

APPLIED PHYSIOLOGY COVID-19 LAB SAFETY PLAN**Maximum 50% Capacity (1 person per 200ft²): 19 people****(Main Lab: 15 people
(Biochem Lab: 4)**

Lab Section	Max Capacity	Researchers Allowed in Space at One Time	Participants Allowed in Space at One Time
Table Space			
BodPod Room	2	1	1
EKG/Metabolic Room	2	1	1
Bike/Cardiorespiratory Space	3	2	1
DXA/Blood Draw Space	3	2	1
Cardiometabolic Space	3	2	1
Biochem Lab	4 (2 in front; 2 in back)	4	0
*Office Space	*3 (currently this cannot be used as permanent office space. It can be used as flex space while in the lab)		

*subject to change

Key Requirements before entering the lab (see also EXSS documents for resuming research)

- 1) Complete UNC EHS safety training (<https://ehs.unc.edu/infectious-diseases/coronavirus/>)
- 2) Study safety plan and/or piloting safety plan must be completed and approved (this must be sent to the lab director of all labs being used; study-specific plan must also be approved through EXSS qualtrics survey: https://unc.az1.qualtrics.com/jfe/form/SV_0qWd2X9b9vTdRFX).
- 3) Complete APL/HPC qualtrics survey each day prior to coming to campus. [APL COVID SCREEN SURVEY](#) (see additional guidance below if any symptoms or close contact has occurred)
- 4) Reserve the space(s) in which you will be working on the APL/HPC google calendars (details below for log in information). Include the space and initials of who will be using the space.
- 5) Be sure all of your APL standard training is up to date. You can check here: <https://ehs.cloudapps.unc.edu/EHS/>
- 6) If you have any questions or concerns, please do not hesitate to reach out to Dr. Smith-Ryan (abbiesmith@unc.edu; 515-681-5842) and/or your PI.

We realize this is a stressful time, but with constant communication and transparency, we can maintain a safe research environment. Please check back regularly for updates to this plan as the COVID situation evolves. Please also be familiar with the contents of the remainder of the document.

Research Space

The Applied Physiology Lab features a 3,850 ft² space. This space consists of large open spaces. This facility is shared by 4 faculty members, with 1 faculty member's use restricted only to the biochemistry space. Although this is a shared space, use is somewhat separated by partial walls, partitions, and curtains. These flexible barriers will be used to further institute social distancing and optimal traffic flow.

Social Distancing for Research Personnel

All research personnel must maintain a 6-foot distance between other research personnel and research participants at all times. This includes during data analysis, data collection, conversation and moving within the laboratory space and within Fetzer Hall (See prescribed pathways of movement within the laboratories). All efforts should be made not to hand objects to other researchers or research participants. Objects can be placed on a surface for others to approach and pick up. Laboratory equipment setup must be configured so

