

Continuity of Operations Plan (COOP) for Weeks Lab

Department of Biochemistry

(please check specific department/college/university policies as needed, see <http://covid19.wisc.edu>;
Lists of items are not exhaustive but intended to help think through local situation)

This template addresses three areas: (1) Contacts and background information, (2) Planning to operate under different risk levels, (3) Planning to operate with disruption or shutdown.

CONTACTS AND BACKGROUND

Staffing

1. Essential personnel

Name	Email
Amy Weeks	amweeks@wisc.edu
Aspasia Amiridis	amiridis@wisc.edu
Clara Frazier	clfrazier@wisc.edu
Kasia Radziwon	radziwon@wisc.edu
William DeAngelis	wdeangelis@wisc.edu
Lauren Mazurkiewicz	lmazurkewic@wisc.edu
James Andon	andon@wisc.edu

We request that an undergraduate student, William DeAngelis, be allowed to return to the lab in Phase II. Will has been a member of the Weeks research group since September 2019. He will continue a project that he had initiated before the research disruption in the spring. Will will collect preliminary data on the specificity of a series of plant viral proteases that will be used in upcoming grant applications. This research experience is also critical for Will's career development, as he plans to apply for graduate school in Biochemistry for Fall 2021.

External resources

- **Bio safety contact** – Andrea Ladd. Email: andrea.ladd@wisc.edu
- **Chem safety contact** – Tilak Chandra. Email: tilak.chandra@wisc.edu

- **Facilities contact** – Julie Kennedy. Email: jakennedy4@wisc.edu

Continuity of authority

Who is responsible for the lab, and who are two backup decision-makers in case the responsible individual is unable to make decisions on operation or shutdown? Provide name, email, and best emergency phone number for each.

- a. Amy Weeks. Email: amweeks@wisc.edu.
- b. Aspasia Amiridis. Email: amiridis@wisc.edu.
- c. Clara Frazier. Email: clfrazier@wisc.edu.

Communication Plan

- Slack is used as a group messaging system for all lab members (contains contact information for lab members)
- Email – amweeks@wisc.edu, amiridis@wisc.edu, clfrazier@wisc.edu, radziwon@wisc.edu, wdeangelis@wisc.edu
- Zoom for remote lab meetings

Remote Data access, exchange, and security

- Data and software are stored on the Biochemistry network drive. This can be accessed by connecting to the Biochemistry VPN (biochem.vpn.wisc.edu) and then connecting to the Biochemistry file server (<smb://fs.biochem.wisc.edu>).
- Additional data, protocols, and shared resources are shared on Google Drive. All lab members have access to the Weeks Lab Shared Drive through their Wisconsin email addresses.
- Use of VPN to maintain secure access to campus IT systems (see <https://it.wisc.edu/services/wiscvpn/>).

Research Priorities:

1. Maintenance of mammalian cell lines: Mammalian cell lines will be maintained by Kasia Radziwon and Amy Weeks. Cell lines that are not being used for priority experiments are stored in a liquid nitrogen dewar located in room 6419. The liquid nitrogen level in the dewar must be checked weekly using the yard stick store in the same location. The nitrogen level should be maintained at 3"-4". Checking and refilling the dewar requires approximately 20 minutes of one person's time once weekly.
2. Maintenance of critical equipment: The UltiMate 3000/Orbitrap Exploris 480 LC-MS/MS system located in room 6420B will be maintained by Clara Frazier and Amy Weeks. Maintenance of the instrument involves refilling solvent and seal wash bottles, checking vacuum and temperature indicators, and running mass spectrometry standards at least once weekly. Maintaining and monitoring the instrument requires 2-4 h of one person's time once-twice weekly.

3. Wet-lab experiments: Clara Frazier, Kasia Radziwon, Aspasia Amiridis, and Amy Weeks are performing wet-lab experiments including protein purification, enzymatic assays, and mass spectrometry-based proteomics. These experiments are required for the students to make progress toward completion of their theses, for the PI to make progress toward tenure, and for the completion of preliminary experiments to support grant applications with deadlines in the next 3 months. All personnel are expected to plan ahead for experiments so that they can be completed as efficiently with the minimum amount of time possible spent in the laboratory. Lab personnel will plan ahead to stop experiments on short notice with minimal data loss in the event that a laboratory shutdown is required. Amy Weeks expects to spend no more than 10 hours per week in the laboratory space. Clara Frazier, Kasia Radziwon, and Aspasia Amiridis will spend no more than 40 hours per week in the laboratory space. All personnel will work on a staggered schedule such that no more than 1 person per 200 ft.² is present in the laboratory space at any given time. Experimental planning for wet-lab experiments and subsequent data analysis will be performed from home.

