Academic Research Infrastructure Plan
during COVID-19

This template is for use by academic department chairs/institute directors, working closely with academic managers and, where applicable building managers, to submit a re-opening plan for review and final approval by the Office of the Dean for Research. It is intended to facilitate planning and communication with faculty and researchers regarding operations that have a material impact on research. This Academic Research Infrastructure Plan should be consistent with and augment the information that is detailed in the unit’s Continuity of Operations Plan (COOP). This template is specific to academic units with on-campus laboratory research. It assumes that all work that can be done remotely must continue to be done remotely.

<table>
<thead>
<tr>
<th>Department/Institute</th>
<th>[DEPARTMENT/INSTITUTE]</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Department of Chemistry</td>
</tr>
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<table>
<thead>
<tr>
<th>Chair/Director</th>
<th>[CHAIR/DIRECTOR] Tom Muir/Greg Scholes (as of 7/1/20)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Manager</td>
<td>Janet Gruschow</td>
</tr>
<tr>
<td>Last Revised Date</td>
<td>6/8/20</td>
</tr>
</tbody>
</table>

Dean for Research Approval     | [DATE]                                                          |

**PURPOSE**

This Academic Research Infrastructure Plan will document how the department/institute will operate research core facilities and research-related services during the COVID-19 pandemic. Planned operation levels, from fully operational to completely shut down, will be documented here to facilitate decision-making and communications with PIs and facility directors as research operation are modified. This planning is needed to support research and ensure the health and safety of our community.
While there is ongoing community transmission of COVID-19, departments must prepare for unanticipated situations, such as an individual who tests positive for the virus and must self-isolate without returning to work, and whose close contacts are required to self-quarantine for two weeks. These possibilities require careful planning and readiness to shift from one level of research operations to another. Academic units must plan ways to minimize the impact of disruption to their research programs overall, such as separating research personnel in space and time. PIs have been advised in the Research Lab Operations Plan template that these issues, which apply to their research personnel, also apply to core facilities and research services upon which a laboratory depends.

A copy of the plan uploaded by the academic manager or designee into SHIELD, the research health and safety management system (https://princeton.bioraft.com/), for final review and approval by the Dean for Research. The approved plan should be shared with members of the department or institute who need to be aware of its contents.

Items for consideration in your plan:

- Which personnel can work remotely, and therefore are expected to work remotely?
- Which core facilities/services have Research Lab Operations Plans separate from this document? (E.g., clean room, NMR facility, Imaging and Analysis Center, etc.)
- Which core facilities/services are covered by this Research Infrastructure Plan? (E.g., loading dock, stock room, glass washing facility, machine shop, etc.)
- What resources are a priority to get up and running on campus first, and how long does it take to ramp up these services?
- What spaces within the building will require occupancy or space utilization plans?
- What spaces may be available to facilitate physical distancing for shared/joint office situations (admins, postdocs, grad students, etc.)?
- What policies need to be put in place for shared areas (kitchen, copy room, mail room, etc.)?
- What personal protective equipment or face covering will personnel need to utilize while on-campus?
- How will you maintain a schedule for all department or institute members to know who among the staff should be on site on each day and during which hours?
- How will the operational status and hours of operation for core facilities and services be communicated to researchers now and if changes are made in the future? (Reminder – an individual’s health information is never to be disclosed in any communication.)

A. Research-related Operations

The following information resources and guidelines should be consulted in preparing this plan:

- Description of the Levels of Research Operations (excerpt below, full version online)
- EHS Guidelines for Safe Research During COVID-19 Pandemic
- EHS Building Guidance
- COVID-19: Guidance for Staff Who Must Be on Campus
- Ordering Personal Protective Equipment and Supplies
- Procurement Services Guidance for Resumption of Research
- Guidance on the Use of Face Coverings
- The Right Mask – a Primer
- Guidance for Disinfection of Lab Surfaces
- Information for University Contractors and Vendors

