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Covid-19 Shutdown Re-Entry, Comprehensive Guide

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Re-Entering Labs Post COVID-19 Shutdown

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ABSTRACT

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This protocol outlines guidelines and procedures for Re-entry to Srivastava Lab from Covid-19 Shutdown.

Covid-19 Shutdown Re-Entry
Srivastava Lab
Summer 2020

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Covid-19 Shutdown Re-Entry
Srivastava Lab
Summer 2020

LabMember 1, LabMember 2, LabMember 3, LabMember 4, LabMember 5, LabMember 6, LabMember 7, LabMember 8, LabMember 9, Mansi Srivastava ***[names of lab members anonymized for privacy reasons]***

1. GUIDING PHILOSOPHY

Health and safety are the main guiding principles for our re-entry plan. The main objective is to maximize everyone's ability to work while minimizing the risk to individuals or the group. De-densification will require us to work in two "pods", and people in each pod will have to help those in the other pod to facilitate long-term experiments and animal care. Thus, team work will be crucial. Team work and the abidance to re-entry guidelines will require us to be excellent communicators. We will also be adaptable, adjusting to changing knowledge about the virus and the disease and accompanying regulatory changes.

2. THE RULES

Main directive	Subordinate guidelines	Unknowns
- Social distancing - 3 meters (9.8 feet) - Mandatory mask-wearing - Self reporting health status everyday - Reporting of a positive test	- Aerosols and droplets stay in air for 3 hours - These, when settled onto surfaces are called fomites, and can stay on surface for up to 72 hours (3 days)	- It is unlikely that the other teams/pod will be quarantined if one person tests positive

3. LABORATORY PROCEDURES

3.1 Procedures for creating ~10 feet of separation between people

Point persons: LabMember1, LabMember7

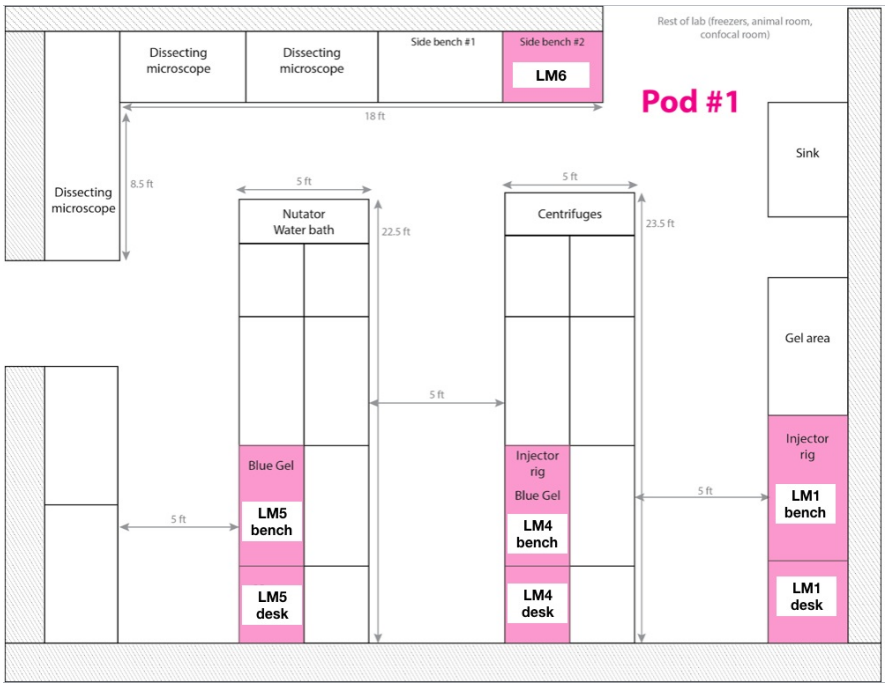
As a team we have decided that a system in which we create two teams of four members that work in non-overlapping periods of a month (a "Pod" system) is the safest way to re-enter the lab, in addition to being more convenient for the lab members due the nature of our experiments. Because at this point there are many unknowns about Covid-19, the Pod system allows us to minimize physical contact and exposure to aerosols and fomites across members of the lab and have longer periods of time to collect enough data to work remotely for the following weeks.