What to do if someone feels unwell?

If you feel unwell or have been in contact with somebody that is ill or tested positive for COVID-19, alert the PI immediately and please do not come to the lab. The PI will communicate with the group. Follow the campus guidelines (<http://covid19.wisc.edu>).

Posters with symptoms should be posted and are available from the CDC and others (see e.g., <https://www.cdc.gov/coronavirus/2019-ncov/downloads/COVID19-symptoms.pdf>), as should those about handwashing (see e.g., <https://www.cdc.gov/handwashing/materials.html>).

OPERATIONS UNDER DIFFERENT RISK LEVELS

1. Operation as normal.

Labs/offices staffed during business hours and after hours. Lab meetings in person.

2. Operation with limited risk – e.g., no known cases in the municipality.

Labs/offices staffed during business hours and after hours with essential personnel members only.

- General SOPs in place for minimizing community spread (see below).
- Particular vigilance for
 - Personal hygiene
 - Space hygiene
 - Social distancing
 - Symptom monitoring (see above)
- Lab meetings per videoconferencing.
- Heightened communications - Buddy system in place for animal work. Look for text and email messages from PI

3. Operation with heightened risk – e.g., known cases on campus.

Labs/offices staffed only by essential employees, limited hours. Lab meetings held by videoconferencing during regular lab meeting schedule.

- General SOPs in place for minimizing community spread (see next page).
- Minimal workflows in place
 - 6419 - liquid nitrogen and freezers - check weekly
 - 6406-6424 - freezers, check weekly
 - 6420B – LC-MS/MS system – check weekly
- Lab meetings per videoconferencing.

Heightened communications – Buddy system in place for lab areas and collections. Look for text and email messages from PI.

General SOPs for Minimizing community spread:

Current SOPs in the lab require daily surface sterilization of work spaces using 70% EtOH, and frequent hand washing. In addition, we will implement the following steps to minimize the possibility for virus transmission:

1. We will strictly enforce access to all laboratory spaces by authorized lab personnel only. All other personnel entering laboratory spaces must seek permission by PI first. This includes facility personnel, as well as personnel from external contractors. Exceptions are emergency situations that pose immediate risk, such as fire.
2. Occupancy of all labs that are assigned to the PI will be limited to ensure adequate distancing to 6 ft, as currently recommended by the CDC. Specifically:
 - a. 6406-6424 – no more than five people at a time (including both Weeks lab and Coyle lab personnel)
 - b. 6402 (tissue culture) – only one person at a time
3. Only healthy personnel, regardless of the level of symptoms, are allowed to enter the lab spaces.
4. Upon entering any laboratory space, personnel must wash hands immediately and in accordance with CDC guidelines, before touching any surfaces (see above).
5. Working surfaces will be sterilized with 70% Ethanol prior to assuming work.
6. In-person communication will use at least 6 feet distancing.
7. Whenever two or more people are present in 6406-6424 at the same time, they must wear a cloth face covering that covers the nose and mouth.

Because the Weeks lab and Coyle lab share space and equipment, the following additional SOPs have been agreed upon and will be followed by both labs:

8. Traffic flow:
 - A single hallway runs along the Weeks and Coyle lab spaces and therefore must accommodate bidirectional traffic. Lab personnel should wear cloth face coverings that cover the nose and mouth when traveling through the hallway and should maintain 6 ft of distance from other people.
9. Restrooms:
 - The 6th floor has one restroom. The interior and exterior door handles will be sanitized by spraying and wiping with 70% ethanol 4 times per day. A trash receptacle will be placed outside

the restroom door. After using the restroom, lab personnel are asked to wash their hands, dry them with a paper towel, use the paper towel to open the restroom door, and discard the paper towel in the receptacle outside. Leave restroom unoccupied for 10 minutes between users.

