

User Protocols for Nanofab Facilities Use

General

- 1) Shifts: You are assigned to a single shift. You may not come to the Nanofab or bottom floor of ESB outside of these shift times unless granted late night access from 9:30pm to 5am (discussed below). The shifts are:
 - a) Morning: 5:30am to 1:00pm, 7 Days
 - b) Afternoon: 1:30pm to 9:00pm, 7 Days
 - c) Maximum occupancy of 28 at a time during the shift (25 users, 3 staff maximum).
- 2) As much as possible, please avoid personal interactions with other facility users from other shifts as this will remove the benefits of having shifts to minimize overall exposure risks for users.
- 3) You will be required to electronically sign an attestation stating that you have reviewed the [UCSB Covid Safety Presentation](#) and read and will abide by these protocols. Failure to follow these or other on-campus guidelines is grounds for suspension from the facility.
- 4) Please observe social/physical distancing of 6 feet as much as possible while working in the facility and while away, keep outings to a minimum, wear a mask while out in public, and use good hygiene in your personal life. This will help protect those around you by minimizing your chances of spreading the virus if you are an asymptomatic carrier.
- 5) The protocols and regular, extensive cleaning that we have put in place are there to minimize the risk of exposure to the virus within our facility in the case where someone enters the building and is unknowingly infected. A person can be contagious for days before showing any symptoms. All of these protocols are established to minimize the possibility of transmission to others.
- 6) Work slowly. Expect tasks to take longer to accomplish. This is **not business as usual**. Please do not try to make up for lost time by working extra hours. Please be considerate of others around you and the rules since we are all in this together.
- 7) 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.

- 8) 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.
- 9) 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>
- 10) 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.
- 11) If you test positive for COVID, notify the lab director immediately.
- 12) You may request tool training from the responsible engineers, as is usual. You may be given permission to attend a training at a different shift than you are assigned. In that case, you must leave the lab immediately after training is done.
- 13) Report tool issues as usual. Staff will follow the protocols when discussing issues with users and repairing or servicing systems.
- 14) Staff will be regularly monitoring user behaviors and correcting. The goal is to have a safe working environment. Everyone should be responsive and patient to corrections, even if given many times. We will ensure that the guidelines are followed.
- 15) 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.
- 16) 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.
- 17) When outside the cleanroom in the building, there is no hallway bench use allowed. There are benches outside. Keep 6 ft. distance from others at all times. Keep mask on at all times while on campus. Keep mask and gloves on at all times while in building.
- 18) Plan ahead regarding precious metals. We will give out gold only once/day in between shifts. You will leave your box in the gowning room entryway in the labeled blue-bin on the wire rack. Email your metal request and combination to the lab director. Be prepared. Make an appointment through email the day before! We cannot guarantee that we can refill your metals on the same day.

- 19) 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. Use Zoom, Skype, or other electronic media for conference calls and meetings that you need to have.
- 20) Please avoid biking and drive to campus during this time to avoid the need to change clothes in bathrooms. Please keep personal items in your car or your on-campus office. We also ask that you leave hats, jackets, and any other outer clothing in your car or office until notified otherwise.
- 21) For using the dicing saw, please see the Dicing saw section below.
- 22) For QFI lab use (Room 1111), please see the QFI section below.
- 23) 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. Keep mask and gloves on. Take key, open bathroom, turn sign to "occupied". When done, wash hands thoroughly, dry with paper towels, make sure door is locked, turn sign to "unoccupied", return key to cart.
- 24) In the event of emergency, you should follow all normal emergency exit protocols.

Travel and Arrival to Facility

- 25) A face covering must be worn at all times while on campus.
- 26) DO NOT carpool. Use separate vehicles. Please drive yourself to the facility at this time.
- 27) 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.
- 28) 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.
- 29) Please use the bathroom (downstairs, outside) before entering cleanroom to avoid need to gown and de-gown as often. Follow the arrows indicating traffic flow to exit the building if needed. Doors will be propped open as often as possible.
- 30) 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.
- 31) Gloves and masks will be provided at the entrance to the building.
- 32) Follow the step-by-step protocols in the "***ESB Building User Self Admittance Protocol***" to enter the building. These protocols are posted on the building doors and the glove/mask cart, and [online](#).
- 33) Gloves and surgical or non-valved (K)N95 masks must be on before entering the building. Gloves and mask must remain on for the entire time in the building until the end of the shift. Double gloves are to be worn in the cleanroom at all times.
- 34) Remember to maintain distancing when arriving to the lab. Form a queue with 6 feet of separation and enter the building one-at-a-time.