In the initial phase of lab re-entry, eight people (plus LabMember7) will have access to the lab. These eight people have been divided into two Pods of four members each to accomodate a lab layout that maximizes distance between members. The only members allowed in the lab at a given time are the four members of the Pod scheduled for that time period. No other lab members will be allowed to enter the lab at that time. To maintain the required distance between Pod members while working in the lab, we have identified specific primary working areas for each person, which are separated from one another by well over 9 feet (as indicated below in the **Lab member location charts)**. We have limited our space to one Pod member per bay, which allows us to adhere to the recommended social distancing guidelines while also having enough space to perform experiments. Each designated working area includes desk seating and a contiguous experimental bench that allows for the majority of lab work to be completed within their delineated space and limiting movement around the common spaces of the lab.

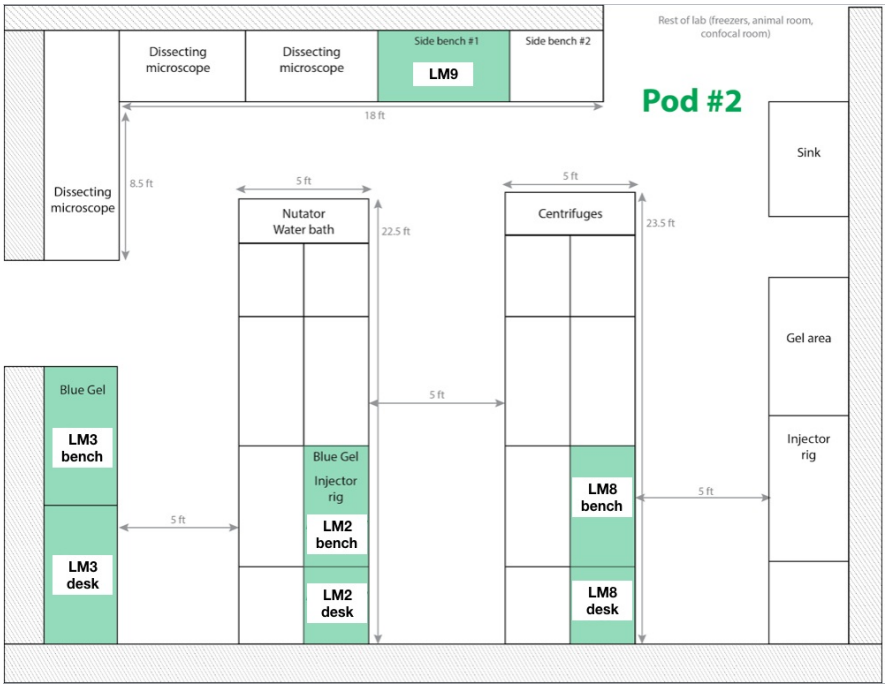
Lab Member Location Chart (Pod 1):

Pod 1: LabMember1, LabMember4, LabMember5 and LabMember6

Citation: Srivastava Lab (06/21/2020). Covid-19 Shutdown Re-Entry, Comprehensive Guide. https://dx.doi.org/10.17504/protocols.io.bhncj5aw



Lab Member Location Chart (Pod 2):
Pod 2: LabMember2, LabMember3, LabMember8 , LabMember9



As stated above in the **Guiding Philosophy**, teamwork and constant communication is crucial during the lab re-entering phase. Before the beginning of a Pod shift change, every lab member will plan their experiments dutifully to account for the use of common equipment and common areas during a Pod's scheduled time. Shared equipment includes: water bath, centrifuges, hood and dissecting scopes; use of this equipment will be monitored using a scheduling system outline below (See **3.3: Procedures for use of shared equipment and rooms**). We have ensured the shared equipment is located in regions with enough distance to designated working areas to ensure we adhere to social distancing guidelines (See below, **Equipment Location Chart**). Other common use instruments that can be re-allocated (microinjectors, gel rigs) have been relocated to the bays of lab members who most commonly use the equipment. All equipment and surfaces will be cleaned before and after use by the members of the Pod on a