10. Lunch room / break room:

-The lunch room / break room is limited to one occupant at a time. Surfaces that will be touched (dining table, refrigerator handle, microwave handle and controls) should be sanitized with 70% ethanol before and after use.

11. Elevators:

-Two elevators are available on the 6th floor. Only one occupant should ride the elevator at a time, and a cloth face covering should be worn. If lab personnel call the elevator and another rider is inside, they should wait for the next unoccupied elevator. Elevator buttons should be pressed with the elbow rather than the hands whenever possible. Gloves used for lab work should not touch any surfaces in the elevator.

12. Shared Weeks lab / Coyle lab equipment:

-Equipment that is used by one user for blocks of time >1 hour (e.g., HPLC, FPLC, mass spectrometer, microscopes) will be scheduled via online calendar (Google). All surfaces, including keyboard, mouse, instrument controls, and benches will be sanitized before and after use by spraying with 70% ethanol and wiping.

-Walk-up equipment that is used for <1 h at a time (e.g., Nanodrop, balances, gel electrophoresis equipment) is limited to one user at a time. All surfaces, including keyboard, mouse, instrument controls, and benches will be sanitized before and after use by spraying with 70% ethanol and wiping.

-Leave enclosed side rooms (6402, 6428 BSB) unoccupied for 10 min between users.

-The handles for lab refrigerators and freezers should be touched only with lab gloves and not with bare hands.

-Shared pipettes will be removed from equipment areas. Lab members will use their assigned pipettes and tools whenever possible.

-Instrument specific sanitization protocols are listed in the table below.

Instrument	Location	Sanitization Procedure
Tabletop centrifuge	6424A BSB	Wipe down controls and door with 70% ethanol before and after use. Gloves only.
Shaker/incubators	6419 BSB	Wipe down controls and door with 70% ethanol before and after use. Gloves only.
Balances	6419 BSB	Wipe down controls and door with 70% ethanol before and after use. Gloves only.

Ice machine	6419 BSB	Wipe down door and scoop with 70% ethanol before and after use. Gloves only.
Electrophoresis equipment	6424B BSB	Wipe down electrophoresis chambers and power supply controls with 70% ethanol before and after use. Gloves only.
Akta Pure FPLC	6420A BSB	Wipe down handles of refrigerated cabinet, instrument controls, keyboard, mouse, and bench before and after use with 70% ethanol. Use gloves to touch refrigerator and instrument. Do not touch keyboard and mouse with gloves used for lab work.
Nanodrop	6412B BSB	Wipe down pedestal, keyboard, mouse, and bench before and after use with 70% ethanol. Use gloves to touch instrument. Do not touch keyboard and mouse with gloves used for lab work. Use personally assigned pipets for sample loading.
HPLC	6406B	Wipe down instrument controls, keyboard, mouse, and bench before and after use with 70% ethanol. Use gloves to touch instrument. Do not touch keyboard and mouse with gloves used for lab work.
Floor centrifuge	6406A	Wipe down controls and door with 70% ethanol before and after use. Gloves only.
TC incubators	6402 BSB	Wipe down controls and door with 70% ethanol before and after use. Gloves only.
Biosafety cabinets	6402 BSB	Wipe down surfaces and sash with 70% ethanol before and after use. Gloves only.
Revolve fluorescence microscope	6402 BSB	Wipe down instrument controls and iPad with 70% ethanol before and after use. Gloves only.
Tabletop centrifuge	6402 BSB	Wipe down controls and door with 70% ethanol before and after use. Gloves only.
Microscopes	6428	Do not use eyepieces. Wipe down instrument controls with 70% ethanol before and after use. Use gloves to touch microscopes. Do not touch keyboard and mouse with gloves used for lab work.
Microcentrifuges	6406-6424; various locations	Wipe down controls and door with 70% ethanol before and after use. Gloves only.
PCR machines	6406-6424; various locations	Wipe down controls and lid with 70% ethanol before and after use. Gloves only.

13. High-touch surfaces

-High-touch surfaces such as door handles should be sanitized 4 times per day by spraying with 70% ethanol and wiping.

