Penn COVID-19 Training For Lab Researchers

EHRS COVID-19 Guidance
WHAT IS COVID 19

- Coronavirus disease 2019, or COVID-19, is a respiratory illness.
- Signs & Symptoms may include fever (>100.3F), chills, muscle pain, cough, shortness of breath, sore throat, headaches, and sudden loss of taste and smell.
- Symptoms can appear 2-14 days after exposure to the virus that causes COVID-19.
- COVID-19 is caused by the virus SARS-CoV-2.
• Between people who are in close contact with one another (within about 6 feet).
• Through respiratory droplets produced when an infected person coughs, sneezes or talks.
• These droplets can land in the mouths or noses of people who are nearby or possibly be inhaled into the lungs.
• It may be possible that a person can get COVID-19 by touching a surface or object that has the virus on it and then touching their own mouth, nose, or possibly their eyes. This is not thought to be the main way the virus spreads.
• COVID-19 can be spread by people 1-3 days before symptoms appear.

Image: CDC.gov
HOW TO PREVENT VIRUS SPREAD

- Keep physical distancing (6 ft)
- Cover your mouth when you cough or sneeze
- Avoid touching your eyes, nose and mouth
- When in public wear a cloth face covering, and when in lab wear a Penn supplied mask that covers your nose and mouth
- Wash your hands with soap and water frequently
- Stay home if you are sick

PennEHRS
Environmental Health & Radiation Safety
If you have symptoms of COVID-19: a temperature exceeding 100.3°F/37.8°C taken with a household thermometer, cough, shortness of breath, chills, shivering, headache, muscle ache/weakness, sore throat, or sudden loss of taste/smell (CDC COVID-19 Symptoms), you must notify your PI/Lab Manager and consult with a healthcare provider.

You have tested positive for COVID-19

Report confirmed or suspected COVID-19 cases to EHRS for contact tracing
* EHRS 215-898-4453 (24/7)
Anyone in your household has been diagnosed with COVID-19, or has demonstrated symptoms within the last 14 days.

You have had close contact (within 6 ft for ≥10 min) outside your home with someone diagnosed with COVID-19 or who has symptoms of COVID-19 within the last 14 days.

Seek emergency assistance if you experience:
* Trouble breathing
* Persistent pain or pressure in chest
* Confusion or inability to arouse
* Bluish lips or face
GENERAL PRACTICES
PHYSICAL DISTANCING

- Stay at least 6 feet away from others at all times
- Each lab should determine how physical distancing will be maintained within their unique laboratory layout.
- If lab members do not have work that requires them to be in the lab, they should not come to the lab (unless they are needed as a safety buddy to prevent someone else from working alone).

Keeping space between you and others is one of the best tools we have to avoid being exposed.

Image: CDC.gov
PHYSICAL DISTANCING

- Ensure adequate separation between workstations.
- Use virtual meetings and phone calls rather than in-person meetings.
- Remote work arrangements should be continued whenever possible to limit the number of people in shared office spaces.
PHYSICAL DISTANCING

- Stagger break times and limit the number of people in breakrooms to allow for 6-foot physical distancing.
- Arrange seating to be forward facing instead of employees facing each other.
- Remove chairs to limit seating capacity.

Physical distancing must be maintained in breakrooms.

Image: https://www.123rf.com/
PHYSICAL DISTANCING

- Encourage virtual meetings and phone calls instead of in-person meetings.
- Limit the number of people in conference rooms and common areas to allow for 6-foot physical distancing.
- If in-person meetings are required, limit attendance to less than 10 people and maintain 6-foot physical distancing.

Images: https://www.istockphoto.com/
PHYSICAL DISTANCING

- Keep 6 feet away in areas of congregation, such as lobbies, vestibules, and shared equipment.
- Avoid sharing phones, desks, offices, tools & equipment.

If sharing of equipment cannot be avoided, it must be cleaned and disinfected before and after use.

Disinfection protocols are provided later in this training.
HAND HYGIENE

• Wash your hands at least once per hour with soap and water for at least 20 seconds especially after you have been in a public place, or after blowing your nose, coughing, or sneezing.

• If soap and water are not readily available, use a hand sanitizer that contains at least 60% alcohol. Cover all surfaces of your hands and rub them together until they feel dry.