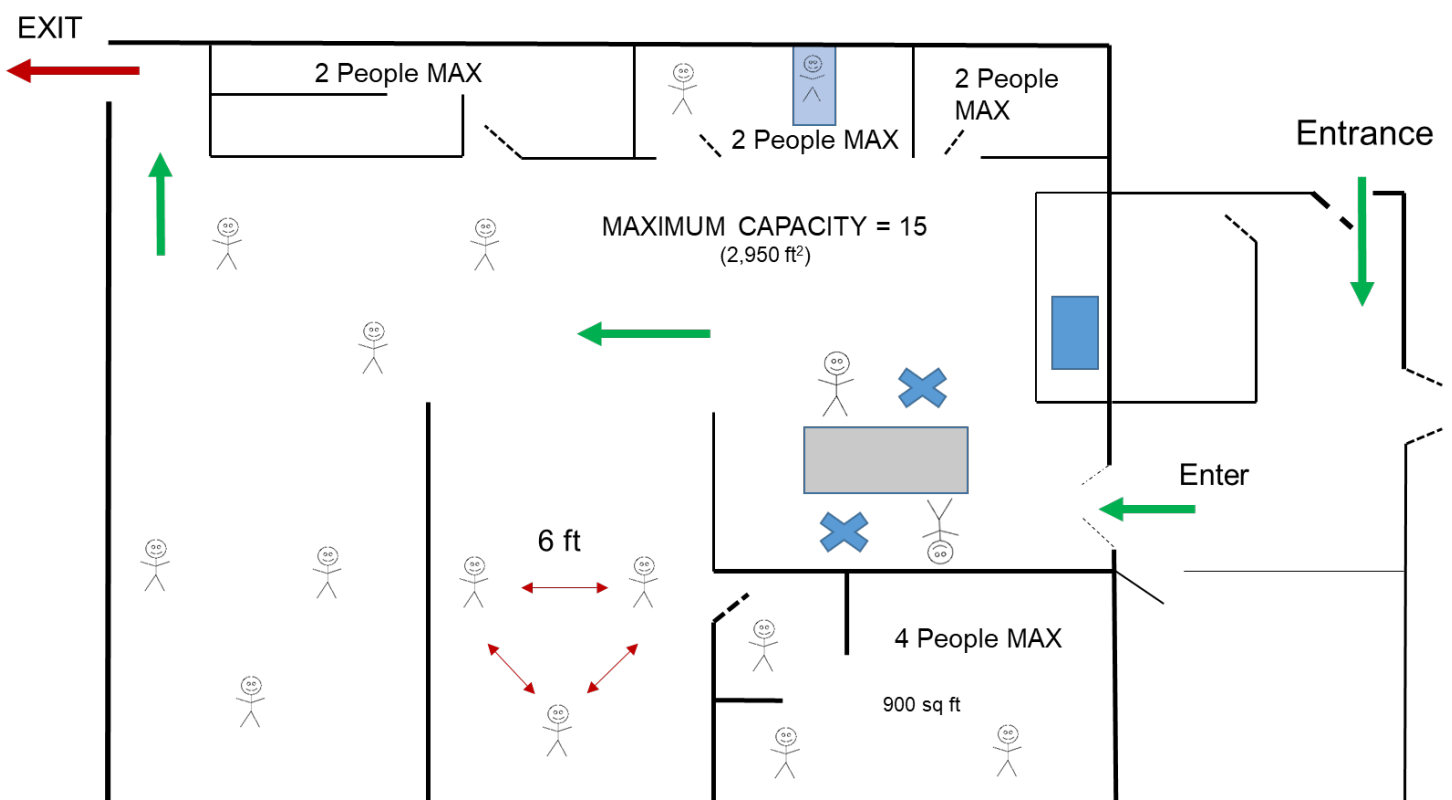
that individuals can collect data 6 feet from the research participant. Normal office desk set-up in the laboratory is not currently allowed; work-from-home is encouraged when possible.

Plans for Social Distancing:

- All equipment and space will be reserved on a first come first serve basis using online laboratory calendars (previously in place).
- In addition to space and equipment, initials of the research personnel who will be working on the equipment must also be listed and must follow the social distancing rules outlined for the space below.
- Reservations should be made with a 30 minute buffer prior to and after the session to ensure one way traffic into and out of the laboratory.
 - o For example, if a subject is scheduled for 10am-12pm; the reservation should be for 9:30am-12:30pm.
 - o Thus, only the research team assigned to that time slot will enter and exit the lab during those times.
 - o If equipment use is short (i.e. DXA, BIA, etc), then a 15 minute window is sufficient.
- Due to the APL space, there may be 2 data collection sessions going on at one time. If this is the case, they cannot start at the same time (i.e. cannot have an overlapping start time) and exiting must occur through the back door of the APL (see diagram).
- Small rooms are limited to 2 people max (i.e. one research personnel, one subject).

Training of Research Personnel: In the case that there is a need to train research personnel on laboratory methods, 3 research personnel can occupy designated spaces in APL. All previous social distancing guidelines apply.

