by users on pick-up and on return.

Gas cylinders, liquid nitrogen and large packages will be received and delivered at the loading dock. Gas and liquid nitrogen delivery drivers have access to the dock during normal working hours and so no contact delivery is done. Other use of the loading dock will be done in coordination with Marlene Chow (marlene.chow@ubc.ca). Where physical distancing cannot be maintained during delivery, requests for approval must be made in advance by email to Marlene Chow (marlene.chow@ubc.ca). The requests must be justified based on urgency, the measures taken to minimize risks of transmission, along with overall safe moving procedures. Timing must also be specified.

**CHBE Workshop**

The CHBE workshop will be operational with workshop hours: 6:00 am to 1:00 pm, Monday to Friday.

- Staff are available via email and zoom to discuss projects and work.
- All projects are to be submitted through the CHBE Work Order system.
- No in-person consultation with Workshop personnel.
- Repairs are to be coordinated in advance. The lab must be vacant prior to workshop personnel arrival. No other persons are permitted in the lab when workshop personnel are working. Workshop personnel will disinfect surfaces on arrival and departure.
- Items dropped off to the workshop must be clearly labelled (name and work order number), disinfected and left in the designated area defined by the Workshop prior to
work. Workshop personnel will disinfect items before work. Completed items will be disinfect and left in the designated area for pick-up.
• No unauthorized personnel are permitted in the workshop areas.

Respect for UBC Custodial Staff

• All work in labs should occur between 7:00 am and 7:00 pm and lab should be vacated outside those times to allow custodial staff to access and clean building spaces while observing personal distancing rules.
• All CHBE personnel should be respectful of custodial staff working in the building.
• UBC Custodial Services cleans common areas and washrooms twice a day on weekdays, provides soap and paper towels in the washrooms, and refills hand sanitizer stations within the CHBE building, the Clean Energy Research Centre, and the Pulp and Paper Centre.

Responsibilities

Faculty

• Must review, sign and submit to the Department Head this Building Safety Plan for CHBE’s Resumption of On-Campus Research
• Must prepare and submit to the Department Head and the CHBE Safety & Technical Coordinator (safety@chbe.ubc.ca) an Individual Faculty Workspace Safety Plan for Resumption of On-Campus Research specific to your group and all spaces assigned to your group (see instructions above)
• Must ensure all personnel under their supervision have 1) read and understood both the signed Building Safety Plan and the specific policies and procedures defined in the PI’s signed Individual Faculty Workspace Safety Plan and 2) will adhere to all Federal/Provincial regulations and UBC policies
• Must provide contact information (name, email, phone number) for all personnel expected to enter their lab to the department head, senior administrator and CHBE safety officer
• Must post contact info, maximum personnel limits, worker shift schedules and workplace protocols on all lab entrances, and must make those schedules known to all personnel prior to the start of the work week
• Must report all safety incidents to CAIRS within 48 hours of an incident and must collaborate with CHBE administrative staff and safety personnel to complete the full investigative report within 30 days.

Research Lab Staff and Students

• Must read and agree to follow all the Federal/Provincial regulations, as well as all Lab-specific, departmental and UBC policies pertaining to performing research during the Phase I Resumption of On-Campus Research
- Must report concerns to faculty supervisors or the CHBE administrative staff as appropriate in terms of UBC and BC privacy regulations
- Must report any safety incidents to the CHBE Safety Officer within 24 hours and must collaborate to complete the investigation within 30 days.

**Communications Plan**

All building related plans will be communicated with all occupants of the building via the department-wide email lists. A paper copy of this plan and other relevant safety related materials will also be available on the table in the entrance of the CHBE Administrative Offices, Rm 218. This Building Safety Plan is also posted on the building website (www.chbe.ubc.ca) along with links to important documentation listed above. The Department Head, Charles Haynes (charles.haynes@ubc.ca; 604-788-2580), the Department Associate Head, Savvas Hatzikiriakos (savvas.hatzi@ubc.ca; 604-329-5797), the CHBE LST, and the Building and Operations Director, Marlene Chow (marlene.chow@ubc.ca; 778-879-5105), have participated in the development of this plan. All are available to respond to questions about the plan by email or cell-phone, and will quickly respond if an urgent need arises.