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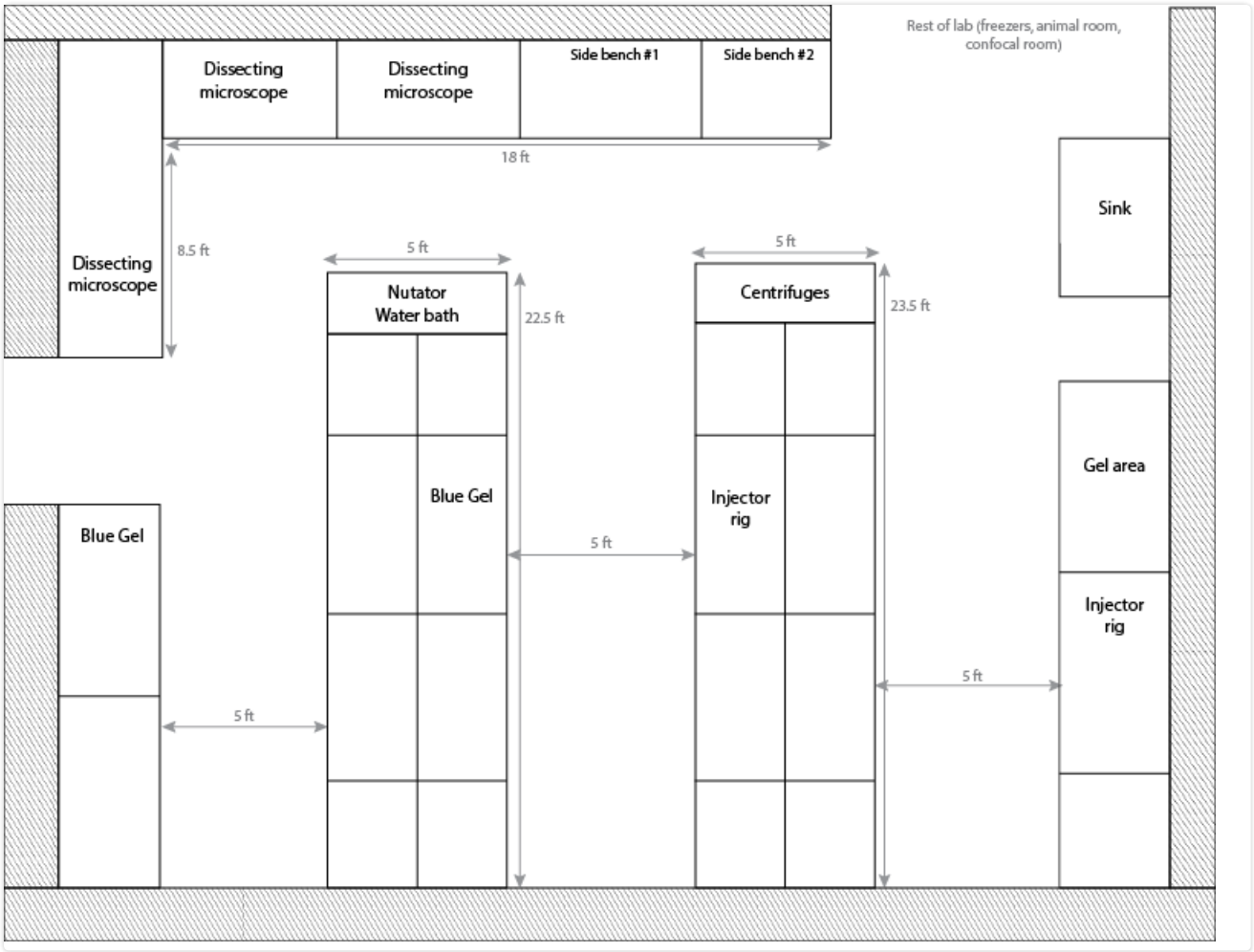
daily basis.

