

Continuity of Operations Plan (COOP) for

Brian G. Fox 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
Kirk Vander Meulen	kirk.vandermeulen@wisc.edu
Nate Kuch	nkuch@wisc.edu
Debayan Chaudhary	dchaudhury@wisc.edu
Rebeca Fernandez	rfernandez5@wisc.edu
Rebecca Schultz	rlschultz3@wisc.edu
Joshua Miller	jrmiller26@wisc.edu
Connie Wang	kwang364@wisc.edu
Eric Hennemann	hennemann@wisc.edu
Alex Parker	ajparker4@wisc.edu
Mark Kutschke	mkutschke@wisc.edu
Niall Ellias	ellias@wisc.edu
Nicholas Juntunen	njuntunen@wisc.edu
Benjamin Weinstein	brweinstein3@wisc.edu

Cole Aschenbrener	caschenbrene@wisc.edu
Craig Bingman	cabingman@wisc.edu
Brian Fox	bgfox@wisc.edu
Paul Ludden	pwludden@wisc.edu

H2. Non-essential Personnel

Name	Email

External resources

- **Bio safety contact** – Karen Demick (karen.demick@wisc.edu)
- **Chem safety contact** – Tilak Chandra (tilak.chandra@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. (PI) Brian Fox – bgfox@biochem.wisc.edu
- b. Kirk Vander Meulen – kirk.vandermeulen@wisc.edu
- c. Nate Kuch – nkuch@wisc.edu

Communication Plan

The laboratory uses Teams meetings to communicate as a full group every other week and has weekly research team subgroup meetings.

Lab members also communicate via email and the phone numbers listed above.

Remote Data access, exchange, and security

All users will collect data on appropriate laboratory instruments or other computers. Researcher computers are backed up in Box or OneDrive accounts that provide both local and remote access. Files related to active projects and group presentations are shared via the Files feature of Microsoft Teams. Raw and analyzed data will be shared among project participants to ensure a viable transition of the project to another researcher if needed.

Research Priorities:

Researchers are funded by the US Department of Energy and National Institutes of Health. We have ongoing projects on structure and function relationships in the enzymology of plant cell wall deconstruction, unusual modifications of fatty acids, gene families used to make the precursors to lignin biosynthesis, and non-heme iron containing enzymes. Each of these research project has a hierarchy of priorities that are reflected in the time requested to be made available for each researcher

What to do if someone feels unwell?

Researchers will be asked to review campus policies related to temperature taking and monitor their temperatures on days they are planning to work on-site. Researchers will notify the PI if they have a fever of 100.4°F (38°C) or higher or other symptoms (e.g. shortness of breath, cough), and stay home.

Researchers that feel unwell or have family members that feel unwell will self-isolate at their personal residence. If the symptoms last longer than one day, the researcher should have a free COVID-19 test performed to inform subsequent decisions.

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 via videoconferencing.

*3. ****WE ARE HERE**** Operation with heightened risk – e.g., known cases on campus.*

General SOPs for Minimizing community spread:

Researchers will review the following UW-Madison guidelines and recommendations individually and in a research group meeting focusing on research restart before entering campus research space:

- Overview portal for UW-Madison COVID-19 information: <https://covid19.wisc.edu>
- UW Madison guidance on face coverings: <https://facilities.fpm.wisc.edu/returning-to-campus-safely/>
- OVCRGE guidelines on phased resumption of research: <https://research.wisc.edu/reboot-phase1/>

- Recommendations to bring labs back on-line: <https://d1cjb8q1w2lzm7.cloudfront.net/wp-content/uploads/sites/22/2020/05/EHS-ADM-GUI-002.pdf>.
- This COOP plan, which will be distributed to all researchers on our Teams site.
- The research floor COOP, which will be distributed to all researchers on our Teams site.

In summary, researchers will practice state and federal recommendations for minimizing exposure and transmission risks including physical distancing, maintaining cleanliness in all parts of the workspace, and excellent hygiene practice including constant, thorough hand washing and covering of coughs and sneezes. Lab requirements for use of personal protective equipment within the worksite is already specified in the lab Biological Safety and Chemical Safety protocols will be continued.

Researchers will wear face masks in all enclosed spaces in accordance with the UW Smart Restart plan and Dane County Emergency Order #8.

Maintaining the community of the lab:

The lab will continue to enforce guidelines and practices as outlined in its Chemical Hygiene Plan and BioSafety protocols. Special emphasis will be placed on the potential for any researcher to become unavailable for an extended period, so lab space will be consistently cleaned in an ongoing manner and samples stored at the end of each day.