<table>
<thead>
<tr>
<th>Level 1</th>
<th>Normal Operations</th>
<th>Normal research operations resume within prescribed hygiene, health and safety protocols.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 2</td>
<td>Phased Resumption</td>
<td>Department chairs must submit a Research Infrastructure Plan, which must be approved by the Office of the Dean for Research. PIs must submit a Research Lab Operations Plan detailing how each lab will enact strict social distancing and comply with Environmental Health and Safety (EHS)-prescribed density and hygiene metrics and practices. Use of PPE and cleaning protocols are strictly enforced. All work that can be done remotely continues to be done remotely. Changes in University-wide requirements (e.g., area per researcher) can result in adjustments to department-level or laboratory-level plans.</td>
</tr>
<tr>
<td>Level 3</td>
<td>Essential Operations (current level)</td>
<td>Only a limited number of essential research and COVID-19 projects is allowed. Authorized researchers can also access laboratories for maintenance operations. Access to laboratories requires authorization by the Office of the Dean for Research following submission of a Research Lab Operations Plan by the Principal Investigator (PI).</td>
</tr>
<tr>
<td>Level 4</td>
<td>Operations Suspended</td>
<td>All experiments are stopped, except for COVID-19 research specifically approved by the Office of the Dean for Research. Only designated critical staff are granted access to buildings.</td>
</tr>
</tbody>
</table>

List the department/institute functions below with details about the operational status at different levels of research operations (on-campus vs. remote, how many personnel are on site, hours of operation, etc.). The table below should be customized as needed by each unit; examples of staff and services are listed in the first column; sample entries in the row listed for academic manager are shown as an example only.

<table>
<thead>
<tr>
<th></th>
<th>Research Level 2</th>
<th>Research Level 3</th>
<th>Research Level 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Manager</td>
<td>On campus 2-3 days/week to support research resumption. May be reduced to 1 day once research going smoothly.</td>
<td>On campus for several hours 1 day/week to sort mail and do building walkthroughs.</td>
<td>Remote 5/week</td>
</tr>
</tbody>
</table>

