

User Protocols for Nanofab Facilities Use

General

- 1) The facility is now open for regular 24/7 operation without shifts. You must be approved by the lab management before you are reauthorized to enter the facility.
- 2) You will be required to electronically sign an attestation stating that you have reviewed the [UCSB Covid Safety Presentation](#) and will abide by these protocols. Failure to follow these guidelines is grounds for suspension from the facility.
- 3) The Nanofabrication facility cleanroom uses ultra-high efficiency HEPA filtering for all of the air entering the lab and has an effective air exchange rate of 60-150 times/hour in all areas of the lab. This air flow in combination with appropriate mask use allows for higher density than other facilities. Please observe physical distancing of 3+ feet as much as possible while working in the facility.
- 4) You must have a proper face covering/mask while working in the cleanroom at close distances. You must have safety glasses on at all times. Here are the options. We now have a couple of options to eliminate shields.
 - a) KN95 or N95 mask. We will supply KN95 masks. You cannot have facial hair where the mask seals to the face. Make sure the mask seals well.
 - b) Surgical style mask plus mask brace (to make the mask fit snugly to the face, no facial hair where mask is against face). We supply the surgical style masks, users must supply their own mask brace. We will evaluate a mask tightening plus nose bridge tape option as well to see if that works. Example of mask brace here: <https://www.safety.com/the-mask-brace-can-improve-your-masks-fit/>.
 - c) Surgical style mask plus PET faceshield. Surgical style masks are loose fitting by themselves. PET faceshields add additional barriers. We supply the PET faceshields.
- 5) Before coming to work, you must take the wellness survey. Register here using your UCSB NetID. https://ucsb.co1.qualtrics.com/jfe/form/SV_b1KUu3tXTGswQ1n. You must have a UCSB NetID. If you do not, contact the director. After registering, you will be sent a link to take a mandatory back to work COVID training and will be sent a daily link to the assessment.
- 6) If the survey says you are not cleared to come to work, you may not come to the UCSB campus. Contact your doctor and follow their instructions.

- 7) Do not come to campus if you have symptoms of COVID. See CDC for current list of symptoms. <https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html>
- 8) If a close family member or people you have had close physical contact with (as defined by the CDC) is tested positive for the COVID virus, please quarantine yourself, call a health professional, and follow their directions.
- 9) If you test positive for COVID, notify the lab director immediately.
- 10) There is a 24 hour camera monitoring system that covers all areas of the facility. This is reviewed for COVID and other safety/policy compliance.
- 11) Water cooler: Take one cup, do not touch cup underneath, use wipe to press down handle to dispense water. Throw away cup after use. Staff will also clean the dispense buttons every 3 hours/between and after shifts.
- 12) When outside the cleanroom in the building, there is no hallway bench use allowed. There are benches outside. Please try to keep 6 ft. of distance from others at all times. Please keep mask on at all times while in building.
- 13) Email Brian Thibeault and Mike Silva if you need precious metals. Give us your combination in the email and leave the box on the designated shelf in the gowning room hallway. **Please request metals needed for the weekend by Friday at 3pm!**
- 14) No users are allowed in the staff office areas. The conference room, refrigerator, and microwave will be unavailable to users at this time. These are reserved for staff use only.
- 15) Please keep personal items in your car or your on-campus office. You may hang coats on our coat rack in the south hallway.
- 16) For using the dicing saw (Room 1147), please see the Dicing saw section below.
- 17) For QFI lab use (Room 1111), please see the QFI section below.
- 18) For Polishing lab use (Room 1113), see Polisher section below.
- 19) You must use the first floor outside bathrooms. One person at a time is allowed in the restroom. You may not go upstairs for any reason unless you are an authorized user of an upstairs laboratory. The restrooms are locked. Keys are available on the glove/mask cart at the building entrance. Make sure the door is locked when you leave and return the key.
- 20) In the event of emergency, you should follow all normal emergency exit protocols.

