

Brimacombe PI Request to Restart Research: Phase I

Complete this form and submit to John Madden (ampel.dir@ubc.ca) cc'ing Gary Lockhart (Gary.Lockhart@ubc.ca) in order to request approval for restarting research. SBQMI members please also copy Andrea Damascelli (andrea.damascelli@ubc.ca) and Pinder Dosanjh (dosanjh@phas.ubc.ca). Please also cc your department head or appropriate departmental contact. Once approved, complete and sign the Access Agreement (sent to you separately) and have it posted on each exterior lab door.

Applications will be accepted immediately. The re-opening date will depend on approval of faculty level restart plans, in addition to the time taken to review applications. Additional forms and approvals may also be required.

Name: _____ Ziliang Ye _____

Department/Institute Department of Physics and Astronomy/Quantum Matter Institute

Email: _____ zlye@phas.ubc.ca _____

Phone#: _____

Standard hours of return: Phase I occupancy 7 AM to 6 PM Monday to Friday.

1. Briefly outline proposed experiments/research that require on-campus access:

Lab 346 used be shared by many users for fabricating 2d materials and heterostructures. But during phase I, we will move the two stacking setups into individual PI's lab so the room usage will be very much reduced - there are only two major instruments left. 1. The glovebox for fabricating air sensitive 2d material heterostructures. 2. atomic force microscope.

Yunhuan Xiao from Ye group will be the only user/developer for the glovebox system. He is working on fabricating twisted BSCCO bilayers for realizing high temperature topological superconductor. During phase I, he needs to integrate the optical microscope based flake stacking setup into the glovebox and stabilize the setup for realizing high quality stacking.

AFM is currently not working well and needs repair. After it is restored, it will be used by three groups. (Ke, Folk, and Ye groups) During phase I, we will limit the access to one person per group and make sure all of them are well-trained experienced users. Folk and Ye group will use it to examine the quality of 2d flakes for building high-quality heterostructures. Ke group plans to use the AFM to measure the surface of various oxide and chalcogenide samples grown by MBE

Copy to be posted on every outside lab door

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2. Building name: Brimacombe

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3. For each room occupied by the PI, indicate the room number, the total number of personnel who usually work in that space, the total number of personnel who need to access the room, and the maximum number who will work in the room at once. Note that UBC is aiming for 1/3 occupancy of spaces during Phase 1, and that there must be space for physical distancing.

Room #	Total # of personnel (usual)	Total # of personnel who need access to the space	Max. # at one time during Phase 1
346	6	4	2

4. Is your lab space shared? Yes

If yes, indicate how you will coordinate with adjacent groups or personnel. For the SEM, 2D materials lab, CRN and similar spaces shared by multiple PIs, please submit one form with the names of all users from multiple groups. For the high head area, please submit one form per research group or service (e.g. Helium), and specify the area and PIs that are involved. You may include part of the high head along with other lab space on one form (e.g. CRN occupies lab space in high head and in the Brimacombe extension). In some cases groups may decide it is easier to submit separate forms for each space they work in. We are flexible in the formats we will accept.

The AFM is shared among multiple research groups. Since there is little overlapped between the AFM and glovebox setups, each individual should be able to work within their two-meter bubble. Coordination will be made through online booking system.

5. Describe how you will ensure physical distancing within your lab.

Lab 346 is a long narrow space with the AFM setup at the end and glovebox located at the entrance of the room. In order to maintain two meter rule, priority will be given to the AFM user. Whenever the AFM user needs to enter or leave the room, the glovebox user has to leave

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the room first. Yunhuan Xiao will be in charge of monitoring compliance of the safety policy regarding the occupancy, distancing, PPE and general safety. Yunhuan Xiao will report to Ziliang Ye or building manager/floor wardens if compliance is observed violated.