Visitors: A single visitor is allowed in addition to the appropriate number of research personnel and the research participants during data collection, and must stay in the main area of the APL. These visitors may consist of the parents or companions of the research participants. Visitors must undergo the same screening as the research participants and observe the PPE and social distancing guidelines.



Situations & Conditions that Require Close Proximity

Human interaction and direct contact will be required for equipment and to perform research-related procedures. There should never be more than 1 research personnel violating the 6-foot distancing guidelines even for research purposes at one time. Below is a list of situations and conditions that require close proximity during data collection:

- 1) Equipment application, maintenance and removal during data collection.
 - a. Cardiac ECG electrode placement, heart rate monitors
 - i. Maintenance of cardiac and blood flow signals
 - b. Respiratory: face mask, hood, and tube for indirect calorimetry
 - i. Maximal exercise tests
 - ii. Some equipment may need to be continually monitored during collection:
 1. Maintenance of metabolic cart
 2. Alter speed of Treadmill
 - c. Body Composition: electrodes, weight, circumferences, ultrasound
 - d. Bodily Fluid collection: some protocols may require the collection of bodily fluids including saliva, urine, and blood samples.
 - i. Standard Universal precautions will be followed for these
 - e. Collection of subjective measurements involves periodic presentation of visual scales. This task involves the researcher presenting the scale to participant while in close proximity.
- 2) Medical or Safety Concerns During Measurement
 - a. If the participant experiences an adverse event or situation related to exercising or fluid collection that threatens the participant's health and safety, researchers may be required to be within close proximity to ensure safety. Examples of these include physical support of a subject who is dizzy or may fall during exercise or in the event of an emergency, perform an initial assessment of the patient, activating medical services and if needed, perform basic first aid and CPR within the scope of their training and certifications.
- 3) Data collection in a small room
 - a. Measurement of resting metabolic rate and BodPod measurements are in confined spaces.
 - b. Importantly, research subjects are covered by a hood for resting metabolic rate and in the BodPod, thus respiratory fluids will be limited.
 - c. Subjects will be asked to wear their mask until they are placed under the hood or in the bodpod.

Situations & Conditions that Prohibit a Mask

Due to the physiological implications of a mask on oxygen delivery, there are a few conditions in which the subject will not be able to wear a mask. Below is a list of conditions and practices in which a mask may not be worn, and required precautions.

- 1) During exercise
 - a. A subject will be required to wear their mask just prior to beginning the exercise.
 - b. During this time, all research personnel will don a face shield and will remain 6 feet away if possible.
 - i. As noted above, for the safety of participants, this distance may not be appropriate.
 - ii. In the case of possible fluid contact during exercise (i.e. sweat, saliva); all research personnel will also wear a laboratory coat. This lab coat can be reworn that day by the same researcher, but must be laundered daily.
 - c. The subject will be asked to replace their face mask once their breathing rate returns to normal.
- 2) During resting metabolic rate testing
 - a. A subject will be placed under a hood or provided a mouthpiece, both of which cover respiratory secretions. Participant will wear a facemask immediately prior to and following the measurement.
- 3) During some body composition testing

- a. When using the BodPod a facemask would alter the readings. Just prior to stepping into the bodpod, subjects will remove facemask. Upon immediate exit from the pod, subjects will be asked to replace their mask.
 - b. If the mask contains any metal, it will be removed during DXA testing.
 - i. Research personnel will be more than 6 ft away during this testing. Subjects will reposition their mask once the scanner has finished.
- 4) During salivary sample measurement
- a. Subject's facemask will be removed only during the collection of saliva and repositioned once saliva has been collection.
 - i. Hands of the subject will be washed prior to and after this process.

