

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 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 a document stating that you have read and will abide by these protocols or face possible 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) Please take your temperature before coming the facility, every day. If you have a fever of more than 99.5 degrees, you must not come to the facility, call your doctor and follow their instructions. Report this to your PI and the Nanofab director. You must be fever free for at least 48 hours AND be cleared by a medical professional AND the facility director and the ESB building committee, before coming back to the facility.

- 8) If you are showing symptoms, call your doctor, follow their instructions and report this to your PI and the Nanofab director. You must stay home and not come to the Nanofab facility until released by the medical professional AND approved by the director AND the ESB building committee. Please refer to public health guidelines for details on symptoms which include dry cough, headache, sore throat, fever over 100.4 degrees F, loss of energy, loss of taste and smell. The CDC website has a full list.
- 9) If a close family member or people you have had close physical contact with, as defined by the CDC, are tested positive for the COVID virus, please quarantine yourself, discuss with a health professional, and report this to your PI and the Nanofab director. You must be cleared by a medical professional AND the facility director AND the ESB building committee to come back to the facility.
- 10) There will be no tool training sessions during this season. No exceptions. Groups must assign qualified users to run equipment.
- 11) Report tool issues as usual. Staff will follow the social/physical distancing protocols when discussing issues with users and repairing or servicing systems.
- 12) 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.
- 13) 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.
- 14) 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.
- 15) 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 under the work bench and text or email the manager the combination. Your replenished supply will be there for you in the same location at the beginning of the morning shift. Be prepared. Make an appointment through email the day before!
- 16) 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.

Sept 14, 2020

- 17) 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. With the weather warming up, we also ask that you leave hats, jackets, and any other outer clothing in your car or office.
- 18) For using the dicing saw, please see the Dicing saw section below.
- 19) For QFI lab use, please see the QFI section below.
- 20) You must use the first floor outside bathrooms. You may not go upstairs for any reason unless you are an authorized user of an upstairs laboratory. Exit the building from the stairwell exit or the south hallway exit after leaving the facility. The main entrance door should remain clear for people needing to enter the building.
- 21) If you have a UCBSNetID, take the wellness survey and get confirmation before coming to the lab. If you do not have a NetID, let us know.

Travel and Arrival to Facility

- 22) A face covering must be worn at all times while on campus.
- 23) DO NOT carpool. Use separate vehicles. Please drive yourself to the facility at this time.
- 24) 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 now allowed to stow their belongings in a locker on a day by day basis. Meaning they 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 IPA at the end of their workday. Users are not allowed to leave their belongings directly outside the building or on the outside benches.
- 25) The upstairs bathroom will be off-limits to the Nanofab users to isolate the Nanofab from the upstairs labs and students as much as possible. The stairs will only be accessible by Nanofab users with labs and business on the second floor.
- 26) 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. Please keep gloves on and wash gloved hands thoroughly with soap and water for at least 20 seconds. Dry with paper towels. DO NOT use air dryer!
- 27) In the event of emergency, all doors are accessible at any time, you should exit the building from the nearest exit, and distancing protocols within the building are suspended.
- 28) 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 outside for this disinfection. UCSB users are required to keep their personal belongings in their car or office.
- 29) If you brought a blue tote that is used to transfer samples back and forth, wipe this down thoroughly outside before entering the building.
- 30) Gloves and masks will be provided at the entrance to the building. 70%ISO/Water and wipes are available outside the entrance for cleaning personal items and inner gloves before entering the building through the main doors downstairs.
- 31) **You must enter the ESB first floor through the main doors only.** Use the doorbell to alert staff to your presence if the doors are closed. DO NOT enter the first floor of ESB from the stairwell, the South hallway door, or the North hallway door.

- 32) At the station before you enter: Clean gloves, store cloth mask or throw away old mask, put on new mask, clean gloves again, clean personal items and table, re-clean gloves, enter.
- 33) Before you are granted facility access, you must allow staff to ask a few questions and take your temperature with a non-contact IR thermometer. You may not enter the facility until staff has talked with you and has taken your temperature. If your temperature registers over 98.5 degrees on our unit, you will be asked to sit down inside for 10 minutes for a re-measure. If you still measure high, we will re-measure you with a contact forehead thermometer for verification of temperature. If you measure above 99.5 degrees with the forehead thermometer, you will be asked to leave campus, verify your temperature at home, contact your supervisor, and contact your doctor, following the protocols given above.
- 34) 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.
- 35) Remain outside the building until staff allows you in. Maintain distancing outside the building at all times. There are 6 foot guide lines taped outside for forming a queue. Cleanroom entry will be done sequentially as people arrive.

Entering the CR and Gowning Protocols

- 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. If 25 users are registered as in 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.
- 38) Look in 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.
- 39) Use iris scanner or card reader and push door open with body to avoid touching door handle. Use the provided tissue paper to manipulate (tilt) the Iris scanner if necessary.
- 40) If you brought a blue tote for sample transfer, place it on the wire rack on the right side of the entryway in specified locations only and bring your samples with you while gowning. DO NOT gown first then come back for samples.
- 41) The next user will follow keeping a distance >6 ft. There are taped markers on the floor for guidance.
- 42) Space yourself on the gowning room benches by >6 ft. from other users and work on opposite ends of gowning benches.
- 43) No more than 4 persons at a time can be in the active gowning area
- 44) If there are 4 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 enters the cleanroom.
- 45) If a user is standing at the line at the end of the gowning entry, the next user must wait before entering until the space behind the line is cleared.
- 46) If entering for the first time, get a PET faceshield and plastic storage bag from the staff. 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. Get a new suit from inside as usual.
- 47) We have a five-day use policy for suits. Find a hangar that is 1 hangar or more away from other users. 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 and clip this to the hangar.
- 48) Gown up, including safety glasses.