• Avoid touching your eyes, nose, and mouth with unwashed hands.
In accordance with CDC recommendations, everyone entering Penn buildings, regardless of their role, must follow Universal Mask precautions beginning April 13, 2020.

Masks are intended to limit the risk of the wearer exposing others to undetected illnesses or infections, including COVID-19. Masks do not provide the wearer with extra protection.

Social distancing must be maintained even while wearing a mask.
<table>
<thead>
<tr>
<th>Cloth Face Covering</th>
<th>Surgical &amp; Dental Face Masks</th>
<th>Respirators (N95, N99, N100)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercially made or homemade 2-ply cotton face coverings help people who may be unaware that they have the virus from transmitting it to others.</td>
<td>Loose-fitting, disposable masks that cover the nose and mouth prevent droplets, splashes, sprays or splatter from being spread by the person wearing them.</td>
<td>Tight-fitting, NIOSH-approved respirators are in limited supply and should be reserved for healthcare staff.</td>
</tr>
</tbody>
</table>

More information available on the EHRS website at [Face Coverings, Masks and Respirators Compared](#)
• Some facemasks have one-way exhalation valves. The exhalation valve allows moisture in the mask to be exhaled, making them more comfortable to wear.

• An exhalation valve will release respiratory droplets.

• This facemask will not protect people from exposure to respiratory droplets expelled when the wearer talks, coughs, or sneezes.

• Facemasks with exhalation valves ARE NOT ALLOWED TO BE WORN ON CAMPUS OR IN LAB.
Universal Mask Precautions must also be used in laboratories.

For your safety, use these precautions:

- Avoid contaminating your mask. Touch it only with un-gloved, washed hands.
- Keep a spare mask available in case yours becomes contaminated, or know where to obtain a spare mask.
- Store your mask properly. Discard and replace contaminated surgical masks.
- Use best lab hygiene practices to avoid splashes, contaminated surfaces, and release of chemical vapors into the lab.

• Use gloves to protect you from hazards in the laboratory according to your normal lab procedures and practices.

• Do not wear gloves outside of the laboratory, in common areas of the building, or in shared facilities unless gloves are required by the facility’s policies.

• Focus on frequent hand washing, not touching your face, and disinfecting shared items and high-touch areas regularly.

• You may see workers who perform tasks that involve frequent contact with high touch areas, e.g., housekeepers, security, mail and delivery personnel wearing gloves.
DONNING AND DOFFING PERSONAL PROTECTIVE EQUIPMENT

**DONNING** refers to putting on personal protective equipment.

**DOFFING** refers to removing personal protective equipment.

Images CDC.gov
DONNING A FACEMASK

1. Wash hands with soap and water or apply hand sanitizer before donning a mask.
2. Place mask on face with ear loops over ears or ties behind head.
3. The mask should cover your nose and mouth with no gaps between the mask and your face.
4. Wash hands with soap and water or apply hand sanitizer after placing mask.
5. Avoid touching the mask while wearing it.

If reusing a facemask, remove from bag using straps.
**DOFFING A FACEMASK**

- Facemasks should only be removed temporarily when eating and at the end of the day.
- You should reuse a mask until it becomes torn, visibly soiled or hard to breathe through, or if you have contact with an infectious person.
- Cloth masks should be laundered at home using household supplies.

1. Wash hands with soap and water or apply hand sanitizer before taking off a mask.
2. Try to only touch straps when removing facemask and placing in bag for disposal or reuse.
3. Carefully fold flat mask or cloth mask so that outer surface is held inward against itself and place in paper bag labeled with your name.
4. Place other facemask styles in labeled bag with outer surface contacting bag.
5. Wash hands with soap and water or apply hand sanitizer.

Images CDC.gov and CHOP
DONNING GLOVES

1. Wash hands with soap and water or apply hand sanitizer before donning gloves.
2. Choose correct size glove.
3. Don glove.
4. Check for holes or defects.
5. Avoid touching face or phone while wearing gloves.
DOFFING GLOVES

Grasp the outside edge near your wrist.

Peel away from your hand, turning the glove inside-out.

Hold in opposite gloved hand.

Slide ungloved finger under the wrist of the remaining glove.

Turn second glove inside out while pulling away, leaving first glove inside.

Wash hands with soap and water or apply hand sanitizer.

