

Continuity of Operations Plan (COOP) for

Rienstra 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

Chad Rienstra			crienstra@wisc.edu , chad.rienstra@gmail.com
Dwaipayan Mukhopadhyay			dmukhopadhyay@morgridge.org
Eric Han			Rhan28@wisc.edu
Kelsey Collier			Kcollier3@wisc.edu
Ronnie Frederick			rofrederick@wisc.edu

2. Non-essential Personnel

Name	Primary phone	Secondary phone	Email
Lai Bergeman			lai.bergeman@wisc.edu

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External resources

•**Bio safety contact** – Ronnie Frederick, roffrederick@wisc.edu Note that our lab operates as BSL1 and we do not have any pathogens in the lab, only lab strain *E. coli*.

•**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) Chad Rienstra, crienstra@wisc.edu
- b. Kelsey Collier (staff), kcollier@wisc.edu
- c. Collaborating PI: Katherine Henzler-Wildman, henzlerwildm@wisc.edu

Communication

- Group messaging will be via slack and email. Important group notices will be sent to rienstra_group@nmrfam.wisc.edu and posted in the Rienstra slack team. Note that the contact-list channel within that group has all lab members contact information.
- Email – rienstra_group@nmrfam.wisc.edu
- Video conferencing for virtual lab meetings will be by zoom or Webex. Meeting ID or other connection info will be posted in Rienstra slack and sent to rienstra_group@nmrfam.wisc.edu

Remote Data access, exchange, and security

- Electronic Data Storage – Everything must be saved on the ELN or on the file server. Do not archive junk data in these locations. All raw NMR data, optimized processing scripts, processed data should be on the server, with a README file to explain the organizational structure. At a minimum, the sample info, date, spectrometer info and acquisition parameters must be associated with the data. Gels, additional analysis, and other data can be stored on the server if you have a clear organizational structure, or must be stored on the ELN. Lab protocols must be stored on the ELN.
- Work in progress, such as paper drafts may be shared on Box. Once you are done and we have final copies, please clean up all the earlier drafts and then copy to the ELN or server to archive.
- Use of VPN to maintain secure access to campus IT systems (see <https://it.wisc.edu/services/wiscvpn/>). If you have any issues connecting, please contact IT for assistance using the job board and let me know via email or text.

Research Priorities:

1. Wet-lab experiments:

- SARS-CoV-2 project (NSF Eager grant, MSN240777). Vilius Kurauskas (in Henzler-Wildman space) and Ronnie Frederick (in Rienstra/Markley space) will be present in the wet lab to optimize constructs and express and purify protein for NMR experiments. They will follow the social distancing and cleaning procedures described below. If Vilius (or Ronnie) become ill, Katie Henzler-Wildman will complete the experiments.

Primary:

Vilius Kurauskas, kurauskas@wisc.edu

Secondary:

Katie Henzler-Wildman, henzlerwildm@wisc.edu

- Access to retrieve samples for other projects (including Rienstra NIH grants and startup activities) will be limited to short durations of time by those names below and coordinated with Ronnie Frederick to minimize number present in 161 Deluca labs space.
- Primary: Kelsey Collier, kcollier@wisc.edu
- Secondary: Eric Han, rhan28@wisc.edu

2. All undergraduate wet lab experiments are suspended currently. All *E. coli* are stored as glycerol stocks at -80 °C, plasmids frozen at -20 °C, and protein samples stored at -80 °C.