We have already created a system for use of the confocal microscope, and will continue to book confocal time using this system. The four members of a given Pod will schedule their confocal time at the beginning of the week to ensure that only one person is in the room at a time or during the day. A maximum of two people will be allowed to use the confocal room per day, with a two hour gap maintained between user sign-ups. To ensure safe use of this room by more than one Pod member each day, the confocal will be disinfected before and after by the respective users.

Equipment Location Chart:



Lunch Location Chart:

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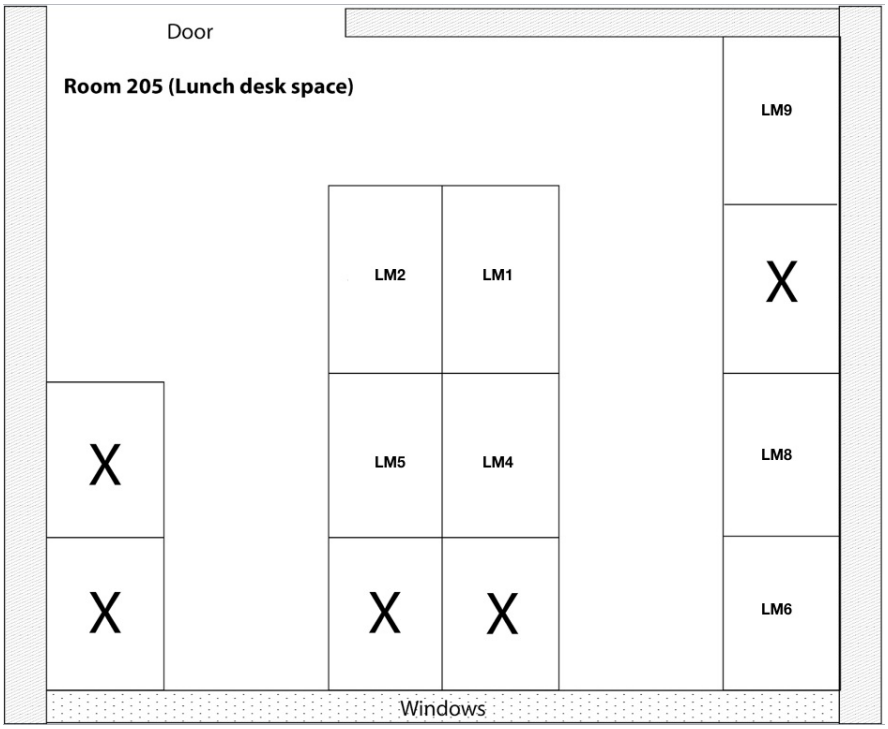

3.2 Procedures for minimizing aerosols and fomites (cleaning equipment and other surfaces)

Point persons: LabMember6 , LabMember8

Cleaning when your pod ends/begins

On the first and last day of your pod, a thorough sanitization should occur. Expect to enter the lab at the same time on the first day of the pod to distribute the labor of cleaning.

- Clean with bleach, water, and 70% ethanol
  - all touchable surfaces (keyboards, computer mice, eyepieces, focus knobs, door handles, refrigerator and incubator handles, sink faucet knobs, etc.)
  - all bench and desk spaces
  - microscopes and computers (including oculars)
  - all equipment (centrifuge, pcr machine, orbitals and shakers, gel rigs, etc)

Daily Cleaning

Each person is responsible for cleaning their workspace and any equipment before and after use.
Areas that have been designated as “High Touch” (incubator and freezer handles, doors, etc) will be listed and marked with colored lab tape and cleaned upon the entry and exit of the lab.
Clear lists will be posted throughout the lab to remind frequency and order of operations for cleaning. Instructional videos will be accessible to lab members on how to properly clean surfaces.
The schedule below entails who is responsible for cleaning “high touch” surfaces when they enter and exit lab that day.