- 49) Use 70% ISO/DI spray and wipes to wipe down all laptops, phones, lab items brought in, area you placed your personal items, bench space where you gowned up, gloves you currently have on.
- 50) Put on second pair of gloves, put on the PET faceshield over glasses and facemask and enter cleanroom.
- 51) DO NOT loiter in the gowning room, but quickly enter the cleanroom once you are gowned and ready to go.
- 52) The next person can now enter main gowning area.

Using the Cleanroom

- 53) All normal policies and safety procedures must be observed during this time and always while using the Nanofab.
- 54) 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.**
- 55) 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.
- 56) 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.
- 57) 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. Keep 6 feet of distancing whenever possible.
- 58) 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 possibly told to quarantine.
- 59) It can be hard to talk through both the facemasks and the shields. Please limit long conversations in the lab. If you need a longer conversation, find a bay with few people in it, take off PET faceshield, have your discussion > 6 feet apart.
- 60) 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.
- 61) If you touched your face or facemask, please disinfect your gloves immediately with 15sec of 70% ISO/DI that is located throughout the lab.
- 62) Users must stay at least 6 feet away from other users in the cleanroom as much as possible at all times.
- 63) 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.

- 64) If you need to assist a colleague at a microscope, please have them step back first, then you may enter to look, maintaining 6 feet whenever possible.
- 65) 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.
- 66) 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) These 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**.
 - b) ALWAYS choose an empty bench first. DO NOT simply use an occupied bench because you like that one when another one is open.
 - c) 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.
 - d) 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".
 - e) 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.
- 67) Please try to maintain 6 feet distancing whenever possible. Before entering or leaving a bay, see if anyone is coming out and wait for them to exit before entering. Please be patient and deliberate with movement in the facility. Please do not stand next to each other and have a conversation.
- 68) 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.
- 69) Use Zoom or Skype or phone networking in the CR to maintain distances whenever possible if you need to communicate.
- 70) 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.

- 71) 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.
- 72) 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.
- 73) Change outer gloves every 3 hours inside the cleanroom in general.
- 74) 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.
- 75) 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.
- 76) 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. You must wipe face shields thoroughly, including head strap, with 70% ISO/DI after use, before storage in your bag. Only one person in a given research group will be allowed to perform HF bench work due to limited supply of face shields. Plan work accordingly. If you need more than one face-shield for your group, please have your supervisor contact the director for a discussion. 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.

- 77) 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.
- 78) 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.
- 79) 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.
- 80) 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

81) End of shift duties for users:

- a) Make sure you leave your items such as tweezers and pens in your cleanroom box as you will not be able to leave them in your gown pockets since we are now operating in a one-day use policy for gowns.
- b) Clean up glassware, wipe with 70% ISO outside, store in box. DO NOT leave empty glassware around in the lab.
- 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 shields are put away properly and that you cleaned your acid face shield thoroughly with 70%ISO/DI before storing.

82) 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 only 3 are present before entering gowning bench area. Be patient. Stay behind the taped line next to the glove rack until only 3 persons are present.
- 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.
- 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 bin. Leave suit bag open (to allow suit to vent) and clipped to hangar. Clip PET faceshield bag to hangar.
 - ii) The hangar you use must be at least 2 hangar spots away from any other user's gown.
 - iii) Then remove outer gloves, leave inner gloves on. Leave facemask on.

- iv) Wipe down 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.

83) 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

- 84) All wipe downs use 70% ISO/Water
- 85) You must sign up for use of the system using our normal on-line system.
- 86) All normal policies and safety procedures for the dicing saw area must be observed during this time and always while using the nanofab.
- 87) Only one person is 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. Only one person can be in the room at a time.
- 89) You must have gloves, mask, and safety glasses on at all times in the dicing saw room.
- 90) Enter using the iris/card reader as usual.
- 91) Perform your work following all normal procedures.
- 92) 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.
- 93) Sanitize your gloves
- 94) Clock out using the iris/card reader as usual.
- 95) Wipe down the iris scanner if used (both entry and exit)
- 96) Wipe down the door handles.
- 97) Leave the area through the north hallway door that leads outside to the back of the building, following the building flow.
- 98) You can return to the main area by entering the main ESB first floor doors only.

Using the QFI Lab

- 99) All wipe downs use 70% ISO/Water
- 100) All normal policies and safety procedures for the QFI lab must be observed during this time and always while using the nanofab.
- 101) Up to 2 people are allowed at a time in the dicing room for social distancing reasons.
- 102) If you need assistance with the system, contact the tool owner as usual and follow their directions.
- 103) If there are 2 people in the lab, stay 6 feet away at all times.
- 104) You must have gloves, mask, and safety glasses on at all times in the QFI room.
- 105) Enter using the iris/card reader as usual.
- 106) Perform your work following all normal procedures.
- 107) 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.
- 108) Sanitize your gloves
- 109) Clock out using the iris/card reader as usual.
- 110) Wipe down the iris scanner if used (both entry and exit)
- 111) Wipe down the door handles.
- 112) 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.