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 Chad immediately via phone or text and please do not come to the lab. Chad 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).
- No undergraduates should be in the lab until further notice. Remote work should continue.
- Rienstra will enter the lab only when required to assist in experimental continuation in the event that a student or postdoc is unable to complete an experiment in progress.
- A maximum of 2 people from the list of essential personnel will be present in the lab at one time to ensure that there is no more than 1 person per 350 square feet. This will include Ronnie Frederick, Chad Rienstra, Kelsey Collier, and Eric Han. Essential personnel will only be present in lab to perform tasks that must be performed in person in the lab and will minimize time in lab needed to carry out the required tasks. Actual dates in the lab must be recorded on the shared lab google calendar for documentation.
- Lab google calendars will be used to reserve key pieces of shared equipment and the small microbiology room (only 1 person at a time) to ensure social distancing within the lab.
- The PI has met with everyone individually and you should have a plan for what you are working on, along with your priority for time in the lab and for work from home during phase
- Access to NMRFAM MUST be coordinated with NMRFAM staff to ensure social distancing within the facility. For longer acquisitions (assignment experiments, dynamics experiments, NOESY data), contact Marco to schedule sample drop-off. He will insert the sample in the instrument so that you can proceed with remote operation. If you need shorter experiments for screening sample conditions or titrations, you must have PI permission and will have specific days and times during which you can enter the facility to perform these experiments.

Heightened communications –Look for text and email messages from Katie

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 for pre-scheduled access for shared equipment OR 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. Biochem 161: 1 person
 - b. Biochem 171A: 1 person
 - c. Biochem 1st floor equipment rooms: 1 person
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 and at completion of work.
 6. A mask MUST be worn if you approach within 6 feet of another person or two individuals are present within a small equipment room at the same time. These interactions should be minimized (no more than 5 minutes) when needed to quickly access samples or equipment in a time-sensitive experiment.
 7. In-person communication will use at least 6 feet distancing.

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.
- Remote lab meetings will be held via video conferencing, at the usual scheduled times.

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.

- *Example Step: Shut down hazardous process materials*
 - *Example Step: Selected staff would work on non-hazardous cleanroom maintenance projects, protected by social distancing if necessary*
1. Have a lab buddy – be sure that your buddy knows what you are working on.
 2. For work in progress, keep an accessible copy of the protocol (hard copy on your lab bench or electronic copy on the ELN) with obvious notation of where you are in the protocol so that someone else can pick up and complete any critical steps.
 3. Make sure all protocols clearly note the next point at which the sample or experiment can be paused and stored in a long-term stable state.

4. Do not start experiments that require expensive reagents and require more than 2-3 days to complete or reach a good stopping point without PI approval in advance.

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. All equipment shut down or in idle mode at the end of each day. Double check that all flames or heat sources are off and gas is turned off when not in use. Check that gas cylinder regulator valves are closed when not in use.
2. Check that all chemicals and unwanted material containers are capped and stored appropriately.
3. All lab members work remotely, except for Ronnie Frederick's work on SARS-CoV-2 as described above under Research Priorities. Vilius Kurauskas's from Henzler-Wildman lab will collaborate on this project and provide the 2nd person required for lab safety.
4. Electronic communication and meetings as usual.
5. Chad and Biochem department staff will do lab walk throughs to make sure everything is OK.

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.

- All equipment shut down or in idle mode. Double check that all flames or heat sources are off and gas is turned off. Check that gas cylinder regulator valves are closed.
- Check that all chemicals and unwanted material containers are capped and stored appropriately.
- All lab members work remotely, electronic communication and meetings as usual.
- Chad and Biochem department staff will do lab walk throughs to make sure everything is OK.

For this scenario, also consider...

Restart will require a 0.5 day to fully clean the lab, followed by another 0.5 day to restart and test equipment.

What is the process for safely shutting down and/or securing the lab?

- All DNA to be stored at -20
- All protein to be stored at -80
- Shut down all computers and laboratory equipment except freezers
- Autoclave and remove all biohazardous waste from laboratory
- Turn off lights and lock all doors

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 - NONE
2. Animal care - NONE
3. Water cooled equipment that can be damaged by loss of water -NONE requiring continuing operation.
4. Loss of nitrogen purges - NONE
5. Static tanks/containers of chemicals in hoods and loss of exhaust – All should be capped.
6. Vacuum systems pump and valve off.
7. Turn off UV lamps.
8. Ensure all chemical bottles are in storage cabinets and all bottles have secure lids.
9. Cap all solvent carboys
10. 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.

We have one -80C freezer and two hoods. Only walk through requirement is to check on these alarms as needed.