

Proteomics Building/Institute for Quantitative Biomedicine Research Continuity Plans: Executive Summary

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All faculty with resident laboratories in the Proteomics Building/Institute for Quantitative Biomedicine responded by providing their Research Continuity Plans.

Faculty members, building administrators, and technical support personnel met previously on March 11 to develop COVID-19 contingency plans. This exercise enabled work-at-home for many IQB researchers allowing de-densification of the Proteomics Building, mandated social distancing for those working the wet laboratories and the Core Facilities, and changed the policy for building access, with all doors locked and swipe-card only access 24/7.

COVID-19 Research: Several IQB activities will be critical to keep running to support COVID-19 Research. These include:

1. IQB is establishing a COVID-19 Research Working Group (RWG) under the leadership of Professor Sagar Khare. The RWG will convene regular virtual meetings for Rutgers researchers working on COVID-19 to provide a forum for exchanging ideas and facilitating exchange of reagents, etc. The RWG will also liaise periodically with a similar effort at UCSF. IQB Founding Director, Stephen K. Burley, will be the single point of contact with Professor Andrej Sali at UCSF.
2. RCSB Protein Data Bank, EMDDataResource, and PDB-DEV. These three federally funded structural data-archiving services provide validation, biocuration, and public access to worldwide research results that are directly relevant to COVID-19 research. See for example RCSB PDB's list of [COVID19 Coronavirus Resources](#).
3. CryoEM/ET, BioNMR, and Mass Spectrometry Core Facilities. These Core Facilities, all located on the Ground Floor of the Proteomics Building, provide critical analytical tools that are available to Rutgers and the wider community and will prioritize COVID19-related research.
4. The Khare Lab in collaboration with the RCSB PDB will perform COVID-19 related research, at levels determined by supplemental federal funding decisions.

Summary of Responses

- Define a robust communication network with your group.
 - All IQB laboratories have defined robust mechanisms for communications between their members (email, slack, whatsapp, github, etc)
- Discontinue face-to-face group meetings and reduce laboratory presence to the extent possible; strive to keep all essential lab activities within reasonable or reduced business hours.
 - All IQB laboratories have made needed accommodations to enable and encourage researchers to work remotely from their homes. All group meetings are now virtual (e.g., Webex, Zoom).

- CryoEM/ET Core Facility: Lab presence is temporarily reduced to lab head only, plus vendor installation personnel.
 - BioNMR Core Facility: No new user training is being scheduled. Supporting the user community will be limited and gatherings will be prohibited. All of the NMR instruments can be operated by remote access through the internet.
 - Lee Lab: Members will be present in the lab only when performing essential microscopy experiments. All work using cells is currently halted.
 - Other IQB laboratories with web labs (Khare, Dai, Kulczyk): all onsite wet lab work is currently suspended, including cell culture work.
- Identify 1-2 personnel per lab who are essential to maintain critical research and ensure that they know what to do if operations are interrupted temporarily or closed for a significant period of time. A rotation system may be possible for the larger labs, with no more than one person per lab being present on any given day to maintain critical research or animal care.
 - All Laboratories have identified personnel required to maintain critical research. A listing of these required personnel is being maintained by IQB Associate Director Bernie Cariaga and will be shared with the IQB PIs.
- Organize research activities in order to maintain essential functions and capabilities in the event of a possible emergency mode operation of research laboratories as above.
 - CryoEM/ET Core Facilities will continue the following activities:
 - Ongoing Equipment Installation: A vendor engineer and the facility director will be on-site daily to complete this work. Once the vendor engineer have completed phase 1 of the installation, further work will be suspended until the University resumes normal operations.
 - CryoEM/ET instrument: Facility personnel will replace liquid nitrogen and perform sample exchange once per week. Otherwise, all experiments will be conducted with at-home control by users and staff.
 - Sample preparation: Starting in April, trained facility users can book vitrification sessions with >72h spacing, only one individual permitted in the room.
 - BioNMR maintenance: cryogenics will be ordered and filled every Tuesday by facility managers.
 - Lee Lab: Microscopy research and optical instrument development can be suspended in the event of emergency. instrument control development will be continued remotely.

- Define any necessary processes for shutdown of equipment in your laboratory.
 - CryoEM/ET: If power is maintained in the building, it is ideal for the equipment to remain on because shutdown of vacuum pumps reduce their lifetime.
 - Liquid nitrogen storage dewars must be topped off every two weeks to avoid catastrophic loss of research materials.
 - CryoTEM (Talos Arctica): Samples must be removed from the instrument and (if BSL-2) decontaminated. A trained operator can then smoothly power down the high voltage systems remotely or in-person.
 - CryoSEM (LEO 1525): press the yellow button on the front panel, wait 5 minutes, then press the red button.
 - CryoFIB (Aquilos): unknown
 - CryoCLEM, Vitrobot, EM-GP, ovens, chillers, compressors: no special precautions required.
 - Freezers: In the event of power loss, we will ensure that -80 and -20 freezers in the building are functioning on backup power.
 - BioNMR: As long as power is maintained, NMR instruments will remain in operation.
 - It is absolutely critical that access be maintained for all Proteomics Building and Hill-center computational resources to fulfill the many grant funded research obligations of IQB laboratories.