Entering the CR and Gowning Protocols

- 35) Follow the step-by-step protocols in the “***Entering the CR and Gowning Protocols***” procedure. This procedure is posted at the gowning entrance and in the gowning room, and [online](#).
- 36) A maximum of 25 users will be allowed in the cleanroom at one time, no exceptions, even if you have signed up for a tool. This guarantees that we stay below the established occupation limit during this phase. The token board indicates how many are in the facility. If 25 users are registered as inside the facility, you will need to wait until someone leaves before you may enter the gowning room.
- 37) Only 4 users at a time may be in the main gowning room area using benches.
- 38) If entering for the first time, arrange for staff to help , get a PET faceshield and plastic storage bag just for the shield from the hallway area. 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.
- 39) Find a hangar that has at least 1 empty hangar between other users hangars (if possible). Sign up for that spot on the sheet and put a piece of tape with your name on the hangar. Get a large plastic bag and clip the bag to the hangar. You will clip the PET faceshield bag to the same hangar. You will also put your booties in a plastic bag for storage in the bootie rack. Please put suits in laundry bin after 5 days of use, or sooner if needed.

Using the Cleanroom

- 40) All normal policies and safety procedures must be observed during this time and always while using the Nanofab.
- 41) The usual reservation system will still be in place. During this time, especially, please **plan well, use only what you need, coordinate with your groupmates and other users wherever possible to help with process flows**. Cancel unneeded slots as soon as possible.
- 42) Remember to continue to use [signupmonkey](#) and fill out log books so that we know which pieces of equipment need extra cleaning at the end of shifts.
- 43) There will be a maximum occupation level of 25 users in the cleanroom at this time. This allows for staff to come in and assist, monitor, repair equipment, perform maintenance without exceeding the building lab maximum occupancy guidelines.
- 44) In addition, 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 6 feet of distancing whenever possible.
- 45) Please limit any time closer than 6 feet to other users. This is to avoid what the CDC calls “close contact” in the case of someone you interact with testing positive for the virus at a later time. If you are deemed to be in “close contact” to an individual determined to have been infected during that time, you will be contacted and may be told to quarantine.
- 46) It can be hard to talk through both the facemasks and the shields. 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 and maintain distance. Do not ever have discussions at close distance with faceshields off.
- 47) Remember to keep your hands away from your face while in the cleanroom and at all times when possible in your daily life. This is a general operating procedure inside of all cleanrooms, and especially important for safety during this period.
- 48) If you touched your face, facemask or goggles, please disinfect your gloves immediately with 15sec of 70% ISO/DI that is located throughout the lab.
- 49) Signs and markers are posted in various places in the lab and on the floor to remind you of cleaning your space after use and for 6 foot distancing rules and cleaning.

- 50) If you need to assist a colleague at a microscope or other system, please have them step back first, then you may enter to look, maintaining 6 feet whenever possible.
- 51) When getting staff assistance, please step back, let staff address the issue, and wait for the staff to say you may re-enter the space.
- 52) PET faceshields are provided to all users for short times of closer separation while working at benches and passing by each other in corridors. These are very lightweight and should be worn over facemasks and safety glasses.
- a) With PET faceshields a maximum of two users may use solvent, developer, or spin benches. All Acid benches of all types may only have one person per bench.
 - b) PET faceshields should be worn all of the time. If you are working 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**.
 - c) ALWAYS choose an empty bench first. DO NOT simply use an occupied bench because you like that one when another one is open.
 - d) Wait until the bench space you need is clear before entering. Work patiently and slowly. Do not try to reach over people or slip in between two users quickly to grab something, wait or ask.
 - e) Only work with 2 people at a bench for as little time as possible. Remember, the CDC considers < 6 feet separation for more than 10 minutes to be "close contact".
 - f) Only one person per bench in HF benches and General Acid Benches is allowed. 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.
- 53) Please try to maintain 6 feet distancing whenever possible. Please do not stand next to each other and have a conversation.
- 54) When getting your stored boxes from the racks, please pay attention to where other users are and keep 6 feet of distance. Wait for other users to get their things and leave before getting your box if it is in the same location. DO NOT work right next to others unless necessary, such as at a wet bench for a short time.
- 55) Use Zoom or Skype or phone networking in the CR to maintain distances whenever possible if you need to communicate.

- 56) NEVER lift your surgical or KN95 facemask up or down to talk. **Masks must remain on at all times over nose, mouth, and chin**. Speak to each other with > 6ft. spacing. Bring headphones for your cellphone if needed, remembering to wipe them down before lab entry.
- 57) 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.
- 58) You should change your mask if you have sneezed. Please do this in the gowning room. Dispose outer gloves, remove and throw away mask, put new mask on, disinfect inner gloves, put on new outer gloves.
- 59) Change outer gloves every 3 hours inside the cleanroom in general. Disinfect your gloves with 70%ISO/water regularly.
- 60) The acid benches should all have only one person per bench. 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.
- 61) 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 spinner controls and hot plate buttons you have touched when done.
 - e) Thoroughly wipe down machine work surfaces where you were working, paying close attention to things you touched and areas that were close to your face.
- 62) 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. Aprons and face-shields will be stored in individual bags provided by the staff. If you are using the standard faceshield, you must wipe face shields thoroughly, including head strap, with 70% ISO/DI after use, before storage in your bag. Plan work accordingly. Instead of the standard faceshield, you may now use the PET

faceshields for HF bench work. The shield must be correctly worn, extending to down below your chin. Do not put your head under the bench sash.