Travel and Arrival to Facility

- 21) Users are required to keep personal items in their cars. Laptops and phones are permitted in the lab and should be wiped down before entering the building. Stations are available in the entryway for this disinfection. UCSB users are required to keep their personal belongings in their car or office.
- 22) If a user comes to the lab with a helmet, jacket, backpack, and any other gear associated with riding their motorcycle to work, they are allowed to stow their belongings in a locker on a day by day basis. The user must remove their gear and their lock before they leave for the day. Also, the user must provide their own lock, and clean all locker surfaces with the 70% IPA solution at the end of their workday. Users are not allowed to leave their belongings directly outside the building or on the outside benches.
- 23) The stairs will only be accessible by Nanofab users with labs and business on the second floor. There is no bathroom use on the second or third floor for Nanofab users.
- 24) Please use the bathroom (downstairs, outside) before entering cleanroom to avoid need to gown and de-gown as often.
- 25) Masks will be provided at the entrance to the building.
- 26) Follow the step-by-step protocols in the “**ESB Nanofab Building Self-Admittance Protocol**” section below. These protocols are posted on the building doors and the glove/mask cart, and [online](#).
- 27) Face masks must be on before entering the building. Masks must remain on for the entire time in the building. Gloves and appropriate masks as described above are to be worn in the cleanroom at all times.

Entering the CR and Gowning Protocols

- 28) Follow the step-by-step protocols in the “***Entering the CR and Gowning Protocols***” procedure, appended below. This procedure is posted at the gowning entrance and in the gowning room, and [online](#).
- 29) Only 6 users at a time may be in the main gowning room area using benches. Try to separate as much as possible to ends of the benches
- 30) If entering for the first time, get a PET faceshield and plastic storage bag just for the shield from the hallway area at the metal check-in table. PET shields have a film on both sides. Remove this film before use. They also have anti-fog coatings on them. Do not rub them when drying them after cleaning. These will be used for all HF bench work and also in combination with loose fitting surgical style masks while in the lab.
- 31) Sign up for a hangar spot as normal. Put your name on a piece of tape and attach to the hanger. You will clip the PET faceshield bag to the hangar to store your faceshield.

Using the Cleanroom

- 32) All normal policies and safety procedures must be observed during this time and always while using the Nanofab.
- 33) Each clean bay has a maximum occupancy that is indicated by signs at the entrance to the bays. Look into the bay, count the users, do not enter until occupancy is less than maximum allowed, waiting if needed. Keep 3+ feet of distancing whenever possible.
- 34) As much as possible, please limit the time you are closer than 6 feet to other users.
- 35) Do not circumvent the masks/shields in order to talk. Please limit conversations in the lab to those needed to complete your work in the lab. If you need a longer conversation, use your phone to call or text to maintain distance. Do not ever have discussions at close distance with facemasks and/or faceshields off.
- 36) Remember to keep your hands away from your face while in the cleanroom. This is a general operating procedure inside of all cleanrooms, and especially important for safety during this period.
- 37) If you touched your face, facemask or goggles, please disinfect your gloves with 70% ISO/DI that is located throughout the lab.
- 38) PET faceshields are provided to all users These are very lightweight and should be worn over facemasks and safety glasses. If you are using the surgical masks plus faceshield:
 - a) PET faceshields should be worn all of the time. If you are working alone at a tool, you may turn these faceshields sideways or backwards on your head. Otherwise they need to be over your face to down **below your chin**.
 - b) You may work 2 people at a time at wet benches. ALWAYS choose an empty bench first. DO NOT simply use an occupied bench because you like that one when another one is open.
 - c) Normal PPE must still be worn at the HF benches for safety. We now allow the PET faceshields to be used for HF bench processing. Keep faceshield below chin and do not put your head under/below the sash. Acid aprons are still required.
- 39) If using KN95, N95, or surgical plus mask brace (to make the mask fit tightly):

- a) You may work 2 people at a time at wet benches. ALWAYS choose an empty bench first. DO NOT simply use an occupied bench because you like that one when another one is open.
 - b) Normal PPE must still be worn at the HF benches for safety. We now allow the PET faceshields to be used for HF bench processing. Keep faceshield below chin and do not put your head under/below the sash. Acid aprons are still required. You must put on a PET (or better) faceshield for HF work.
- 40) The acid benches should all have one person per bench unless all benches are first filled up, then two users may use a bench together. General acid work (non-HF) may be done at the plating wet bench if extra space is needed and other benches are being used. Other HF acid (and general acid) work may also be done in the bay 4 bench (with full apron and PET or standard face-shield) if needed.
- 41) Normal PPE must still be worn at the HF benches for safety. We now allow the PET faceshields to be used for HF bench processing. Keep faceshield below chin and do not put your head under/below the sash. Acid aprons still required and one will be given to you if needed. We are not sharing any PPE at this time.
- 42) NEVER lift your facemask up or down to talk. **Masks must remain on at all times over nose, mouth, and chin.**
- 43) If you need to sneeze or cough, bend down, facing floor, and do so into your elbow while leaving your mask on. If coughing persists, this may indicate an onset of symptoms of illness, please leave the facility immediately, report this to your supervisor and the director.
- 44) You should change your mask if you have sneezed. Please do this in the gowning room. Dispose gloves, remove and throw away mask, put new mask on, put on new gloves.
- 45) Disinfect your gloves with 70%ISO/water regularly.
- 46) After using any piece of equipment, wipe down all work areas
- a) pay special attention to microscopes, wiping eyepieces, plastic breath guards, and knobs. You should wipe down with 70% ISO/DI and a wipe.
 - b) For keyboard cleaning, use the 70% ISO/DI fine misting bottles only, do not overspray or wipe.
 - c) Thoroughly wipe sashes on all wet benches used with 70% ISO/DI after using a station.