14. Tracking lab member presence in the workplace.

-Each individual who is physically present on campus will enter arrival date/time, location (building, room #) and departure time in a spreadsheet maintained on Google Drive.

15. Self-monitoring for COVID-19 symptoms.

-All Weeks lab and Coyle lab members are expected to conduct self-monitoring each day before to reporting to work. Self-monitoring will follow the most recent WIDHS guidance: <https://www.dhs.wisconsin.gov/covid19/symptoms.htm> and include the symptoms listed below. Temperatures should be taken at least 30 minutes after eating, drinking or exercising and at least 6 hours after taking medications that may lower temperature ex. aspirin, acetaminophen (Tylenol), NSAIDs (ibuprofen/advil).

Please stay home and consider contacting your healthcare provider if you have experienced the following symptoms:

- Cough
- Shortness of breath
- Fever $\geq 100.4^{\circ}\text{F}$
- Chills
- Repeated shaking with chills
- Or two or more of the following symptoms:
 - Sore throat
 - New loss of taste or smell
 - Muscle aches
 - Headache

Resource from OSHA, <https://www.osha.gov/Publications/OSHA3990.pdf>,

Maintaining the community of the lab:

- We encourage everybody to check in with each other via the group chat (Weeks Lab Slack).
- Remote lab meetings will be held via video conferencing, at the usual scheduled times.
 - One-on-one meetings with the PI: Mondays and Tuesdays at individually scheduled times via Zoom
 - Lab meeting, Wednesdays at 2 pm via Zoom
 - Social hour, Thursdays at 4 pm via Zoom
 - Journal club, Fridays at 12 pm via Zoom
- Lab members are encouraged to set up ad hoc Zoom meetings to discuss data, papers, and our lab's group coding project.

In addition to these measures, we will comply with all regulations, implemented by the university, and accessible through <http://covid19.wisc.edu>.

SCENARIO PLANNING FOR DIFFERENT LEVELS OF DISRUPTION

Instructions: Listed below are three potential scenarios that might result from COVID-19. Under the scenarios listed, provide a step by step response detailing how your lab would respond to the scenario. In addition to the 3 scenarios listed, additional lab specific scenarios can be added, if needed. The section, “other concerns” provide additional information that might should be included in your COOP.

Scenario 1 - Disruption: Several members of the lab are out sick / unavailable for an extended period, and some suppliers or internal dependencies are at risk; Add as many steps/bullets as needed.

1. In the event that a lab member who is responsible for critical lab maintenance is unavailable, the backup personnel listed in the ‘Research Priorities’ section will take over.
2. In the event that neither the primary person responsible for maintenance nor the backup person is available, other users of the equipment will be recruited to perform critical maintenance.
3. If lab members are not available to perform critical maintenance on equipment, the equipment will be safely shut down until such time as it can be safely maintained.
4. If lab members are not available to check the liquid nitrogen dewar and freezers, we will contact facilities for assistance in performing these tasks.

Scenario 2 - Suspension: Students not allowed on campus; research and lab activities suspended; infrastructure support systems remain operational; Add as many steps/bullets as needed.

1. The LC-MS/MS, HPLC, FPLC, and other lab equipment will be safely shutdown
 - a. LC-MS/MS will be switched to service only mode.
 - b. The HPLC and FPLC will be completely shut down.
 - c. Freezers and liquid nitrogen monitors will remain ON.
2. One person (Amy Weeks) will be assigned to check the liquid nitrogen dewar and freezers and to perform a weekly lab walkthrough.
3. A backup (Aspasia Amiridis) will be assigned in the even the primary person responsible for essential lab maintenance is not available.
4. We will coordinate with facilities personnel to minimize time in the laboratory building.

Scenario 3 - Shutdown: For a campus shutdown planned for longer than two weeks, or else if the campus is inaccessible, we cannot assume critical infrastructure would be available or is at least unreliable. Place all instruments and experiments in a safe idle state that does not require services. Additional details in this scenario relate to equipment shutdown and the like.

