

Continuity of Operations Plan (COOP) for Wright Lab & Cryo-EM Research Center, Department of Biochemistry

Individual Lab COOPs should be shared with the Department Chair/Center Director, and the Administrator in case the lead faculty/PI are not available.

(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
Elizabeth R. Wright	erwright2@wisc.edu erwright73@gmail.com
Eric Montemayor	emontemayor@wisc.edu
Matthew Larson	mrlarson2@wisc.edu
Jae Yang	jyang525@wisc.edu
Bryan Sibert	sibert@wisc.edu
Juleen Dickson	jmdickson@wisc.edu
Daniel Parrell	dparrell@wisc.edu
Joseph Kim	jykim35@wisc.edu
Juan Sanchez	jcsanchez@wisc.edu

2. Non-essential Personnel:

Name	Email
None	

External resources

1. Thermo Fisher Scientific (electron microscope) contacts –
 - a. Micky Woods (field service engineer), micky.woods@thermofisher.com,
 - b. Jeff Balkovec (field service engineer manager), jeff.balkovec@thermofisher.com,
 - c. Additional engineers and applications engineers to be determined (TBD) during training phase (starting in May 2020)
2. FP&M contacts –
 - a. Bo Muwahid, bo.muwahid@wisc.edu,
 - b. Mike Zimmerman, mike.zimmerman@wisc.edu,
3. Chemical safety contact – Tilak Chandra, tilak.chandra@wisc.edu,
4. Biosafety contact – Karen Demick, karen.demick@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. *Note that in the absence of group members a and b, group members c and d will work together to make decisions for the laboratories (Wright and cryo-EM facility).*

- a. (PI) Elizabeth R. Wright, erwright2@wisc.edu or erwright73@gmail.com, (
- b. Eric Montemayor, emontemayor@wisc.edu,
- c. Matthew Larson, mrlarson2@wisc.edu,
- d. Jae Yang, jyang525@wisc.edu,

Communication

- Group messaging system for all lab members (contains contact information for lab members): biochem_wright@lists.wisc.edu
- Email – email list of all lab members

Name	Primary phone	Secondary phone	Email
Elizabeth R. Wright			erwright2@wisc.edu erwright73@gmail.com
Eric Montemayor			emontemayor@wisc.edu
Matthew Larson			mrlarson2@wisc.edu
Jae Yang			jyang525@wisc.edu
Bryan Sibert			sibert@wisc.edu

Daniel Parrell			dparrell@wisc.edu
Juleen Dickson			jmdickson@wisc.edu
Joseph Kim			jkim35@wisc.edu
Juan Sanchez			jcsanchez@wisc.edu

- Video conferencing (e.g. Webex, Teams, Zoom, or Skype) for remote lab meetings. Group meetings to be held every Tuesday at 10 am central via Microsoft Teams. Additional web-based meetings will be held as needed.

Remote Data access, exchange, and security

List provisions for cloud data storage systems currently in place (e.g. Box, Google Drive) and remote access.

The Wright lab and cryo-EM facility currently have remote access to data on Drobo drives that are housed in the Department of Biochemistry server room. Additionally, remote access to computational workstations in the Biochemistry server room is achievable via ssh.

In the event of a hardware failure, it may be necessary for essential personnel in the lab or facility to access the server room in Biochemistry to reset hardware. This may also be achievable by departmental IT support staff that are deemed as essential by the department chair.

In order to maintain remote access to data and computational resources, it is essential that campus and relevant staff outside of biochemistry maintain VPN access. It may become necessary for Biochemistry IT staff to access the server room to restore VPN access to the Drobo drives or workstations, in the event of a network outage that is related to local hardware in Biochemistry.

Research Priorities:

1. Completion Of In-Progress Cryo-Electron Microscope Installations. ThermoFisher Scientific engineers will be working from 3/18/2020 onward to install, configure, perform resolution tests, and train Cryo-EM Research Center faculty and staff on the four electron microscopes recently delivered to the Cryo-EM Research Center in the Department of Biochemistry. These steps are critical for the installation process that was begun on 2/26/2020 and when complete the instruments will be operational for training of the Cryo-EM Research Center faculty and staff. Not completing this now will introduce significant additional cost and delay to reschedule the Thermo Fisher Scientific engineers and ship the necessary equipment back to our site once normal campus operations resume. By completing this last step in the installation process, these instruments will be ready for applications dependent training for

the Cryo-EM Research Center faculty and staff and expedite our ability to have the instruments open to users soon after campus resumes normal operations.