(LM=LabMember)

Pod 1	*Monday*	*Tuesday*	*Wednesday*	*Thursday*	*Friday*
Week 1	LM5	LM4	LM1	LM6	LM4
Week 2	LM5	LM4	LM1	LM6	LM5

Pod 2	*Monday*	*Tuesday*	*Wednesday*	*Thursday*	*Friday*
Week 1	LM9	LM8	LM2	LM8 (LM3)	LM9
Week 2	LM9	LM8	LM2	LM8 (LM3)	LM8

Entering Lab

Make signs at door reminding people of the protocol

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- Hand sanitizer pump outside the door - use before unlocking door
- (leave jacket outside of lab?)
- Sanitize phone/any other object that will be in the workspace with 70% ethanol wipe
- Wash hands at the sink
  - turn on water
  - wash hands
  - dry hands with paper towel
  - turn off faucet with paper towel
- Wipe bench, pipettes, pens, etc with 70% ethanol
- If it is your "high touch" day, wipe all handles (incubator, freezer, door, etc) with 70% ethanol

Protocol: https://www.protocols.io/view/entering-the-lab-covid-19-shutdown-re-entry-srivas-bhndj5a6

Exiting Lab
- If it is your "high touch" day, wipe all handles (incubator, freezer, door, etc) with 70% ethanol
- Wipe bench piettes, etc with 70% ethanol
- Wipe phone/other objects in workspace (laptops, etc) with 70% ethanol
- Wash hands at the sink
  - turn on water
  - wash hands
  - dry hands with paper towel
  - turn off faucet with paper towel

Protocol: https://www.protocols.io/view/exiting-the-lab-covid-19-shutdown-re-entry-srivast-bhnej5be

Animal Room
- Wash hands before entering the animal room. If you choose to wear gloves, be cognizant not to touch sea water that will come in contact with the animals
- Turn on the HEPA filter
- wipe surfaces (bench, incubator handles, carboys, etc.) with 70% ethanol before and after working in the room
- keep 70% ethanol squirt bottles in a designated space to prevent confusion with ASW squirt bottles

Protocol: https://www.protocols.io/view/animal-room-covid-19-shutdown-re-entry-srivastava-bhnfj5bn

Cleaning Microscopes
based on: Recommendations for operating Core Facilities in a research environment during the SARS-CoV-2 pandemic:
- When using the microscope and adjacent computer, **always wear gloves**
- Wipe hard surfaces (knobs, body of scope, screens) with 70% ethanol before use
- Place a new piece of plastic wrap over oculars before use
  - cleaning oculars too frequently can cause the rubber to degrade
- When done, dispose of plastic wrap and wipe hard surfaces with 70% ethanol

Cleaning Equipment
- wipe surfaces with 70% ethanol before and after use (pcr machine, centrifuge, etc)

3.3 Procedures for use of shared equipment and rooms
Point Persons: LM4 and LM5

General Rules:
As a general rule, all equipment must be wiped down before and after use. Friendly, active communication is needed for this to work.

Confocal Room:
HEPA filters must be turned on at the start of the day, and off at the end of the day. When using this space, only 1 person is allowed in the room at a time. A google calendar will be implemented for the use of this room. People can sign up for however long they would like in a day. However, they must maintain 1 hour of time in between users. Knobs, eye pieces, desk space, keyboards, mouse, and all buttons must be wiped down before and after use.

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If you are the last person signed up for the day, then turn off the HEPA filter as well as all equipment that is still on.

Animal Room:
Just like in the confocal room, only 1 person is allowed in the animal room at a time. However, people may come in momentarily to grab boxes. To allow for two people to clean boxes at once, the desk in the hallway next to the 4-degree fridge will be a designated animal care area as well.

Dissecting scopes and RNAi injection rigs (main lab space):
We will be implementing a google calendar for the RNAi injection rigs, as well as a google calendar sheet for the dissecting scopes. The dissecting scopes will be used in a "sign out" system, where users will bring the scopes back to their benches for use. People who sign up for RNAi injection rigs must **also** sign up for the dissecting scopes. Just like all other equipment, everything must be wiped down before and after use.