Department of Chemistry
Research Infrastructure Plan (COVID-19)
Last revised 6/8/20
<table>
<thead>
<tr>
<th>Position</th>
<th>Description</th>
<th>Department of Chemistry Research Infrastructure Plan (COVID-19) Last revised 6/8/20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admin Assistant/Admin Office Coordinator</td>
<td>Admin Office Coord., remote 4.5 days/week. 1-2 hours/week to sort mail.</td>
<td>Admin Office Coord. remote 5 days/week.</td>
</tr>
<tr>
<td>Admin Services Mgr.</td>
<td>Remote 5 days/week, except occasional need to orient new postdocs.</td>
<td>Remote 5 days/week.</td>
</tr>
<tr>
<td>Purchasing Staff Purchasing coordinator</td>
<td>Purchasing coord. WFH 5 days; in Frick to pick up core facility sheets 1x/mo.</td>
<td>Remote 5 days/week.</td>
</tr>
<tr>
<td>Business/Grants Staff Business mgr. in Frick 1x/week; WFH 4 days/week. Grants mgr, remote 5 days/week. Financial admin., remote 5 days/week.</td>
<td>Business mgr and Grants mgr in Frick 1 day/week each to back up deliveries. Financial admin., remote 5 days/week.</td>
<td>Business and grants managers, remote 5 days/week. Financial Administrator, remote 5 days/week.</td>
</tr>
<tr>
<td>Faculty Assistants</td>
<td>Remote 5 days/week.</td>
<td>Remote 5 days/week.</td>
</tr>
<tr>
<td>Research Lab Staff (list job titles)</td>
<td>Any research lab staff will be on essential personnel lists for PI labs or core facilities, as needed.</td>
<td>Any research lab staff will be on essential personnel lists for PI labs or core facilities, as needed.</td>
</tr>
<tr>
<td>Technical Staff (list job titles)</td>
<td>Any technical staff will be on essential personnel lists for PI labs or core facilities, as needed.</td>
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</tr>
<tr>
<td>Loading Dock/Delivery Services Loading Dock for Frick located at Jadwin Physics dock. Dependent on physics’ schedule. Stockroom (see attached floor plan in addendum)</td>
<td>Delivery/Stockroom in Frick 5 days/week to support research. Self-serve, open-shelf stockroom operation.</td>
<td>Delivery/Stockroom remote 5 days/week, if there are no deliveries to Frick. Self-serve, open-shelf stockroom operation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>See core facilities plans.</td>
</tr>
<tr>
<td><strong>Molecule Screening</strong> (Liquid Nitrogen Filling Station (Jadwin/Frick Tunnel))</td>
<td>Available to researchers who require product.</td>
<td>Available to Covid and essential researchers, as needed.</td>
</tr>
<tr>
<td>Building Operations Facilities Manager Facilities Coordinator</td>
<td>Facilities Mgr 2x/week during ramp-up; as needed after. Facilities coord. 2x/week during research ramp up; as needed after.</td>
<td>Facilities Mgr 1x/week to do research lab walkthroughs. Remote 4 days/week. Facilities coord. remote 5 days/week.</td>
</tr>
<tr>
<td><strong>IT Operations</strong></td>
<td>Sr. IT Mgr. remote 5 days/week, except as needed for remote teaching assistance or if there is a hardware issue with research or core facility computers.</td>
<td>Sr. IT Mgr. remote 5 days/week, except when needed to assist faculty with remote teaching.</td>
</tr>
<tr>
<td><strong>Teaching Lab Staff</strong> (2 lab preparators and one lab demonstrator)</td>
<td>Will depend on how faculty teach Gen Chem and Orgo and if there is lab set-up. Could be needed to set up experiments for videotaping, for instance.</td>
<td>Remote 5 days/week, unless there are lab demos required.</td>
</tr>
<tr>
<td><strong>Student Services Staff</strong> (Undergrad/Grad Administrator)</td>
<td>Remote 5 days/week.</td>
<td>Remote 5 days/week.</td>
</tr>
<tr>
<td><strong>Communications Staff</strong> (1 Communications Specialist and .5 Web and Media Specialist)</td>
<td>Remote 5 days/week except to take photos as needed (occasional).</td>
<td>Remote 5 days/week except to take photos as needed (occasional).</td>
</tr>
<tr>
<td><strong>Shared areas</strong> (kitchenettes, copy room, mail room, vending machine area, etc.)</td>
<td>Mail room/copy room will be used occasionally by lab researchers to pick up mail - 4 people max. with face masks and at least 6 ft.</td>
<td>Mail room/copy room used to sort mail one day/week.</td>
</tr>
</tbody>
</table>
Please describe any exceptions or additional comments/notes below:

Floor plans will be appended to this document for common areas.

Co-dependencies: Note that Building Services and Special Facilities will need to provide limited services in Frick during Levels 3 and 4 due to approved Covid research in several labs. For ramping up to Level 2, services will need to increase to ensure bathrooms and common areas are cleaned and sanitized and that appropriate facilities support exists to support research resumption. Central controls for HVAC will need to be notified to ensure air handling resumes to research levels.

How will the academic unit maintain and disseminate up-to-date information on the operational status of the facilities and research services?

Departmental email lists will be deployed (all dept., faculty, researcher, grad student, etc., distribution lists) to communicate all new developments in research schedules, social distancing and hygiene rules, building opening/closing, etc. Building circulation and occupancy signs will be posted where needed. PIs will disseminate their lab rules via email lists, Slack channels, etc., as noted on RLOP plans. Important announcements (e.g. covid outbreak, building closures, etc.) will be posted on the departmental website, posted on doors, when necessary, and distributed via departmental email.

Core facilities will send opening/closing messages and standard operating procedures to their own user lists, including to those in other departments and users outside the University (will be detailed in Core Facility RLOPs).