6. How will you schedule occupancy of your lab space? Phase I occupancy 7 AM to 6 PM Monday to Friday. *e.g. online sign up, weekly discussion in lab meeting to prepare a schedule together, other?. Ensure that people on the same shift are not in conflict for the same resources in their own lab. Include an example plan with the application. Schedules should be posted on the lab door weekly. **Note:** at any one time, UBC is aiming for **ca. 1/3 occupancy** during Phase 1. If you request after hours access, this should be thoroughly justified here.*

Experimental activities will be planned one week ahead. Work shifts will be signed up in the google calendar and the schedule will be posted on the door.

7. Outline plans to address working alone regulations.

The check-in interval depends on the risk. If low risk, then check-in/out at start and end of day is fine. If there is higher risk involved then more frequent checks are required. If the work is down afterhours, and there needs to be an in-person check, Campus Security is the contact. If working alone during regular hours then someone else in the building can be called to do the in-person check, like a floor warden - Gary Lockhart (604-809-9194).

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

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

If the remote buddy does not receive a scheduled update via Slack, then they will attempt to reach the user by email and by phone call. If they are unable to reach the user by these secondary methods, then the remote buddy will call campus security and ask security to check in physically (UBC Security Number 604-822-2222).

No work with hazardous materials will be allowed while working alone.

8. Identify high-contact points that need to be sanitized (doorknobs, fridge handles, switches, communal keyboards, work surfaces, chairs etc.) and all multi-user instruments and

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equipment in your lab(s), their location, sanitization protocols: this includes items only used by your lab group. The protocols should be posted as a checklist at the entrance for research personnel to complete before and after each shift.

Researchers are required to wear gloves during operation. Following high contact points are required to be sanitized before and after usage. A sanitation check list should be filled for every shift.

- Doorknob
- Drawer handles
- AFM computer keyboard and mouse.

9. Are there any tasks where physical distancing cannot be maintained? Yes

If yes, describe the task, explain why it is important to perform in the coming month, and describe the frequency and duration of tasks. What safety measures will be taken to mitigate risks?

In the glovebox project, there are two scenarios when the two-meter distance cannot be maintained and each of them will only happen once during the project.

1. We need to take off the glovebox window panel in order to put in the optical microscope at one point. The panel will be put back on again afterwards. These panels and microscope are too heavy for Yunhuan Xiao to lift alone, so an extra researcher's assistance is needed. In this case, Yunhuan and the second person will wear full-scale PPE, including mask, face shield, and lab coat. They will hold the panel on the opposite end to maximize the distance. (~1m) The glovebox panel should be sanitized before and after installation. Such installation happens only once in the project.
2. An antechamber needs to be welded to the glovebox. The antechamber is too heavy for Yunhuan to lift alone as well. A technician will be asked for help this job. Again this only happens once in the project and both researchers will wear full-scale PPE when they cannot maintain the two-meter distance.

10. Is equipment in your lab space used by personnel from other labs? No

If yes, explain how you will arrange for other users to access this equipment while maintaining physical distancing. How will this equipment be sanitized between users? List the anticipated users below in section 13.

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11. Will you need to access equipment located in other research labs, or your lab equipment housed in shared equipment rooms in your building? No

