Cleanroom Walkthrough training document
post-COVID-19 Orientation content

1. Certification of the lab for cleanroom is a rigorous demand
   - Cleanroom certification: discuss certification 100 particles >0.5 micron size per cubic ft, airflow design, and specialized space. Below, we review how that impacts entrance and admissible supplies.

2. CLEANROOM PAPER Discussion
   - We use a specialized paper it is the only paper that is permitted in the cleanroom
   - polyester cellulose blend created by heat processing so that it does not create its own particulates.
   - **Cleanroom materials are very specialized.**

3. Materials permitted in the cleanroom review *(if not mentioned, assume not permitted)*
   a. Review dress code (no hoodies, no turtlenecks, no very dirty or fuzzy articles, must have fully enclosed shoes)
   - Technology – phones, laptops, tablets, etc
     a) you can take non-porous devices inside if properly wiped. (proper wiping reviewed below)
     b) If porous case, remove or put in a zip-lock baggie.
     c) Wipe off before going inside, using particle removing station described in virtual tour
     d) Anything that fits in your pockets it can stay in your pockets – it is then contained for particulate
   - Handwritten note taking –
     a) CR pens are in cups inside, only pen that can be used
     b) Pens: filtered and low alkaline ink so it doesn’t produce particulate while you’re writing.
     c) CR notebooks are $15 or $25, examples at lab.
     d) two notebook types, hard bound is patent compatible, available for cost to PI
     e) Quick notes can be jotted on CR wipes or on CR post-it notes
   - Sample carrying – how to bring things in/out of cleanroom
     a) Clear -plastic -sealing container (Tupperware/gladware, wafer boxes ok, or we can help)
     b) Wipe off before entry every time (particle removal procedure reviewed below)
     c) Use cleanroom grade foil for light exclusion (if you have light sensitive sample)
     d) Some PI groups have a storage box in gowning area, which stays there

4. Login --
   - **No express login** – reservations required at lest 1 hour in advance. Follow all FOM guidelines
   - You must log in CR before equipment login becomes available on equipment.
     a) This is our safety list: if an emergency occurs, we use this to determine who may be affected
     b) Remember to log out of cleanroom too.
   - Bay logins occur simultaneous to equipment logins to maintain COVID-19 social distancing
   - Use the **equipment availability check** tool to determine when the bay will become free, even if you don’t have access to the equipment. This will assist with reservations.
   - **Remember to LOG OUT of all equipment when leaving** – your login will block others from accessing any of the equipment in the bay you control

5. Training
   - expires after 6 months of no use
   - Your first training and first time accessing the Cleanroom lab you must alert the staff member in advance of your training that it is your first access so they can assist you

6. Wrists off ground: when gowning, we need to keep wrists of the coverall off the ground, we will learn today.
   - Training staff will assist you with this on your first visit, please alert staff if it will be your first CR entry when you are scheduling for your training.
Facility Virtual Tour differences (below photos are provided to reference to differences from virtual tour):

1. Differences from virtual tour creation date (COVID SUPPLIES):
   - Cleanroom gloves are in exterior hallway – you **must** use cleanroom gloves for cleanroom
   - You also must select a surgical mask and put it on for your visit
   - Mouth/nose covering goes over top of surgical mask
   - Cleanroom gloves should be treated for particle removal same as samples or tech (explain detail)
   - Bag provided for coverall storage, write your name and use hanger through loop
   - Coveralls to be pulled down from over-head bins in appropriate size, stored in the bag
2. **Cleanroom Specific Instructions (reference virtual tour and above photos to show examples)**
   - Bring your own safety glasses/goggles – no communal PPE is provided
   - At the entrance, you will select the cleanroom gloves and use them as described above.
   - At the entrance, you will change to a new mask, as provided, and described above.
   - Gowning Room allows only ONE user at a time. If someone is in gowns, wait at a safe distance from the door for them to exit.
   - Inside gowns, while entering you will:
     a) Place a beard cover or hood over top of the surgical mask. This provides both medical protection and particle protection.
     b) On first visit, select a large blue zipper closure bag and use the sharpie to write your name on it.
     c) Put on shoe covers as usual
     d) Use the wiping station supplies to clean/disinfect the cleanroom gloves you put on outside, and to clean any supplies you are bringing in with you. (Show example wiping)
     e) Your blue bag will be hung on a hanger, you will select the correct size coverall from bins above, and it will go only in your own bag, along with goggles.
     f) Ensure that anyone waiting to use gowns is at least 6 feet away from the door before you go into the cleanroom.
   - Exiting cleanroom, remember that only one user may be in gowns at a time, and place your reusable PPE (coverall) into the bag you put your name on and hang the bag back on the hanger.
     a) Gown must be taken off at the “dirty side” of the gowns room and placed in bag
     b) Do not remove any other part of gowns until you are on the “clean side” after stepping over the bench.
     c) Keep your gloves on until exited from the entire lab suite.
   - Ensure that any user waiting for gowns is at least 6 feet away from the exit before leaving gowns.

3. **EHS Required Elements (host will click through virtual tour to show location and detail of the following)**
   - Fire alarm – Exit procedure, exit building and cross a street
   - Show our specialty alarms -Gas and Exhaust failure - Exit Procedure, exit lab and stand at distance, alert us that it is going off.
   - Show hydrofluoric acid treatment location and review procedure for HF emergency care
     - Emergency wash 5 minutes
     - call Pitt police (show closest provided phone)
     - Treatment cream location and method - must be spread with acid glove or stick
   - Emergency exits –
     - If possible, go back out gowns: do not ungown in case of emergency, exit fully gowned, and once safe, discard all gowns (no longer clean)
     - Show Emergency exit locations – alarm will sound, staff key required to close it back up.

4. **Cleanroom Specific Bays review:** Only one person is allowed in each cleanroom bay (Total 7 people, + 1 in gowns)
   - **Gowning Room**
   - **CR-Bay 1: AJA-PECVD-Thermionics**
   - **CR-Bay 2: ALD-Plassys evaporator**
   - **CR-Bay 3: Developing hood-F/C ICP-RIE etchers-March Asher-Trion RIE**
   - **CR-Bay 4: Furnace-HMDS oven-Acid hood - Angstrom Sputtering- RTA**
   - **CR-Bay 5: Litho-Spinner1/2-Surface profile- Suss MaskAligner**
   - **CR-Bay 6: MLA-Nanoscribe- Quintel MaskAligner**
   - EBL, no bay is required as only one equipment is in the room. One person occupancy to room
   - There is no charge for bays, they are simply to facilitate communication for social distancing requirements

Card and cleanroom activation to follow – contact NFCFadm@pitt.edu if any problems