- d) Thoroughly wipe down work surfaces where you were working, paying close attention to things you touched and areas that were close to your face.
- 47) Each user requiring acid apron and standard face-shield for use at the HF bench will be assigned their own personal items. No sharing between users.
- 48) If you need to do a task less than 15 minutes in duration between uses at the HF benches, you may hang your gown up while you perform the task. If you will be away from the bench for more than 15 minutes, put away your acid apron. DO NOT walk around the lab with the acid apron on.
- 49) Safety glasses are required at all times in the cleanroom. Keep safety glasses on while looking into the microscope. Use the digital imaging if you cannot use the eyepieces with your glasses.
- 50) Fogging:
 - a) Use tape to make surgical mask fit better over nose
 - b) Anti-fogging spray on the goggles
 - c) KN95, N95, surgical plus mask brace much better against fogging since they are tight fitting and prevent air escape upward through the face to mask gaps.
- 51) SEM room. We have installed a full length curtain to break the room into two sections. One person at each SEM only unless permission granted for training.

End of Shift Duties: Leaving the cleanroom

- 52) **End of shift duties** for users:
- a) Make sure you put away your items such as beakers, tweezers, and pens in your cleanroom box.
 - b) Make sure your cleanroom box is stored on your assigned shelf.
 - c) Make sure your acid aprons and acid faceshields are put away properly and that you cleaned your acid face shield thoroughly with 70%ISO/DI before storing.
- 53) **Exiting CR.** Use same 6-person limit as when gowning.
- a) Look through the exit door into the gowning room. If someone is standing behind the taped line inside, do not enter, but wait.
 - b) Once inside the gowning area, wait until less than 6 are present before entering gowning bench area.
 - c) Spray your lightweight PET faceshield with 70%ISO/DI. Place in bag wet, clipped to hangar with bag left open.
 - d) Place gowns in laundry after 5 days of use or sooner if necessary.
 - e) Wipe down bench where you were de-gowning with 70% ISO.
- 54) Our Staff will wipe the door handles, tables, benches, and all other surfaces in the gowning room and outside common areas regularly as an extra precaution.

Late Night Use

Additional procedures and protocols for night-time operation (10pm to 5am):

1. Users must take the wellness survey and be approved to enter. The wellness survey should be taken during the day before you enter for night-time work.
2. Users with more than 40 hours of total (cumulative) logged Nanofab time can use late night hours without formal permission. Users with less than 40 hours of total accumulated lab time must contact the operational director for approval.
3. Users must continue to follow all lab procedures including safety, lab cleanliness, and existing COVID procedures while in the facility.
4. A full lab camera monitoring system will be reviewed at times to verify compliance with both COVID and all other laboratory rules and procedures. Users found in violation of policies and protocols risk losing night-time as well as other facility access.
5. Clean the iris reader and door handles after use. 70% ISO/water and wipes are provided.
6. As during normal times, there will be no staff support for tool issues during the late night shift. Promptly use the "Report Tool Issue" button on the [signupmonkey tool page](#) / email issues to nanofab@ece.ucsb.edu as during normal operating times. The emergency cell phone number is active and will still be answered for laboratory emergencies that may arise, as during normal lab operations.

Using the Dicing Room 1147

- 1) All wipe downs use 70% ISO/Water
- 2) You must sign up for use of the system using our normal on-line system.
- 3) All normal policies and safety procedures for the dicing saw area must be observed during this time and always while using the nanofab.
- 4) Only one person is allowed at a time in the dicing room except for approved training sessions.
- 5) You must have gloves, mask, and safety glasses on at all times in the dicing saw room.
- 6) When done, wipe down the keyboard and any other surfaces you touched and worked with. Pay attention to the dicing taper knobs and other controls that you touched.
- 7) Wipe down the door handles when done.