- 63) 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 do this, wipe the hanging rack area that you used when you clean and store your acid gear. Anything longer than a short time away from the bench will require you to store your materials in the bags. DO NOT walk around the lab with the acid apron on.
- 64) Safety glasses are required at all times in the cleanroom. Keep safety glasses on while looking into the microscope. Anti-fogging agents can be used if needed. If safety glass fogging is an issue, you can alternatively use the digital cameras to inspect samples instead of the microscope eyepieces. The software allows you to mirror images so that the stage movement direction is correlated to image movement direction on the screen, for ease of use.
- 65) PET faceshields may be turned around on your head when you are using equipment including microscopes, aligners, and other processing equipment. Leave the faceshield face forward when walking through the lab and using any of the benches. If you get chemical splash onto the PET faceshield, please contact staff for assistance and to get a new faceshield.
- 66) SEM room. We have installed a full length curtain to break the room into two sections. DO NOT cross the curtain to the other side. DO NOT talk with the user at the other SEM. One person at each SEM only.

End of Shift Duties: Leaving the cleanroom

- 67) **End of shift duties** for users:
- a) Make sure you leave your items such as tweezers and pens in your cleanroom box.
 - b) Clean up glassware, wipe with 70% ISO outside, store in box. DO NOT leave empty glassware around in the lab, it will be regularly collected by staff.
 - c) If overnight lift-off or cleaning is required, place at BACK of bench, clearly labeled and covered as usual. Wipe outside with 70% ISO.
 - d) Wipe outside of your user box with 70% ISO.
 - e) Make sure you have wiped down last tool or bench area used, including keyboards.
 - f) 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.
- 68) **Exiting CR.** Use same 4-person limit as when gowning. Maintain 6ft. Distances.
- a) Look through the exit door into the gowning room. If someone is standing behind the taped line inside, do not enter, but wait. The queue behind this exit door should maintain 6 feet of distancing at all times.
 - b) Once inside the gowning area, wait until less than 4 are present before entering gowning bench area. Be patient. Stay behind the taped line next to the glove rack until the 4th person leaves.
 - c) Clean your lightweight PET faceshield with misting 70%ISO/DI. Wait 15 sec. **Wipe very gently** or not at all so that anti-fog material remains intact. They will be stored clipped to your hangar in the bag provided with the bag left open.
 - d) Place gowns in laundry after 5 days of use or sooner if necessary.
 - e) **Degowning.**
 - i) Put booties and suit away in bag. Put booties in normal bootie rack. Leave suit bag open (to allow suit to vent) and clipped to hangar. Clip PET faceshield bag to hangar.
 - ii) The hangar you use should have at least 1 empty hangar spot between any other user's gown (if possible).
 - iii) Then remove outer gloves, leave inner gloves on. Leave facemask on.

Sept 14, 2020

- iv) Wipe down bench where you were de-gowning with 70% ISO.
- v) Then leave. Do not linger. Exit CR. Remember to CLOCK OUT.
- vi) There will be an extra penalty for failure to clock out during this time of limited use.

69) Our Staff will wipe the door handles, hangars, and all other surfaces in the gowning room every 3 hours and at end of shift as an extra precaution.

Using the Dicing Room

- 70) All wipe downs use 70% ISO/Water
- 71) You must sign up for use of the system using our normal on-line system.
- 72) All normal policies and safety procedures for the dicing saw area must be observed during this time and always while using the nanofab.
- 73) Only one person is allowed at a time in the dicing room for social distancing reasons.
- 74) If you need assistance with the system, contact the tool owner as usual and follow their directions. Only one person can be in the room at a time.
- 75) You must have gloves, mask, and safety glasses on at all times in the dicing saw room.
- 76) Enter using the iris/card reader as usual.
- 77) Perform your work following all normal procedures.
- 78) 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.
- 79) Sanitize your gloves
- 80) Clock out using the iris/card reader as usual.
- 81) Wipe down the iris scanner if used (both entry and exit)
- 82) Wipe down the door handles.
- 83) Leave the area through the north hallway door that leads outside to the back of the building, following the building flow.
- 84) You can return to the main area by entering the main ESB first floor doors only.

Using the QFI Lab

- 85) All wipe downs use 70% ISO/Water
- 86) All normal policies and safety procedures for the QFI lab must be observed during this time and always while using the nanofab.
- 87) Up to 2 people are allowed at a time in the dicing room for social distancing reasons.
- 88) If you need assistance with the system, contact the tool owner as usual and follow their directions.
- 89) If there are 2 people in the lab, stay 6 feet away at all times.
- 90) You must have gloves, mask, and safety glasses on at all times in the QFI room.
- 91) Enter using the iris/card reader as usual.
- 92) Perform your work following all normal procedures.
- 93) 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.
- 94) Sanitize your gloves
- 95) Clock out using the iris/card reader as usual.
- 96) Wipe down the iris scanner if used (both entry and exit)
- 97) Wipe down the door handles.
- 98) Leave the area through the main entrance corridor, watching to make sure it is clear before you enter. Exit the facility through the main doors once clear. Do not cross paths with other people in this low-traffic area.