Dispose of worn gloves in the trash.
EHRS Guidelines for Returning to the Lab
The PI or Lab Safety Coordinator must complete the Resumption of Research Notification webform on the EHRS website.

Before submitting this form, please confirm you have approval from your department to reoccupy the lab.

When we receive your form submission, we will update your lab's "emergency shutdown status" in BioRAFT. We will also request that the floor of your building receives enhanced housekeeping service.
• Research involving COVID-19 patient specimens is subject to enhanced biosafety oversight by EHRS (Guidance for COVID-19 Research Projects)

• For projects using patient specimens not covered by the above guidance, a site-specific risk assessment is required.

• An appropriate biosafety containment level (BSL) will be determined by a biosafety officer.

• Institutional Biosafety Committee (IBC) review and approval is required prior to initiating work with infectious SARS-CoV-2 virus (growth, isolation, manipulation, purification).
PRE-OCCUPANCY CHECKLIST:

PHYSICAL CONDITIONS

- Confirm normal operation & current certification of key safety equipment (fume hoods, biosafety cabinets, etc.). Confirm correct start-up procedures for critical equipment.

- Ensure safety showers are not obstructed and eyewashes are functioning properly. Flush all eyewashes until water runs clear.

- Check for leaks or unusual physical conditions in the lab that need to be addressed.

- Check expiration dates and integrity of chemical containers. Contact EHRS to request pick-up of expired chemicals or damaged containers.
PRE-OCCUPANCY CHECKLIST:

SUPPLIES

- Check for adequate waste-collection supplies.
- Confirm adequate quantity of personal protective equipment.
- Confirm adequate supply of soap and paper towels for hand washing and that disinfectant will be available for cleaning shared equipment and work areas.
- Ensure radioactive material packages arrive on time and are checked in properly.
- Determine availability of support services and deliveries (such as compressed gases, reagents, dry ice).
PRE-OCCUPANCY CHECKLIST:

ANTICIPATING DELAYS

- Response and repairs.
- Possibility of limited personal protective equipment and other consumable supplies.
- Operations of cores, sample/specimen providers, and collaborators.
- Delays in reaching your lab in high-rise buildings. Physical distancing must be maintained in elevators.
**SHIFT ROTATION**

**PROCEDURES**

- All lab members cannot be present at the same time
- Coordinate with other lab groups to be effective
- Check with your School or Department regarding physical distancing requirements in elevators
- Split the lab group into teams that work different shifts or alternating days
- Plan experiments prior to coming to lab
- Do not come to lab if you do not have work that requires your presence
SHIFT ROTATION CONSIDERATIONS

- Can lab members be scheduled so that immediately adjacent workstations are not in use at the same time?
- Which lab members will require close supervision and advisement while they are doing their lab work?
- Make documentation of specialized equipment or lab techniques available to other lab members.
- Share contact information of all group members. BioRAFT can be used for messaging.
- Take your assigned work schedule into account when planning your research activities.
- Avoid running unattended processes. Post hazard information about your experiments.

Remember: Although the number of people in the lab should be reduced, researchers must not work alone in the lab.
LAB ATTIRE

Wear a University-supplied mask in all Penn buildings.

Masks must be worn while in the lab and at all other spaces except when eating. See Penn's Universal Mask Precautions and Face Coverings, Masks and Respirators Compared.

In addition to mask, all standard lab attire and PPE including long pants, enclosed shoes, lab coat, and safety glasses must be worn in the lab.
EQUIPMENT START UP

ENSURE SAFE RESTART OF POTENTIALLY HAZARDOUS SYSTEMS

Review operating manuals and SOPs.

Fill all sink drains, including cup sinks, with water. Flush all eyewash stations until clear.

Review equipment state and safely release or mitigate any stored energy sources.

Review startup procedures for compressed gas cylinders, gas generators, gas distribution systems, or pressurized systems such as solvent drying apparatus.

Restart equipment only when the process can be monitored for enough time to confirm safe continuous operation.

Before restarting a process, consider what will be necessary to safely shut it down again if necessary.
**SHARED EQUIPMENT/SPACE**

**FUME HOODS, BIOSAFETY CABINETS, PROCEDURE ROOMS, INSTRUMENTS, INSTRUMENT/RESOURCE FACILITIES**

- Post an hourly schedule or utilize a shared calendar or other multiuser scheduling system.
- Disinfect equipment before and after each use, including all touchable surfaces. Place a spray bottle with disinfectant and wipes near equipment.
- Post contact information for equipment stewards or facility managers who may not be onsite during all shifts.
- Access to certain facilities including vivaria may be affected by occupancy limitations. Check with the facility about scheduling and restrictions.
Wash hands when entering lab and at least hourly afterwards.