Equipment sanitization:

All surfaces, including keyboard, mouse, instrument controls, benches, and handles will be sanitized before and after use by spraying with 70% ethanol and wiping. This includes common touch points on all incubators, centrifuges and freezers. High usage or trafficked instruments will follow sanitization protocols as listed below.

Instrument	Location	Sanitization procedure
Autoclave	154 Biochem Labs	Wipe down after use
Ice Machine	154 Biochem Labs	Wipe down door handle and scoop after use.
Warm room shakers	100P Biochem Labs	Wipe down door handle, shaker control panel after use. Gloves only.
Sonicator	148 Biochem Labs	Wipe down control panel before/after use. Gloves only.
Tecan Spectrophotometer	123 Biochem Labs	Wipe down computer keyboard+mouse, instrument panel before/after use. Gloves only.
Alliant X-14 Tabletop Centrifuge	123 Biochem Labs	Wipe down control panel, lid before/after use. Gloves only

Thermocyclers	123 Biochem Labs	Wipe down control panel, lid before/after use. Gloves only.
Biorad GelDoc system	123 Biochem Labs	Wipe down computer keyboard+mouse, door handle, tray before/after use. Gloves only.
AktaStart FPLC	123 Biochem Labs	Wipe down control panel, computer keyboard+mouse before/after use. Gloves only
AktaPure FPLC	123 Biochem Labs	Wipe down control panel, computer keyboard+mouse before/after use. Gloves only
Petri dish incubator	123 Biochem Labs	Wipe down door handle after use. Gloves only.
NanoDrop spectrophotometer, ThermoVision spectrophotometer	123 Biochem Labs	Wipe down computer keyboard+mouse, lid before/after use. Gloves only

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.

Current Scenario – Approved Research Restart: The lab requests continuation of research activities being carried out prior to the campus shutdown.

The Fox lab Room 123 has 1969 sq ft of contiguous lab space, so requests a maximum occupancy of 9 researchers at any time. Our lab is configured to have several internal side rooms (123A, coldroom; 123B, spectrometry; 123C, media preparation; 123D, organic synthesis; 123E, cell-free translation) whose size permits only one researcher to be present at a time. Because the use of these rooms is integral to the work of all researchers, and the time spent in these rooms is typically short, we will maintain physical distancing by permitting only one researcher in these rooms at any time. Of note, this has been the typical practice in the past and will be maintained.

We also share several rooms with the Butcher, Markley and Rienstra labs (100P, warm room; 148, freezers and fermentation; 154, autoclaves and media preparation; 156, nuclease-free room). While the use of these rooms is integral to the work of many researchers on our floor, and the time spent in these rooms is typically short, we will maintain physical distancing by permitting only the posted number of researcher in these rooms at any time. This constraint is also apparent given the sizes of most of these rooms.

Room 125 contains printers and also serves as a break room for the Fox and Butcher labs. Only one person at a time will be permitted in this room. The Fox lab will use restrooms 172 and 174.

The number of people in the Fox lab at any given time will be maintained at or below the recommendation based on 250 sq ft per person. We do this to allow planned access for collaborators and rotation students. Our plan is to provide researchers sufficient time to complete experiments, and then work remotely to analyze their results. We expect that several researchers will be in the lab all day. Researchers will be able to define preference for shift work or work on days of the weekend. Our highest priorities for new research are the following:

- Nate Kuch requests on-site permission to complete experiments needed for progress on his dissertation research on bioenergy research. Nate requests 40 hours per week of laboratory access.
- Kirk Vander Meulen requests on-site permission to complete experiments needed for annual progress on DOE grant MSN 220949. Kirk requests 40 hours per week of laboratory access. Kirk also requests approximately 5 hours of access to the Biophysics Instrument Facility to access the calorimeter in assistance with Connie Wang's undergraduate thesis project.
- Debayan Chaudhary requests on-site permission to complete experiments needed to assure progress on DOE grant MSN 220949. Debayan requests 40 hours per week of laboratory access.
- Rebeca Fernandez is a lab collaborator from the Brunold lab in Chemistry. She requests on-site permission to work in the Fox lab to complete experiments needed for her dissertation, anticipated completion date end of May 2021. Rebeca requests up to 28 hours per week of laboratory access.
- Becky Schulz is a lab collaborator from the Brunold lab in Chemistry. She requests on-site permission to work in the Fox lab to complete experiments needed to assure progress on her dissertation studies. Becky requests up to 28 hours per week of laboratory access.
- Joshua Miller is a lab collaborator from the Brunold lab in Chemistry. He requests on-site permission to work in the Fox lab to complete experiments needed to assure progress on his dissertation studies. Joshua requests up to 28 hours per week of laboratory access.
- Brian Fox requests on-site permission to carry out review of laboratory and department operations. Brian requests up to 10 hours per week of laboratory access, which will be staged to accommodate the needs of other researchers described above.
- Paul Ludden requests on-site permission to carry out review of laboratory and department operations. Paul requests 6 hours per week of laboratory access, which will be staged to accommodate the needs of other researchers described above.
- Craig Bingman requests on-site permission to work in the Fox lab to access the anaerobic chamber used for X-ray crystallography research. Craig requests up to 10 hours per week of laboratory access, which will be staged to accommodate the needs of other researchers described above.