Sanitization Practices for the Applied Physiology Laboratory

Cleaning and Disinfecting Equipment

- The laboratory space and equipment will be carefully cleaned and disinfected prior to and following data collection sessions.
- Checklists for each piece of equipment will be adhered to/placed next to equipment, with initials required for each cleaning before (check required) and after (check required) use.
- All researchers and subjects will be required to wash their hands during the following situations (but not limited to):
 - i. Before and immediately following data collection sessions
 - ii. Before and after food consumption
 - iii. After using the restroom
 - iv. Face touching or any situations where contact occurs without appropriate PPE
- Glove disposal and/or any hazardous waste will follow Environmental Health and Safety regulations for biological and chemical waste disposal policies.
 - o When soiled with bodily fluids, gloves and masks must be disposed in red biohazard bins.
 - o If not soiled, but used in contact with a subject, gloves will be disposed in other designated bins.
 - o Masks will be reused for 2 days (see notes below).

Cleaning and Disinfecting the Lab and High Touch Surfaces

- Shared surfaces of the lab will be cleaned 3 times per day. (Gloves will be worn nearly all day, so this is extra precaution).
 - o A checklist will be provided for the cleaning the following surfaces:
 - Entrances and exits
 - Door handles and cabinet handles
 - Desktops, benchtops, work surfaces
 - Chair backs and armrests
 - Hand tools (pipettes; spray bottles)
 - Light switches
 - Pens/Writing utensils
 - Sink handles
 - Keyboards, mice

Before arriving to campus:

Symptoms Monitoring Check: **Please complete the online survey prior to coming to campus:**

[APL COVID Screening Survey](#)



- All research faculty, employees, and trainees must conduct a daily review of COVID-19 symptoms before returning to work. At this time, those symptoms include:
 - New muscle aches not related to another medical condition or another specific activity (i.e. exercise).
 - Feeling like you may have a temperature of greater than 100.0°F? (If so, take temperature).
 - Sore throat not related to another medical condition (i.e. allergies)
 - New or worsening cough that is not related to another medical condition
 - Shortness of breath that is not attributable to another medical condition
 - Recent (<5 days) loss of smell and taste
 - New onset of vomiting or diarrhea not related to another medical condition
 - Repeated shaking chills not related to another medical condition
- Anyone who is experiencing any of the above symptom(s) must not come to campus.
- Persons exhibiting COVID-19 symptoms should contact their health care provider and act upon their instructions. UNC employees may also contact the University Employee Occupation Health Clinic (919-966-9119), and UNC students and post docs may contact UNC Campus Health (919-966-2281).
 - Individuals should notify their direct supervisor.**
- Any individual who has tested positive for COVID-19, who has been referred for testing or who is awaiting test results, may not come to work on campus for any reason until approved to do so by Employee Occupational Health or Campus Health.

Research Personnel Arrival on Campus

- Anyone on campus must wear a face mask, to campus, you will wear a personal face mask.
- Upon arrival to the lab, you will be provided with a University supplied face mask.
 - This face mask will last 2 days. Please store in appropriate paper bag.
 - There are important and specific procedures for using and re-using masks to avoid contamination.
 - 1) MUST WASH HANDS or use hand sanitizer both before and after putting on your mask
 - 2) Loop elastic over your ears. Pull it down so it is covering under your chin; secure it to your face by pinching over your nose. Be sure it's on secure.
 - i. [After securing mask, put on gloves, if interacting with any other human (i.e. subjects, students).
 - ii. Remove gloves.
 - iii. Wash hands
 - 3) Before removing the mask, clean your hands.
 - 4) Remove the mask using the ear loops
 - 5) Inspect to be sure it can be reused. Has it been compromised? Is it wet? Visibly soiled? If it is, dispose in the appropriately labeled bins (not the trash or biohazard containers). If the mask is ok to reuse, follow the next steps.
 - 6) Fold the mask in half (lengthwise or widthwise), so the outside surfaces are touching each other. Place it carefully into your clear storage bag. Seal the bag if you're using paper; if using a plastic baggie, leave it open.
 - 7) Perform hand hygiene.
 - If for some reason you notice supplies are getting low, please inform Dr. Smith-Ryan

*Must remove mask/gloves for: eating, restroom, in between new subjects. Masks can be re-used, new gloves are required.