2. *Additional Basic Training and New Advanced Training Scenarios for In-Progress Cryo-Electron Microscope Installations.* Close to the time of completion of the microscope installs and immediately after their installations are complete, it will be necessary for essential staff to receive training from the current team of Thermo Fisher Scientific engineers and a new group of Thermo Fisher Scientific applications engineers in order to maintain the microscopes after the engineers have departed. It is anticipated that some basic and advanced training will be accomplished remotely (i.e., via online means using Teams and remote logins to the microscopes). Onsite training by the engineers and applications engineers will be necessary so that routines associated with microscope maintenance and operations can be properly configured and handed off to essential staff. Training sessions will encompass full days (~8 hours) with the training installation and applications engineers. The entire training period will be approximately 2 full months of onsite coordinated activity between Thermo Fisher Scientific and Cryo-EM Research Center staff. Calculations for numbers of individuals who could safely work in the laboratories associated with the Cryo-EM Research Center are noted in the department letter to Dr. Wright.
3. *Maintenance Of The Cryo-Electron Microscopes.* Liquid nitrogen (LN₂) fills to keep two of the electron microscopes (Krios and Arctica) operational, this is an essential operation. If this is not maintained, the microscopes must be transitioned to a warmed state to avoid damage and costly and time-consuming repairs. Performing LN₂ fills will require trained personnel to come in about twice per week. At the same time staff will check the integrity and operation of all powered and water-cooled equipment in the facility (all four electron microscopes). Key personnel to perform these duties, including backup personnel in case some individuals become ill:
 - a. Elizabeth Wright, PI, , email: erwright2@wisc.edu
 - b. Eric Montemayor, EM facility manager, email: emontemayor@wisc.edu
 - c. Matt Larson, EM facility IT/sys admin, email: mrlarson2@wisc.edu
 - d. Bryan Sibert, Wright lab/EM facility postdoc, email: sibert@wisc.edu
 - e. Jae Yang, Wright lab postdoc, email: jyang525@wisc.edu
4. *Cryo-EM Research Center Renovations.* Since the installation of the microscopes, which began on 2/26/2020, minimal numbers of contractors associated with the phase 1 and phase 2 renovation projects have been onsite. When necessary, Dr. Wright has coordinated with UW-Madison FP&M project managers Bo Muwahid and Mike Zimmerman to facilitate contractor access to the phase 1 and phase 2 laboratories so that minimal disruptions to the microscope installs would occur and to retain the **general SOPs for minimizing community spread**. It is anticipated that this mode of limited access may continue through May 2020 and that a period of one- to two-weeks of regular access to the phase 1 and phase 2 projects may be necessary during late May or early June 2020. The timeline associated with the regular access phase has not been finalized due to coordination of efforts and the arrival of materials to the contractors and jobsite.

5. Wright Lab and Cryo-EM Research Center Support Computers and Servers. The support computers and servers provide remote access for instrument operation, maintenance, and data analysis. In some cases, we may need to adjust computer settings or restart servers, if this is the case, we can address many issues. However, in the event that we cannot, we would rely on Kerry Tobin (Biochemistry IT) to resolve an issue.
 - a. (PI) Elizabeth R. Wright, erwright2@wisc.edu or erwright73@gmail.com,
 - b. Eric Montemayor, emontemayor@wisc.edu,
 - c. Matthew Larson, mrlarson2@wisc.edu
 - d.
6. Maintenance Of Cell Lines And Cryo-EM Grid LN₂ Storage Dewars in the Wright Lab.