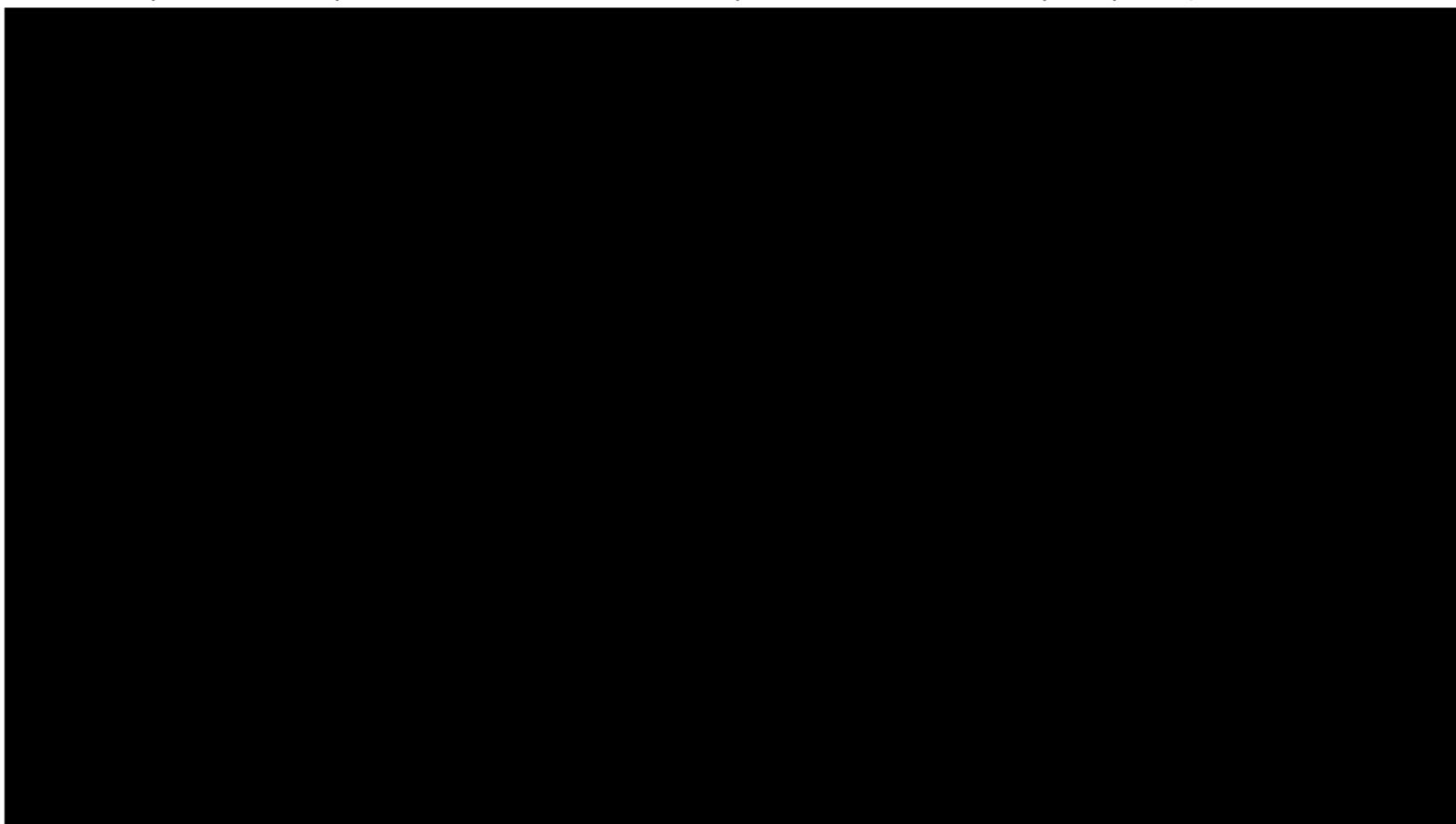
If yes, list the equipment or room numbers and how will this be arranged. How will this equipment be sanitized between users?

12. Will you need to access equipment or services in other buildings? No

If yes, List. e.g. BiF, Chem Stores, Kaiser, Frank Forward, Henning's, ...

13. It is mandatory for Phase 1 that all research personnel have appropriate certified training. Will all personnel from your group accessing the lab be certified prior to having access, including new COVID-19 video training? No

Identify each of the personnel below who will require access to on-campus space (information



14. Explain below how you will prioritize research personnel in your group to access lab space.

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No undergraduate is allowed to access the lab. If the number needs to be further reduced, we will prioritize people based on the time urgency of individual projects.

I agree to abide by the rules and procedures I have described above during UBC's Phase 1 of research resumption. I acknowledge that failure to uphold the commitment confirmed here could result in the loss of research access privileges. *Signatures of additional PIs who share the space should be added.*

Signed (PI1):  Signed

Date: _____ 06/01/2020 _____

AMPEL Approval

John D Madden, AMPEL Director

 Signed

June 2020

Departmental Approval

Colin Gay, Head, Physics and Astronomy

9 June 2020