Participant Arriving at Laboratory:

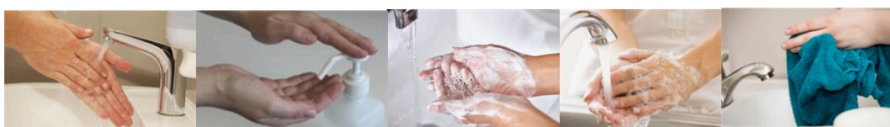
- All research subjects must enter the building and laboratories at designated entry points (outside in parking lot, near back entrance of Fetzer).
- All screening procedures should be completed prior to entering the building.
 - You should bring a thermometer and appropriate checklist to meet the subject to screen, prior to entering the building.
- Proper PPE will be worn prior to entering the building and laboratories by all.
- Movement through the building and laboratory spaces should maintain proper designated flow to allow for 6 feet of social distancing.
- Research staff must escort the participant out of the building in accordance with the EXSS COVID 19 Human Research Policies.
- For Human Subjects Research Procedures, see **EXSS COVID 19 Human Research Policies**
 - **Note new policy (9.25.20: If a participant has tested positive for COVID-19, they must meet the following criteria to participate in research:**
 - **1) Must be asymptomatic for at least 14 days prior to enrolling**
 - **2) or Have confirmation of a negative COVID-19 test**
 - **3) Must be screened and cleared by a physician if the study involves vigorous exercise**
 - ***If this does not occur, the participant is not eligible to safely participate**

Personal Protective Equipment

- In addition to masks and gloves, protective eyewear (not prescription glasses) must be worn when possible exposure to bodily fluids (i.e. sweat, blood, saliva) may occur.
- Wearing a laboratory coat is also recommended.

Situations and Conditions for PPE Removal in the Laboratory Space

All required tasks and administrative duties completed within the APL can and therefore will be completed while wearing all aforementioned PPE. The periodic consumption of food and/or fluids will involve the removal of the mask for brief moments when necessary. If the removal of an appropriate mask or face covering is required for an elongated period of time, then the staff member should be relocated to an area consisting of lower personnel density (i.e. outside or a space by themselves) until re-application of the mask.



Wet your hands with clean, running water (warm or cold), turn off the tap, and apply soap.

Lather your hands by rubbing them together with the soap. Lather the backs of your hands, between your fingers, and under your nails.

Scrub your hands for at least 20 seconds. Need a timer? Hum the "Happy Birthday" song from beginning to end twice.

Rinse your hands well under clean, running water.

Dry your hands using a clean towel or air dry them.



Donning CPE

- Wash hands for 20 seconds before donning mask.
- Properly don CPE by holding mask in hand against your face (positioned over your nose and under your chin), then pull straps around your ears.
- If your position interacts regularly with the general public (i.e. student interfacing), then don gloves.
- If gloves are worn, remove first.
- Then wash hands for 20 seconds before touching your mask to remove
 - to eat or drink
 - use the restroom
 - or end of work time

2. MASK OR RESPIRATOR

- Secure ties or elastic bands at middle of head and neck
- Fit flexible band to nose bridge
- Fit snug to face and below chin
- Fit-check respirator



HOW TO DON GLOVES:



USE SAFE WORK PRACTICES TO PROTECT YOURSELF AND LIMIT THE SPREAD OF CONTAMINATION

- Keep hands away from face
- Limit surfaces touched
- Change gloves when torn or heavily contaminated
- Perform hand hygiene



Applied Physiology Lab Online Scheduling

- 1) Go to www.google.com
- 2) Click on "sign in" link in top right hand corner
- 3) Enter username: apl.unc@gmail.com
- 4) Enter password: tarheel1!

For scheduling you must identify:

- Date/Time
- Equipment that will be used
- Initials/name of the person reserving
- Location (when necessary) – i.e. resting/phlebotomy room, tables, biochem area

If there is a conflict or someone has already scheduled when you need a piece of equipment, I suggest you first communicate with who is on the schedule to see if you can collaborate/make it work. If that does not work, please contact Dr. Smith-Ryan and she can manually give you access to the calendar.