1. The HPLC, FPLC, and LC-MS/MS will be completely shutdown.

- a. For LC-MS/MS shutdown, call ThermoFisher technical support for advice.
2. One person (Amy Weeks) will be assigned to check the liquid nitrogen dewar and freezers and to perform a weekly lab walkthrough.
3. A backup (Aspasia Amiridis) will be assigned in the even the primary person responsible for essential lab maintenance is not available.
4. We will coordinate with facilities personnel to minimize time in the laboratory building.
5. Restart will require one full day to clean the lab and to restart and test equipment.

Process for safely shutting down and securing the lab:

1. The LC-MS/MS system should be completely turned off.
2. The HPLC should be completely turned off.
3. The FPLC should be turned off. The refrigerated cabinet in which it is housed should be left ON.
4. Small equipment such as microcentrifuges, PCR machines, etc., should be turned off and unplugged.
5. Chemicals should be secured in the appropriate storage locations (e.g. flammable cabinets).
6. A lab walkthrough should be performed once weekly by either a designated lab member or facilities staff.

Other concerns to consider in scenario planning

What facilities are at risk of harm to the facility, its contents, to campus or to the public (e.g., animals that must be fed, samples that must be secured, equipment or hazardous materials that must be maintained or shut down)?

1. Hazardous gases—cylinders of nitrogen and carbon dioxide.
2. Static tanks/containers of chemicals in hoods and loss of exhaust
3. Vacuum systems pump and valve off
4. Turn off UV lamps
5. Ensure all chemical bottles are in storage cabinets and all bottles have secure lids.
6. Cap all solvent carboys
7. Empty all trash containers – remove any chemical contaminated wipes

If the lab must be staffed to avoid risk or harm, who will act as the primary minimum essential personnel to keep it operating? If the lab mustn't be staffed, state that it will shut down to ensure no risk or harm. Provide name, email, and best emergency phone number for each.

Weekly walkthroughs of the lab should be conducted to avoid risk or harm.

1. Primary walk-thru checker: Amy Weeks, amweeks@wisc.edu, (978) 549-7555
2. Secondary walk-thru checker: Julie Kennedy, jakennedy4@wisc.edu, (608) 279-5637
3. Tertiary back up walk-thru checker: Aspasia Amiridis, amiridis@wisc.edu, (803) 587-5312

APPENDUM, INFORMATIONAL, the information below was shared with by Vice Chancellor for Research & Graduate Education on March 15, 2020 with the VCRGE Center Directors to assist them in continuity planning. It is included here to further assist your planning activities.

Center directors;

See the message below from the Chancellor. The message provides guidance to ensure the safety of our community while offering the least disruption to our work. To summarize:

- *Please maintain your center research activities to the extent possible.*
- *Review your COOP plans and activate as appropriate.*
- *Formulate and disseminate plans that guide ramping down and then suspension of research if needed.*
- *Encourage remote work for those staff that can do so without disruption, while others (i.e., those you identified as essential personnel in your COOP plans) are expected to be on campus.*
- *Continue to practice recommendations and procedures that reduce the spread of the virus.*

While most research can be conducted with appropriate social distancing and typical hygienic steps, the COVID-19 outbreak has presented us with significant challenges. I thank you for your continued leadership in these challenging times. The RSP webpage, which is updated regularly, is an excellent source of information about sponsored projects: <https://rsp.wisc.edu/COVID.cfm>

Some specific actions you can take include:

- *Identify critical equipment that must remain in service, then plan for how to manage or shut down this equipment if necessary.*
- *Strive to keep all lab activities within reasonable business hours — including those involving work with hazardous material or processes. Doing so enhances the ability of Research Safety to respond if services are needed.*
- *Continue or expand cross-training among your staff to support critical functions.*
- *Identify personnel who are essential to maintain critical research and ensure they know what to do if operations are interrupted or suspended.*
- *Distribute your communications plan to personnel. If necessary, develop this plan and designate contacts to help disseminate information in a timely manner.*
- *Identify priorities and plan for critical experiments in case of limited access.*
- *Take steps to ensure remote access to files, data, servers, etc., except with regard to research with sensitive or restricted data.*
- *Research must be conducted within appropriate space designated for research activities. Personnel should not remove research materials other than laptops, data storage devices, etc. to alternative locations, including home.*
- *Plan for remote proposal submission.*
- *Be sure to check travel restrictions in advance of making travel plans.*