Using the QFI (Char.) Lab 1111

- 1) All wipe downs use 70% ISO/Water
- 2) All normal policies and safety procedures for the QFI lab must be observed during this time and always while using the nanofab.
- 3) Up to 2 people are allowed at a time in the QFI room.
- 4) If you need assistance with the system, contact the tool owner as usual and follow their directions.
- 5) If there are 2 people in the lab, maintain 6 feet of distancing.
- 6) You must have gloves, mask, and safety glasses on at all times in the QFI room.
- 7) When done, wipe down the keyboard and any other surfaces you touched and worked with. Pay special attention to microscope eyepieces, microscope knobs, the dark box cover handle, and work surfaces.
- 8) Wipe down the door handles.

Using the Polisher Room (old ThermoLab) 1113

- 1) All wipe downs use 70% ISO/Water
- 2) You must sign up for use of the system using our normal on-line system.
- 3) All normal policies and safety procedures for the polisher must be observed during this time and always while using the nanofab.
- 4) Two people are allowed at a time in the polisher room. Please maintain 6 feet of spacing in this area.
- 5) You must have gloves, mask, and safety glasses on at all times in the polishing room.
- 6) When done, wipe down the keyboard and any other surfaces you touched and worked with. Pay attention to the knobs and other controls that you touched.
- 7) Wipe down the door handles when done.

ESB NANOFAB BUILDING SELF-ADMITTANCE PROTOCOL

REMINDERS:

YOU MUST KEEP YOUR MASK ON WHILE IN THE BUILDING.

PLEASE MAINTAIN 6 FEET OF SEPARATION WHILE IN THE BUILDING.

1. Before coming to campus, complete the UCSB Wellness Assessment online. Do not come to campus unless you are authorized by the survey.

Outside the Building

2. Proceed first to the main front entrance.
3. If you have a cloth mask and will come into the main cleanroom, please remove this and store it away. If you have an appropriate paper mask and will use the mask you came with in the cleanroom, proceed to step 8
4. Clean your hands with the hand sanitizer provided.
5. Remove the lid from the blue bin located outside the front entrance.
6. Obtain and put on a new face mask (located in the blue bin).
7. Spray the blue bin lid with the 70% IPA solution and put it back on the bin.
8. Clean your hands.
9. If the main doors are open, you may enter now and skip to Step 12. Maintain 6 ft of separation between users.
10. If you have a badge that will grant you building access through the front door, then proceed into the building and skip to Step 12.
11. If you do not have a badge that will grant you building access through the front door, walk around to the south side door (between ESB and Engineering 2) and use the iris scanner or white card reader to allow yourself in.

Inside the building

12. Store any coat, jacket, or sweater using the following procedure.
 - Please hang your garment on the wire rack in the south hallway.
 - Do not store anything on the upper and lower shelving.
 - Other personal items should be left in your car or office.
13. Disinfect your gloves with 70% IPA solution.
14. Place any items that you are taking into the cleanroom on the small black tables and

wipe them down with the 70% IPA solution.

15. If you are going to the QFI (Char.) Lab, Thermo (Polishing) Lab, or Dicing Saw Room you may proceed directly to them now. Remember that you must wear mask, gloves, and eye protection while in any of the laboratories. Gloves are available.
16. If you are entering the cleanroom, follow the “Entering the Cleanroom and Gowning Protocols” section.

Entering the Cleanroom and Gowning Protocols

1. Look in the CR entry door window. If you see a user, wait until that user has entered the main gown area and left your field of view.
2. The next user will follow keeping a distance of 6ft. There are taped markers on the floor for guidance
3. No more than 6 persons at a time can be in the active gowning area
4. If there are 6 people actively gowning, the next user must wait at the end of the gowning entry, behind the taped line on the ground, until another user gowning is finished and entered the cleanroom
5. Once clear to enter gown area, get new gown if needed and proceed to gown up, including safety glasses.
 - a. Wipe down new pairs of safety glasses with 70% ISO
6. Wipe down bench area and any used surfaces with 70%ISO after gowning (and de-gowning)
7. Put on the PET face-shield over glasses and facemask (if not using tight-fitting mask) and enter the cleanroom.