While essential personnel are already present to perform essential LN₂ tank exchanges (i.e., cryogen re-fills) for the electron microscopes (Krios and Arctica), they can refill the liquid nitrogen (LN₂) in the cell line and cryo-EM grid storage dewars. The large LN₂ tanks (230 L) will either be present in the Wright lab or LN₂ will be dispensed into smaller dewars (4 L) from the departmental stocks to fill the Wright lab cell line and cryo-EM grid storage dewars. Performing LN₂ fills will require trained personnel to come in about once per week. Key personnel to perform these duties, including backup personnel in case some individuals become ill:

 - a. Elizabeth Wright, PI, email: erwright2@wisc.edu
 - b. Eric Montemayor, EM facility manager, email: emontemayor@wisc.edu
 - c. Matt Larson, EM facility IT/sys admin, email: mrlarson2@wisc.edu
 - d. Bryan Sibert, Wright lab/EM facility postdoc, email: sibert@wisc.edu
 - e. Jae Yang, Wright lab postdoc, email: jyang525@wisc.edu
7. Wright lab wet-lab experiments:
 - a. NIH R01 GM104540: Structure and function of prokaryotic appendages by cryo-ET. Daniel Parrell and Juan Sanchez will be present in the wet lab to culture bacteria for light microscopy and EM experiments. They will follow social distancing and cleaning procedures described below. If either of them becomes ill, Elizabeth Wright or Eric Montemayor will work with either Daniel or Juan complete the experiments.
 - b. NIH R01 GM114561: Structural investigations of macromolecular complexes critical to the hRSV life cycle. Bryan Sibert and Jae Yang will be present in the wet lab to culture mammalian cells, propagate virus, and prepare specimens for light microscopy and EM experiments. They will follow social distancing and cleaning procedures described below. If either of them becomes ill, Elizabeth Wright or Eric Montemayor will work with either Bryan or Jae complete the experiments.
 - c. NIH R01 GM132068-11A1: Role of Vpu, Tetherin, and Siglec-1 in HIV-1 Replication. Bryan Sibert will be present in the wet lab to prepare specimens for light microscopy and EM experiments. He will follow social distancing and cleaning procedures described below. If Bryan becomes ill, Jae Yang and/or Elizabeth Wright will complete the experiments.
 - d. NIH R01 GM124216: Effectors of retrotransposon movement. Bryan Sibert will be present in the wet lab to prepare specimens for EM experiments. He will follow social distancing and cleaning procedures described below. If Bryan becomes ill, Jae Yang and/or Elizabeth Wright will complete the experiments.

- e. NIH R01 AI128837: Using DNA/MVA/protein immunization of rhesus macaques to investigate how the background of the HIV-1 envelope and nature of the protein boost shape the genetic and functional antibody landscape. Jae Yang will be present in the wet lab to prepare specimens for EM experiments. She will follow social distancing and cleaning procedures described below. If Jae becomes ill, Bryan Sibert and/or Elizabeth Wright will complete the experiments.
- f. NIH R01 HL143794: Conformational activation of von Willebrand factor. Eric Montemayor will be present in the wet lab to prepare specimens for EM experiments. He will follow social distancing and cleaning procedures described below. If Eric becomes ill, Elizabeth Wright will complete the experiments.
- g. NIH R21 HL146299: Cryo-ET structural studies of platelets. Juleen Dickson will be present in the wet lab to prepare specimens for EM experiments. She will follow social distancing and cleaning procedures described below. If Juleen becomes ill, Elizabeth Wright will complete the experiments.
- h. DOE GLBRC DE-FOA-0001540-#0000227107: Cryo-EM structural studies of organisms useful for the production of biofuels and bioproducts. Daniel Parrell will be present in the wet lab to prepare specimens for EM experiments. He will follow social distancing and cleaning procedures described below. If Daniel becomes ill, Juan Sanchez and/or Elizabeth Wright will complete the experiments.
- i. Joseph Kim will be present in the wet lab to perform the experiments needed to complete his thesis research (expected thesis defense in spring 2022). If Joe becomes ill, Elizabeth Wright will complete the experiments.
- j. Dr. Nicolas Biais will visit UW-Madison from August 20-30, 2020. During this time, he will work with Dr. Daniel Parrell and Mr. Juan Sanchez in the laboratory to prepare bacterial cells for cryo-EM imaging. The project will resolve questions related to bacterial pilus structure and function. The group will follow social distancing and cleaning procedures described below. If anyone becomes ill, the other members of the team will complete the experiments.
- k. Dr. Timothy Grant will work with staff of the CEMRC to implement data collection strategies on the transmission electron microscopes. This would begin September 2020. The group will follow social distancing and cleaning procedures described below. If anyone becomes ill, the other members of the team will complete the experiments.