B. Resumption of Research Activities

In this section, detail how the department/institute will enact strict social distancing requirements and comply with EHS-prescribed density and hygiene metrics and practices within core facilities, research services, and areas that are commonly utilized. All work that can be done remotely must continue to be done remotely. When devising the plans, consider the common spaces that people utilize when taking a break from work.
**Occupancy Plans:** Describe how staffing and scheduling will be organized to meet the occupancy metrics. A variety of models can be considered such as daily shifts, rotations of days on and off, or cohorts. List the parameters for the number of people in particular rooms at any one time. If a staffing rotation is necessary, describe the nature of the rotation and how the schedule will be maintained.

[DESCRIBE THE OCCUPANY PLAN, INCLUDING TABLES OR SCHEDULES AS NEEDED]

All staffing and scheduling for PI research labs and core facilities will be described in individual RLOP plans. Admin areas will not be occupied under phases 2, 3, 4, except for those who are required to support research operations in phases 2 and 3, as described above. Those offices are single person, only.

**Frick common areas** (see floor plans attached in appendix). Occupancy for any common spaces will be posted outside the room and will follow social distancing (6 ft) and space allocation guidelines (160 sf per person).

**Mailroom** - Occupancy 4 people will be posted on door and inside space. Administrative Office Coordinator will occupy mailroom 1 day per week for ~1 hour to sort mail into mailboxes. Researchers who are in Frick for their work shift may pick up mail observing social distancing and occupancy limit in mailroom. Sanitizing spray bottle and wipes will be located on mailroom counter for cleaning surfaces users have touched, as well as hand sanitizer. Copy machines will have plastic wrap available to cover keys for each user or sanitizing wipes.

**Atrium and B level public restrooms (1 men/1women with multiple stalls, each floor):** These will be cleaned by Building staff, as usual. Facilities will mark off stalls and sinks that cannot be used to ensure social distancing. Occupancy will be marked on door – a line will form outside door with markings 6 ft apart for waiting. Signs will encourage handwashing and paper towels are available to open doors.

**Frick Atrium:** Only 10 people will be allowed in the atrium at any one time, as determined by current guidance. This will be posted in the space. All furniture will be removed by Facilities other than 10 cafe tables and one chair at each table, six feet apart. Red lounge chairs will be moved against the walls, six feet apart. These will be used by researchers for meals and breaks. Hand sanitizer, cleaning solution spray and paper towels will be available in the space.

**Frick Patio:** Only 10-12 tables and 10-12 chairs will be allowed on the patio to ensure a safe distance between those researchers who are eating meals outside. Hand sanitizer will be available at the entrance.

**Conference Rooms (181, etc.):** Frick has six identical conference rooms, two on each floor above the atrium level (1, 2 and 3). These will be available to wait for research instruments or experiments, or for meals. Three people will be allowed in each room at any one time. Chairs will be taped off to ensure proper social distance. Hand sanitizer, cleaning spray and paper towels will be available to wipe down surfaces. Occupancy will be marked on doors.

**Hall Landing Seating Areas** (floors 1, 2, 3 - 2 on each floor) Chairs will be removed to allow for two seating areas on each landing, with two chairs each, 6 feet apart.

**Bridge seating areas** (floors 1, 2, 3 - 2 on each floor at each end of building). Chairs will be removed to allow for two seating areas with two chairs each, at least 6 ft apart.
Given the number of seating areas in Frick that can be utilized, as described above, researchers should be able to find adequate space for meals or waiting for research/instruments. During ramp up to Level 2, the number of researchers will be reduced, possibly to 50%, to accommodate EHS prescribed density and social distancing in labs, so available seating space should be fine.

**Vending machine area**: 1 person at a time may enter. Hand sanitizer and paper towel (to press buttons) will be available. Occupancy will be posted outside vending area.

**Conference rooms** on atrium level (A81 and A57) will be locked.

Admin areas/offices will not be occupied under phases 2, 3, 4, except for those who are required to support research operations in phases 2 and 3, as described above. Those offices are single person, only. All other administrative staff will be working from home.