Reduce clutter so that desks, lab benches and work area can be disinfected properly at the end of shifts.

Clean surfaces with soap and water if there is surface dirt before disinfection.
DISINFECTION PROTOCOLS
Disinfect equipment after each use, including all touchable surfaces before and after use. Place a spray bottle with disinfectant and wipes near equipment.

Surfaces shall be disinfected using EPA-approved disinfectant for SARS-CoV-2: EPA approved disinfectants.
Contact surfaces in personal workspaces including computer keyboards, phones, hard-surface furniture and equipment should be disinfected at the end of each shift.

Lab benches, drawer pulls, fume hood sashes and work spaces should be disinfected at the end of shift.

Surfaces shall be disinfected using EPA-approved disinfectant for SARS-CoV-2:

**EPA approved disinfectants**
Labs may use alcohol to disinfect surfaces.

Exercise caution, 70% ethanol and Isopropanol are flammable and can be ignited.

Best practice is to saturate a wipe and apply to the surface rather than directly spraying if ignition sources are nearby.
HOUSEKEEPING/ LAB CLEANING

Normal housekeeping

- Housekeeping will clean high touch surfaces outside of lab

For suspected COVID-19 case

- Notify housekeeping for enhanced cleaning of high touch areas outside lab.
- Clean lab surfaces (EHRS COVID-19 Lab Cleaning Procedures)
- Clean employee PPE and office space, place employee lab coat in bag and launder.

For diagnosed COVID-19 case

- EHRS is performing contact tracing for Penn.
- Supervisor must report all suspected/probable/confirmed cases to EHRS (215-898-4453) 24/7
- Follow HR guidance (COVID-19 Guidance for Managers)
**Can I remove my mask while working in a private office?**

Yes. If physical distancing of at least six feet can be maintained at all times, and you are working alone in an enclosed, non-shared space, you can remove your mask. You may **not** remove your mask while working at the open lab bench or hood regardless of physical distance from others.

**Must a vendor wear a facemask while in Penn facilities?**

Yes. This is for your protection. Let your building administrator know if a vendor is not wearing a facemask. The building administrator should notify the appropriate Penn contact to inform the vendor’s management of the requirement to wear facemasks at Penn facilities.
Masks are safe to wear in the laboratory if you follow good lab hygiene practices and change your mask if it gets contaminated.

If your lab work poses a high risk of fire, conduct a hazard assessment to determine if additional precautions should be used. For example: wearing a face shield in addition to safety glasses & mask or wearing a mask made of only natural fibers (such as 100% cotton).

Try washing your safety glasses with soap and water or use a commercial anti-fog spray.

Ensure your mask fits snuggly so that your exhaled breath is not directed under your safety glasses.
Should I wear gloves outside the lab to protect myself?

- No. Do not wear gloves outside of the laboratory, in common areas of the building, or in shared facilities unless gloves are required by the facility’s policies.
- Focus on frequent hand washing, not touching your face, and disinfecting shared items and high-touch areas regularly.

Will there be any change to EHRS chemical waste pick-up service?

- EHRS will continue to pick up chemical waste and deliver waste supplies on request. Use the chemical waste pick-up form to submit your request.
Remember

HOW TO PREVENT VIRUS SPREAD IN LAB OR PUBLIC SPACES

Keep physical distancing (6 ft)

Cover your mouth when you cough or sneeze

Avoid touching your eyes, nose and mouth

When in public wear a cloth face covering, and when in lab wear a Penn supplied mask that covers your nose and mouth

Wash your hands with soap and water frequently

Stay home if you are sick
QUESTIONS?

- Contact your supervisor
- Contact EHRS - EHRS@ehrs.upenn.edu
- COVID-19 Safety Information Resources for the Penn community
  - EHRS COVID-19 Safety Information- https://ehrs.upenn.edu/covid-19
  - Penn COVID-19 Information for Faculty & Staff - https://coronavirus.upenn.edu/faculty-staff