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 - 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.
- A maximum of 6 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. A minimum of two people will be present at one time following established lab safety protocols. 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, the CLEM and Primo microscopes, and the bacterial/tissues culture rooms to ensure social distancing within the lab.
- I have 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 1.
- Some minimal workflows are in place
 - Critical requirements included LN₂ tank exchanges, filling LN₂ in storage dewars, and maintenance of the power and water infrastructure.
 - Non-essential spaces and critical check-ups for spaces/equipment
 - Lab room - liquid nitrogen and freezers - check weekly
 - Lab room - freezers, check weekly
- Lab meetings per videoconferencing as regularly scheduled on Tuesday afternoons at 3:30 pm. Additional meetings are scheduled on an *ad hoc* basis.

Heightened communications – 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 to be by PI authorized lab personnel only. All other personnel entering laboratory spaces must seek permission by the PI first. This includes facility personnel, biochemistry department personnel, UW-Madison campus 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 social distancing of a minimum of six-feet between personnel. The six-foot minimum distance is the current recommendation by the CDC. Specifically:
 - a. List of individual lab rooms and max. occupancy noted in **point 7** (below).
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 the completion of work.
6. A mask will be worn while in the lab to reduce the risk of asymptomatic transition. 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 six-foot distancing, as well as PPE controls of face masks, gloves, and disposable laboratory coats.
Resource from OSHA, <https://www.osha.gov/Publications/OSHA3990.pdf>
8. When PI selected and approved essential staff are required to interact with ThermoFisher Scientific engineers and applications engineers during the pre- and post-installation training phase of operations, the following restrictions will be imposed in order to conform to the CDC recommendation of six-foot minimum distances, in addition to above precautions:

Maintaining the community of the lab:

- 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.

1. Discontinue experiments with hazardous materials.
2. Cryogen fills and maintenance continue as usual.
3. Cryo-EM Research Center and Wright Lab support computers and servers are maintained to ensure remote access for data collection and analysis as usual.
4. Ensure that information on samples in the microscopes, when they are operational, is up to date so that another staff member can continue the work if you become ill.
5. When microscopes are operational, data acquisition for user project and collaborations continue with preference for experiments that require less staff time (long-term data collection rather than sample-intensive projects).
6. Lab buddies are designated by the PI and agreed upon upfront – be sure that your buddy knows what you are working on.
7. For work in progress, keep an accessible copy of the protocol (hard copy on your lab bench or electronic copy in the Wright lab dropbox) with obvious notation of where you are in the protocol so that someone else can pick up and complete any critical steps.
8. 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.
9. 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. Wet lab instruments turned off.
2. Liquid nitrogen (LN₂) tank exchanges and LN₂ storage dewar refills continue as usual with a preference to use the buddy system of essential personnel. To the extent possible, sample changes are performed concurrently with liquid nitrogen (LN₂) tank exchanges and LN₂ storage dewar refills to allow continued remote data acquisition of long-running experiments.
3. Cryo-EM Research Center and Wright Lab support computers and servers are maintained to ensure remote access for data collection and analysis as usual.
4. All Cryo-EM Research Center and Wright Lab staff other than selected essential personnel (Elizabeth Wright, Eric Montemayor, Matt Larson, Bryan Sibert, Jae Yang) work from home.

5. Liz or Eric and Biochemistry 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.

1. Prioritization of LN₂ refills on the Krios and Arctica and LN₂ storage dewar (cell and cryo-EM grids) refills to minimize damage to the electron microscopes and potential time/cost to recover samples. Decisions will be made by Liz and Eric, with Matt and Jae to make decisions in the event that Liz and Eric are not able to.
2. LN₂ refills on the Krios and Arctica, LN₂ storage dewar refills, and water/power infrastructure maintained if possible.
3. Warm up microscopes and turn off non-essential components.
4. All other equipment shut down or in idle mode. Double check that all flames or heat sources are off and gas is turned off. Check that non-essential gas cylinder regulator valves are closed.
5. Check that all chemicals and unwanted material containers are capped and stored appropriately.
6. Liz or Eric and Biochemistry Department staff will do lab walk throughs to make sure everything is OK.
7. All Cryo-EM Research Center and Wright Lab staff work from home unless essential personnel are able to have access to campus to perform LN₂ refills and critical maintenance.

For this scenario, we also consider that a complete *wet laboratory 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?