**Core Facilities**: Core facilities located on the B-Level of Frick include NMR, Mass Spectroscopy, Small Instruments/EPR, Laser, Crystallography, Biophysics and Small Molecule Screening Center. The Glassblowing Facility is located in 123 Jadwin Hall. Facility directors have each established scheduling, hygiene and social distancing rules appropriate to the operation and type of instruments in the facility, as well as the size of the space and how the instruments are laid out. All will be using iLab or Google calendars to ensure users are scheduled appropriately to accommodate occupancy and spacing parameters. Each core facility director has submitted a separate research plan (RLOP) describing these practices in detail.

**Stockroom (B-Level)**: The stockroom is self-service and open access. Six people can be in the stockroom at one time, with one person in each rack section. The entry door is the south door and the exit door is the north door. These will be clearly marked. Hand sanitizers will be placed at the entrance and exit doors. Keyboard covers will be used to enter items in the inventory system. Disinfectant wipes or spray and paper towels will be provided to disinfect the work surfaces after each use. Masks will be required at all times.

**Space Utilization**: Describe how the facilities and work spaces will be managed to support physical distancing. What work areas will be designated for use or restricted (e.g., marked on floor, desk, or chair). Describe any minor adaptations (e.g. directional signs, barriers) that must be in place prior to working in a space.

[**DESCRIBE THE SPACE UTILIZATION PLAN**]

All exterior doors will have signs posted indicating how whether they are entrances or exits. North doors (facing Jadwin Physics) will serve as entrance and south doors (toward patio) will serve as exits. On the stadium side of Frick, there are three doors on the side. The southernmost door will be an entrance and the other two doors will be exits. On the Washington Road side of the building, there are two doors, both of those doors will be entrances to Frick. All doors will have signs indicating whether it can be used as an entrance or exit.

Directional signs will be placed at stairwells (north side stairwell will be going up and southside stairwell will be going down). The central stairway to the B-level will be down, only.
Elevators will be single occupancy only. Signs will be posted at elevator doors encouraging use of the stairs. The floors near the elevators will have tape at 6 ft intervals for those waiting to use the elevator. Signs in the elevator will suggest using one’s elbow to select floors.

Occupancy signs will be placed outside of and inside each room where that is required, as described above.

The mailroom has two copiers opposite each other. One copier will be taped off, as it is not possible to ensure social distancing if both copiers are in use.

Administrative offices will be minimally occupied by those who need to be present to support the research resumption during ramp up to Level 2. All relevant administrative offices are single occupancy. Doors may be closed to ensure social distancing.

Common space plans are described in the section above, including how spaces are organized to ensure physical distancing. Our facilities manager and coordinator will need to work with Building Services and Facilities to ensure furniture is removed in the atrium and public restroom stalls are blocked off. Staff will mark off chairs in common seating areas and conference rooms.

PIs have described space utilization for each research lab in their research plans, as have core facility directors (see above regarding scheduling).

For stockroom plans, see above and attached floor plan.

**Sanitizing Plan:** Describe any specific items that will require regular sanitizing, along with the appropriate sanitizing agents, frequency, and responsible individuals.

[DESCRIBE THE SANITIZING PLAN]

Building services will continue to clean and sanitize the bathrooms, stairwell railings, entrance and exit doors and interior doors, as well as cafe tables and chairs. We will provide spray bottles with 60-70% isopropanol/water solution and paper towels in the cafe, mailroom, kitchenettes, and conference rooms, as well as hand sanitizer pump bottles at door entrances and exits, inside conference rooms, mailroom, outside core facility entrances, and at intervals throughout the atrium. Bathroom toilets flush automatically and water at sinks is also touchless. There are no air dryers, only paper towels. Hand sanitizer will also be located outside of research labs. Cloth face masks have been ordered from EHS for all (non-lab) staff who may need to be in Frick for the transition to Level 2. Labs are ordering disposable masks, face shields and fire-resistant masks for specified tasks, as required.

Core Facilities have specified hygiene practices for each facility that include plastic keyboard covers that can be cleaned with sanitizing spray or plastic wrap that will be replaced after each user. Researchers will wear gloves if they are handling samples and placing them in the instruments. Scheduling user time on the instruments will allow for cleaning between users. (Please see individual core facility research plans.)

For stockroom plans, see description above and attached floor plan.