Stereomicroscope (main lab space, attached to the camera):
Just like with all other equipment, a google calendar will be implemented for the stereomicroscope. Please wipe down the microscope **AND** computer before and after use.

Hyb Oven:
Only 1 person will be allowed at a time. If multiple people are doing in situs, please stagger your washes/transfers by 10 minutes through communication. Wipe down the door handles to the oven before and after use.

Fume hood:
Only 1 person will be allowed at a time. If someone before you had been using the hood for more than 15 minutes, please wait 20 minutes before using. A sign in/sign out sheet will be made available to determine how long it has been since the last person used it.

All other equipment/reagents:
Cabinets, Centrifuges, Gel rigs, PCR machines, pH meters, reagent bottles, water baths, nutators/orbitals, fridges/freezers **MUST** be wiped down at the beginning and the end of the day. Users **MUST WEAR GLOVES.** If your centrifuge spins take longer than a minute, please wait at your own bench rather than hover.
*****People may make their own aliquots of reagents and salts if they would like to.

3.4 Animal Care
Point person: LabMember9

As stated above in **Section 3.3**, only 1 person will be allowed to work in the animal care room at a given time. Another individual can come in to pick up animal boxes to clean at the desk located on the right of the 4C fridge outside of the animal care room to adhere to the social distancing guidelines. Since it is a shared space, all equipment and surfaces will need to be cleaned before and after use. Abiding by our **Guiding Philosophy**, teamwork and active communication is essential with animal care. With the "Pod" system set up, the lab group is divided into two separate groups and the animal care duties will be delegated.

Each lab member will have to clean and feed the animal boxes. The lab members in the Pod #1 will be assigned animal husbandry duties as LabMember9 will not be present during those 2 weeks. Everyone will be given detailed animal husbandry protocols prior to re-entry and LabMember9 will be available to assist or train virtually via Zoom, if needed. Responsibilities are delegated for Pod #1 and #2 (Tables 1-4).

Lab Member Animal Care Duties
Table 1 - Pod #1 Week 1

Monday	Tuesday	Wednesday	Thursday	Friday
- Artemia hatchery set-up (LM5) - Feed rotifer culture (LM5) - Clean Wild Type (WT) boxes (LM4)	- Clean/Feed WT boxes (LM1)Clean/Feed Transgenics (Tgs) (LM5) - Feed hatchlings (LM5)	- Artemia hatchery set-up (LM5) - Feed rotifer culture (LM5)	- Artemia hatchery set-up (LM5) - Clean/Feed WT boxes (LM4)	- Feed hatchlings (LM5) - Clean/Feed WT boxes (LM1) - Clean/Feed Tgs (LM5)

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Table 2 - Pod #1 Week 2

Monday	Tuesday	Wednesday	Thursday	Friday
- Artemia hatchery set-up (LM5) - Feed rotifer culture (LM5) - Clean Wild Type (WT) boxes (LM4)	- Clean/Feed WT boxes (LM1) - Clean/Feed Transgenics (Tgs) (LM5) - Feed hatchlings (LM5)	- Artemia hatchery set-up (LM5) - Feed rotifer culture (LM5) - 4/3X Artificial Salt Water (LM4)	- Artemia hatchery set-up (LM5) - Clean/Feed WT boxes (LM4)	- Feed hatchlings (LM5) - Clean/Feed WT boxes (LM1) - Clean/Feed Tgs(LM5) - 2X Artificial Salt Water (LM4)

Table 3 - Pod #2 Week 1

Monday	Tuesday	Wednesday	Thursday	Friday
- Artemia hatchery set-up (LM9) - Feed rotifer culture (LM9) - Clean Wild Type (WT) boxes (LM3 & LM2)	- Clean/Feed WT boxes (LM8) - Clean/Feed Transgenics (Tgs) (LM9) - Feed hatchlings (LM9)	- Feed rotifer culture (LM9) - Artemia hatchery set-up (LM9)	- Clean/Feed WT boxes (LM3 & LM2) - Artemia hatchery set-up (LM9)	- Feed hatchlings (LM9) - Clean/Feed WT boxes (LM8) - Clean/Feed Transgenics (Tgs) (LM9)