8. All DNA to be stored at -20
9. All protein to be stored at -80
10. Shut down all computers and laboratory equipment except freezers
11. Autoclave and remove all biohazardous waste from laboratory
12. 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 – The cryo-EM spaces in the Wright lab and the Cryo-EM Research Center have oxygen sensors installed that when alarmed will immediately vent nitrogen or other gases that may have built up in the room to ensure a safe breathing environment.
2. Animal care – None.
3. Powered equipment that can be damaged by loss of power – the four electron microscopes and the data servers.

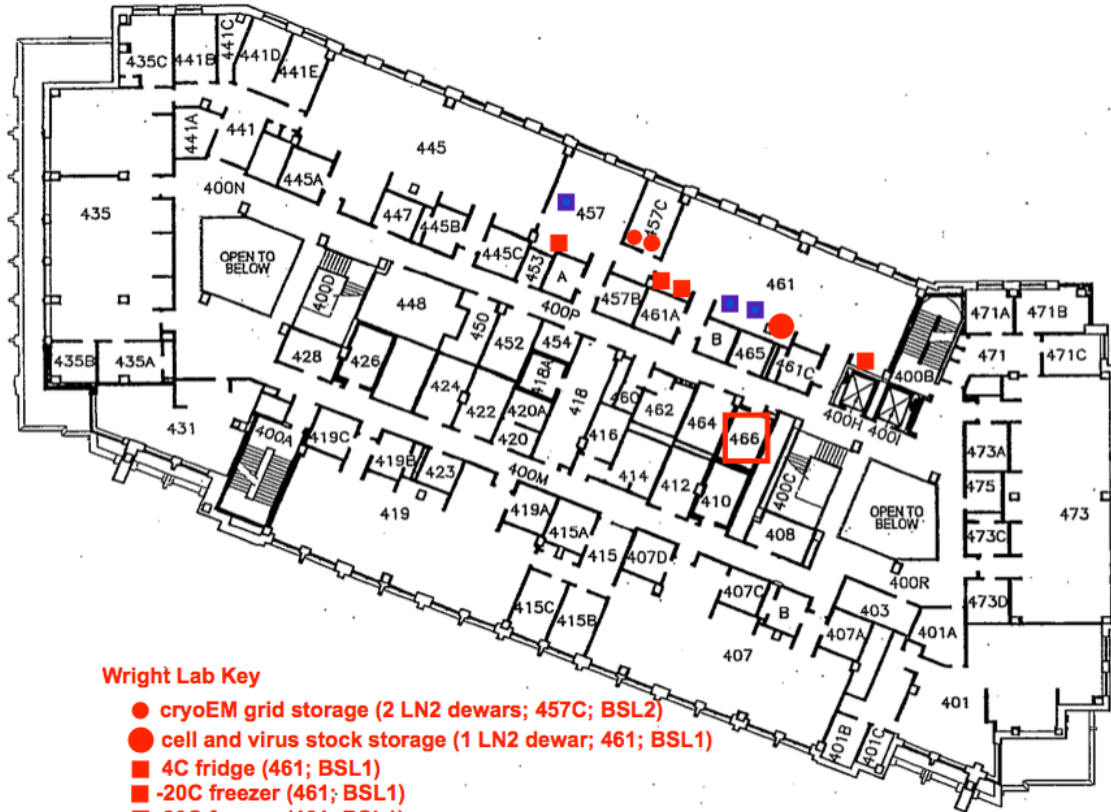
4. Water cooled equipment that can be damaged by loss of water – the four electron microscopes.
5. Loss of nitrogen purges – N/A.
6. Static tanks/containers of chemicals in hoods and loss of exhaust – N/A.
7. Vacuum systems pump and valve off – None that can be turned off in the Cryo-EM Research Center. All vacuums are off in the Wright lab.
8. Turn off UV lamps – None.
9. Ensure all chemical bottles are in storage cabinets and all bottles have secure lids.
10. Cap all solvent carboys
11. 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 must not be staffed, state that it will shut down to ensure no risk or harm. Provide name, email, and best emergency phone number for each.