Note that liquid nitrogen filling station in B-level tunnel will have cleaning spray bottle, paper towels, a trash can, and a keyboard cover to ensure hygiene. Users will clean the keyboard cover with cleaner after each use.
C. Roles and Responsibilities

Department chair/ institute director

- Review PI Research Lab Operations Plans to ensure that plans are complete, adhere to the levels of research operations and adequately protect the health and safety of Princeton personnel.
- Communicate to faculty, staff, researchers and graduate students regarding the unit’s plan to monitor compliance with remote work, social distancing, hygiene, health and safety.
- Coordinate with the Office of the Dean for Research to communicate instructions to PIs, facility directors, staff and researchers on the hygiene, health and safety requirements to resume research, or changes to those requirements that may occur in future.

Department/institute staff

- Ensure that critical research facilities and services are staffed and operational prior to their first use by researchers returning to campus.
- Ensure staff are available to resume delivery of supplies to labs.
- Coordinate with EHS on the provision of PPE to the academic unit for the resumption of research.
- Check eyewash and safety showers to ensure they are accessible and working properly.
- Communicate with Building Services to ensure all sinks have soap and disposable towels available, and that hand sanitizer is available throughout the building.
- Coordinate with facilities to install signage or other indicators for how personnel should move through the building and use common spaces (entrances/exits, bathrooms, stairwells, etc.) when it becomes available.
- Work with supervisors and PIs and Human Resources, The Office of the Dean of the Faculty, and the Graduate School on the appropriate application of policies regarding return to campus, work schedules and accommodations.
- Start ordering or inquiring about orders. Communicate with procurement regarding any purchases that need central coordination or support.

PI/facility director Responsibilities

- Prepare and submit a Research Lab Operations Plan for review and approval by department chair/institute director, and subsequently to the Office of the Dean for Research through SHIELD.
- Ensure laboratory information in SHIELD is up to date with all personnel, and add incoming personnel in a timely manner.
- Ensure that each member of the lab completes “Safe Practices for Resumption of Research” training available in the Employee Learning Center.
- Communicate with lab members about the requirements for remote work, social distancing, hygiene, health and safety.
- Communicate new procedures for researchers to use shared equipment within your lab.

Appendix:
[PROVIDE ADDITIONAL INFORMATION RELATED TO PLANS HERE. FOR EXAMPLE, STAFFING SCHEDULES OR FLOOR PLANS]
Bridge Lounges (Floors 1-3; 2 bridges, each floor):

- 2 chairs removed (in red) with remaining chairs positioned 6' to 9' apart.
- Tables remain
• 510 sq. ft./160 sq. ft. = 3 occupants
• Signs designating occupancy will be placed on the door and inside room
• Chairs to be removed or taped in red
• 1 chair at each end and 1 chair in the middle of the table
• Hand sanitizer, disinfectant spray and towels provided
*1 person at a time
*A sign outside the door: Occupancy 1
*Chairs should be removed
*No eating in the kitchenettes
*Cleaning spray (60% alcohol + H2O)
*Paper towels can also be used to open fridge, microwave, cupboards and drawers etc.
572 sq. ft./160 sq. ft. = 4 occupants at a time
Occupancy will be placed on the door and inside room
Hand sanitizer to be provided, along with disinfectant wipes at the copier

Door from admin area will be locked.
6 people can be in this room at one time, with 1 person in each rack section.
- Entry door is the south door, with enter signage on door.
- Exit door is the north door, with exit signage on door.
- Hand sanitizers placed at the entry and exit doors.
- Disinfectant wipes or sprays with paper towels/wipes to be provided inside the stockroom.
Black Arrows = EXIT
Red Arrows = ENTER

North Stairwell for going up
South Stairwell for going down

5 Red Lounge Chairs spaced at 6' intervals
10 Dining tables spaced at 6' intervals with 1 chair at each

Frick Atrium
Exit to the Patio from the Atrium

Use Entry doors on the Southeast to re-enter Atrium

FRICK PATIO

Red arrows are Entry
Black arrows are Exit

= 1 chair per table