The following requests for undergraduate researchers are made. All have completed the campus COVID-19 training and the report of completion is added to the Fox lab folder.

- Connie Wang requests on-site permission to work in the Fox lab to perform her Senior Honors Thesis supported by the Mary Shine Peterson award. Connie will be supervised by Kirk Vander Meulen. She requests 12 hours per week of laboratory access. Connie also requests approximately 5 hours per week to access the Biophysics Instrument Facility to conduct titration calorimetry experiments.
- Eric Hennemann requests on-site permission to work in the Fox lab to gain additional research experience, with his work supporting the bioenergy goals of the Great Lakes Bioenergy Research

Center. Eric will be supervised by Kirk Vander Meulen. Eric requests 14 hours per week of laboratory access.

- Alex Parker requests on-site permission to work in the Fox lab to gain additional research experience, with his work supporting the bioenergy goals of the Great Lakes Bioenergy Research Center. Alex will be supervised by Nate Kuch. Alex requests 12 hours per week of laboratory access.
- Mark Kutschke requests on-site permission to work in the Fox lab to gain additional research experience, with his work supporting the bioenergy goals of the Great Lakes Bioenergy Research Center. Mark will be supervised by Nate Kuch. Mark requests 12 hours per week of laboratory access.
- Niall Ellias requests on-site permission to work in the Fox lab to gain additional research experience, with his work supporting the bioenergy goals of the Great Lakes Bioenergy Research Center. Niall will be supervised by Nate Kuch and Kirk Vander Meulen. Niall requests 12 hours per week of laboratory access.
- Nicholas Juntunen requests on-site permission to work in the Fox lab to gain additional research experience, with his work supporting the biochemistry research aims of the Brunold lab in the UW Chemistry Department. Nick will be supervised by Rebeca Fernandez. Nick requests 10 hours per week of laboratory access.
- Benjamin Weinstein requests on-site permission to work in the Fox lab to gain additional research experience, with his work supporting the biochemistry research aims of the Brunold lab in the UW Chemistry Department. Ben will be supervised by Becky Schultz. Ben requests 12 hours per week of laboratory access.
- Cole Aschenbrener requests on-site permission to work in the Fox lab to gain additional research experience, with his work supporting the biochemistry research aims of the Brunold lab in the UW Chemistry Department. Cole will be supervised by Joshua Miller. Cole requests 10 hours per week of laboratory access.

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.

Ongoing experiments will be stopped or transferred to another researcher to complete under orderly shutdown. Samples will be stored and computer and instruments that do not have an anticipated need in the next 24-72 hours will be shut down.

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.

If suspension from the anticipated research restart is needed, the lab will follow procedures used to shut down the lab at campus order on March 16. Completion of this process took 1 day.

Ongoing experiments will be stopped immediately, and biological samples, reagents and other research materials will be stored for long-term viability. Computers and instruments will be shut down. Biochemistry building personnel will ensure operation of fridges and freezers where samples are stored.

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.

If shutdown from the anticipated research restart is needed, the lab will follow procedures used to shut down the lab at campus order on March 16. Completion of this process took 1 day.

All samples and research materials will be stored for long-term viability. Critical materials will be transferred to a freezer connected to a backed-up power supply. All instruments and computers will be shut down.

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)?

No materials in the lab pose a safety risk if left unattended.

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.

The lab does not require staffing to avoid risk or harm. Biochemistry building personnel will monitor freezers and refrigerators storing research materials. Emergency contact for the lab is Kirk Vander Meulen (email kirk.vandermeulen@wisc.edu)