1. Elizabeth Wright, PI, email: erwright2@wisc.edu
2. Eric Montemayor, EM facility manager, email: emontemayor@wisc.edu
3. Matt Larson, EM facility IT/sys admin, email: mrlarson2@wisc.edu
4. Bryan Sibert, Wright lab/EM facility postdoc, email: sibert@wisc.edu
5. Jae Yang, Wright lab postdoc, email: jyang525@wisc.edu

LOCATIONS OF LABORATORIES AND EQUIPMENT CRYO-EM RESEARCH CENTER AND WRIGHT LAB

Wright lab. Biochemistry Laboratories 461, 457, 452, 466.



Wright Lab Key

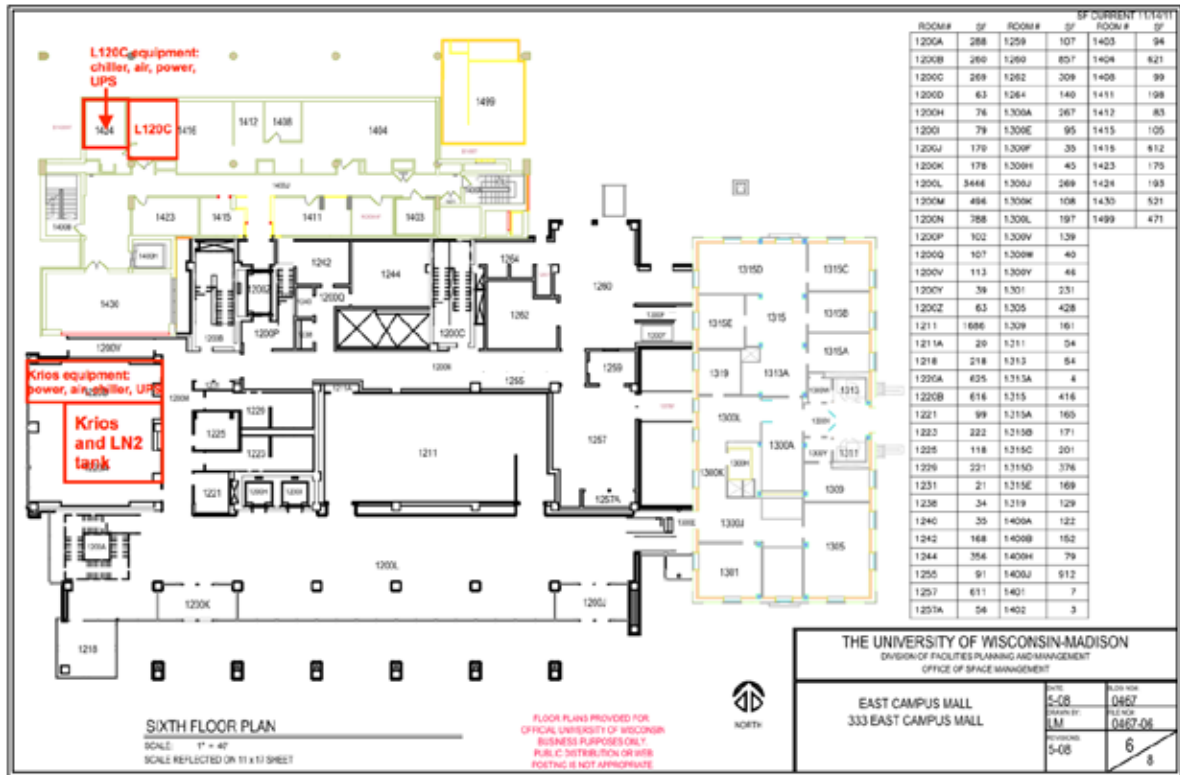
- cryoEM grid storage (2 LN2 dewars; 457C; BSL2)
- cell and virus stock storage (1 LN2 dewar; 461; BSL1)
- 4C fridge (461; BSL1)
- -20C freezer (461; BSL1)
- -80C freezer (461; BSL1)
- 4C fridge (457; BSL2)
- 4C cold room (466; BSL1)
- 1 LN2 delivery tank to fill lab dewars; 457; BSL2)
- 2 LN2 delivery tanks staged for EM (Krios and Arctica fills; 461; BSL1)