Table 4 - Pod #2 Week 2

Monday	Tuesday	Wednesday	Thursday	Friday
- Artemia hatchery set-up (LM9) - Feed rotifer culture (LM9) - Clean Wild Type (WT) boxes (LM3 & LM2)	- Clean/Feed WT boxes (LM8) - Clean/Feed Transgenics (Tgs) (LM9) - Feed hatchlings (LM9)	- Feed rotifer culture (LM9) - Artemia hatchery set-up (LM9) - 4/3X Artificial Salt Water (LM9)	- Clean/Feed WT boxes (LM3 & LM2) - Artemia hatchery set-up (LM9)	- Feed hatchlings (LM9) - Clean/Feed WT boxes (LM8) - Clean/Feed Transgenics (Tgs) (LM9) - 2X Artificial Salt Water (LM9)

3.5 Equipment acquisition

Point persons: LabMember2 and LabMember3

Gel imaging: For many applications, use a BlueGel instead (protocol available in protocol folder on lab server). Gel imager (Biorad Geldoc) is available for us to use in NWL B137.

Cutting bands: We have a UV box generously donated by the Kramer Lab ready to use.

Bacterial cultures: We have access to the 37 degree incubators in NWL B137. There is a shaker located inside of the incubators already.

Nucleic acid quantification: Nanodrop is available for us to use in NWL B137.

3.6 Use of building services

Garbage: awaiting instructions on this

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Glasswash: awaiting news on this

4. BUILDING AND CAMPUS PROCEDURES

Kitchen: At this time, there is a recommendation not to use microwaves or refrigerators. Bring your food in insulated containers or with cold packs.

Eating: All eight people will be assigned a desk in NW 205. As long as only one person is in the room at a time, you can use this desk for eating. The lunch room within the lab and the table outside of NW 205 will also be available for eating, but on a single-occupancy basis. Desk assignments are outlined in the diagram above (See "Lab Lunch Space"). All refrigerators, microwaves and other food preparation appliances will not be available for use. Individuals can bring a packed meal that should be stored with their personal belongings. Everyone should only be using their assigned seats and are required to clean the surface before and after use.

Restrooms: Our lab will be assigned a specific bathroom. All bathrooms will be single-occupancy. There will be paper towels and trash cans located outside of every restroom to allow individuals to open doors and dispose of them after leaving.

Obtaining masks: Our lab will receive an allotment of masks each month. Upon arrival, each lab member should obtain a new mask and dispose at the end of the day. Each person will be provided with ziploc bags to place their masks in while they are eating.

Parking: Parking in science area garages will be free till July.

5. ADHERENCE TO PROCEDURES

Ensuring that everyone follows the rules is important to all of us. However, enforcing this can be challenging - people don't want to feel that they are being scrutinized by their co-workers and people don't want to feel that they are "snitching" on their co-workers. To address this, we agreed upon four ideas:

1. We will create instructional videos for cleaning procedures etc. so everyone has access to clear information about what is expected
2. We will trust that everyone is doing their best to follow the rules
3. Those who feel comfortable will directly reach out to a lab member who is showing a pattern of disregarding the rules
4. Alternatively, or in addition, lab members will use this form to alert the PI.

6. OUR COMMUNITY AGREEMENT

We agree that ensuring everyone's health and safety is a primary objective as we return to lab work, and we understand that all new rules and guidelines are in service of this goal.

We agree to follow all Harvard guidance on procedures for access to campus and lab, including the wearing of masks at all times and reporting our health status every day prior to entry into the building.

We agree to follow all laboratory procedures for the Srivastava Lab outlined in this document.

We understand that rules and procedures may be altered as new information comes to light.

We will communicate effectively to facilitate team work. We will need help from our labmates and we will help each other to be able to finish experiments. We will also collectively take care of the lab's entire worm colony.

We will remember that these rules ultimately help our science!

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