**Compliance Monitoring**

The overall monitoring of compliance with the Building Safety Plan will be led by Marlene Chow (Emergency Coordinator and Co-Chair of the CHBE LST (Local Safety Team), Samy Larkam (CHBE Safety Manager) and George Soong (PPC Safety Manager). All will be present in the buildings each work day. In addition, Ken Wong will serve as a warden to the 3rd to 6th floors of the building, where research is primarily conducted.

PIs are responsible for daily monitoring of all activities in their laboratories to ensure the lab and the personnel are fully compliant with both the approved Workspace Safety Plan for the PI and the Buildings Safety Plan for the unit. Spot checks for compliance will also be performed regularly by the safety monitors (Marlene Chow, Samy Larkam, George Soong) and the floor wardens.

**Critical Contacts and Their Contact Information**

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>email</th>
<th>Cell Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charles Haynes</td>
<td>Head, CHBE</td>
<td><a href="mailto:charles.haynes@ubc.ca">charles.haynes@ubc.ca</a></td>
<td>604-788-2580</td>
</tr>
<tr>
<td>Xiaotao (Tony) Bi</td>
<td>Director, CERC</td>
<td><a href="mailto:tony.bi@ubc.ca">tony.bi@ubc.ca</a></td>
<td>778-686-3668</td>
</tr>
<tr>
<td>Savvas Hatzikiriakos</td>
<td>Assoc. Head, CHBE</td>
<td><a href="mailto:savvas.hatzi@ubc.ca">savvas.hatzi@ubc.ca</a></td>
<td>604-329-5797</td>
</tr>
<tr>
<td>Marlene Chow</td>
<td>Director of CHBE Operations</td>
<td><a href="mailto:marlene.chow@ubc.ca">marlene.chow@ubc.ca</a></td>
<td>778-879-5105</td>
</tr>
<tr>
<td>Samy Larkam</td>
<td>Safety Officer, CHBE/CERC</td>
<td><a href="mailto:safety@chbe.ubc.ca">safety@chbe.ubc.ca</a></td>
<td>604-822-3857</td>
</tr>
<tr>
<td>Soung Jae Bong</td>
<td>Building Warden, GGF</td>
<td><a href="mailto:soungjae.bong@ubc.ca">soungjae.bong@ubc.ca</a></td>
<td>778-512-8437</td>
</tr>
</tbody>
</table>
Signature Line for Faculty Acknowledgment

I ________________________________ have read and understand the standard and additional safety precautions being taken during this time in order to reduce our risk from COVID-19, and sign below to verify that I and my research personnel will conduct all on-campus work in compliance with this policy.

FACULTY MEMBER SIGNATURE ________________________________

DATE ________________________________
Appendix 1 - CHBE/CERC Building

Floor plans and defined pedestrian movement paths for CHBE and the associated Clean Energy Research Centre (CERC) are provided on the following pages.

CHBE FIRST FLOOR
CHBE/CERC SECOND FLOOR
Pedestrian traffic flow within the CERC wing of CHBE is defined in the building plan shown below:

- Enter & exit the same way for RED & BLUE
- One way traffic for GREEN & ORANGE (CERC 2nd floor)
- Please use the sensitizer at the entrance before entering
- Please use the wipe to clean up the space before leaving (provided at each lab)
Appendix 2 - Gas Gun Facility

Floor plans and defined pedestrian movement paths are provided below.
Appendix 3 – Revisions

Revision 1:
- Removal of PPC/BPI and Wesbrook details. PI working in those buildings will adhere to those respective Building Safety Plans.
- Increase of CHBE/CERC building capacity to 30%, maximum occupancy of 150.
- Addition of use of MRBS to book access to autoclave, distilled water and de-ionized water.
- Addition of requirement to use the online CHBE BC Health Self-Assessment and to use the online CHBE Check-in on arrival and Check out on departure.
- Modification to Workshop hours
- Permitted research hours, 8:00 am to 6:00 pm, extended to 7:00 am to 7:00 pm Monday to Friday.
- Access to the APSC Development Wing (CHBE East Wing) will be via the North entrance.