FOURTH FLOOR PLAN

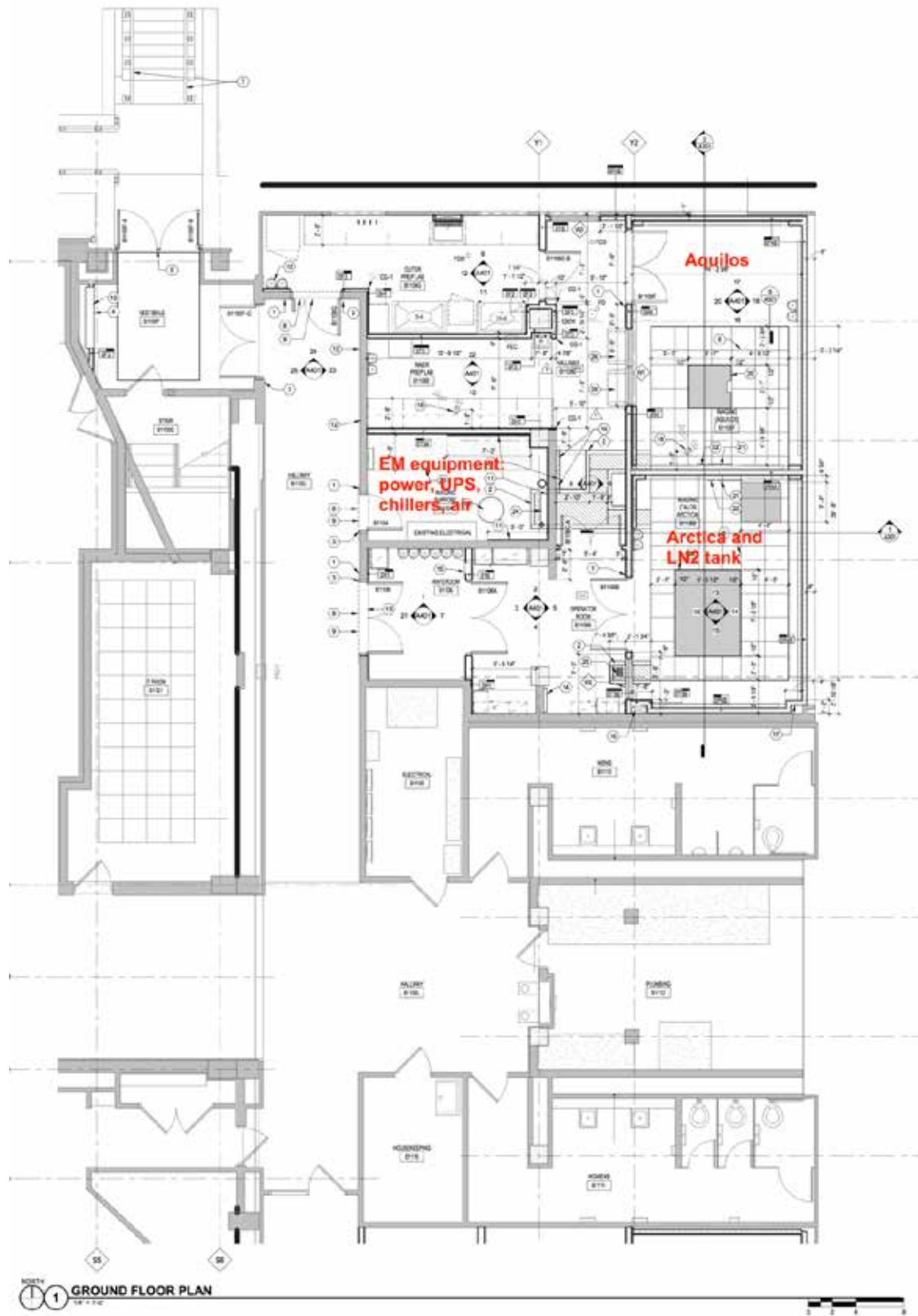
SCALE: 1" = 30'-0"

TURNER ASSOCIATES
 ARCHITECTS
 1000 UNIVERSITY AVENUE, SUITE 1000
 ANN ARBOR, MI 48106-1000
 TEL: 734.763.1000 FAX: 734.763.1001
 WWW.TURNERASSOCIATES.COM

Krios and Talos L120C microscopes and equipment chases. BSB1220a (Krios), BSB1220d (equipment room), 1414a (Talos L120C), unnamed (Talos L120C equipment room)



Arctica and Aquilos microscopes and equipment chase. Historic building B1106.



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.*