SOP COVID-19 Stage 3 Shared Facility Access/Operation

UNIVERSITY OF CALIFORNIA
SANTA BARBARA

Microfluidics Lab Access for Elings Hall, Room 3430
STANDARD OPERATING PROCEDURE

Type of SOP: ☒ Process ☐ Hazardous Chemical ☐ Hazard Class

Date of last revision to SOP: Rev 6 -- 13 June 2020, David Bothman

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OVERVIEW

Initially after the onset of the Covid-19 pandemic, all labs were closed only allowing essential workers access to maintain critical lab functions. This SOP describes requirements and procedures for partially opened labs allowing access to select researchers to resume some lab activity. This is termed "Stage 3" which means 10-25% activity with 5-15% of normal personnel.

To ensure that the Microfluidics Lab is a safe place to work:

- We will be enforcing safe-distancing, and by scheduling workers in work zones that are separated by at least 6 ft. to prevent airborne virus transmission.
- Lab staff and researchers will disinfect frequently touched surfaces to prevent contact transmission of virus.
- Researchers and staff will be asked to self-evaluate their health, and to stay away from Elings Hall if they are not feeling well.

Please read the Elings Hall Building level procedures documented in the Elings Hall COVID-19 Stage 3 SOP, this SOP does not repeat them.

Microfluidics Lab Support of Campus Research

The CNSI Microfluidics Lab was developed by CNSI as a campus-wide resource for researchers who use custom-made microfluidic devices in their work. The lab currently has 347 trained users from 109 research groups and project teams in mechanical, electrical and chemical engineering; chemistry, biology, materials, physics, MRL, SSLEC and Media Arts and Technology. Support staff from these departments also use the lab regularly. The lab also supports off-campus users from 13 companies that learn about the lab from campus colleagues. CNSI created the lab to support two distinct groups of researchers: experienced device fabricators who benefit from having a comprehensive tool set in one location, but just as importantly we want to serve researchers who have creative ideas about using novel microfluidic devices, but don't have much experience making them. Over time researchers have found that the lab's tools are useful for building many other types of scientific instruments in addition to microfluidic devices. CNSI

has encouraged this evolution of the lab. The table below summarizes the activity in the CNSI Microfluidics Lab during the 2018-19 academic year:

Number of researchers with access	347
Number of PI groups and project teams	109
Number of external companies	13
Training classes	>70
Hours spent by researchers working in the lab	2,446

PERSONAL PROTECTIVE EQUIPMENT

What COVID-related PPE is required at all times in the laboratory (fabric masks are minimum requirement)?

Face masks and gloves are required at all times while working in the labs. Personal fabric face masks are acceptable. Surgical masks are available in the lab

Plan for COVID-related PPE individual storage/re-use and decontaminating shared PPE to prevent cross-contamination:

Users may not store COVID-related PPE in the lab. Communal lab coats have been removed from the lab. Users may continue to store their own lab coats in bins on the wire shelves by the lab entrance.

LABORATORY SCHEDULING Prior to the research shutdown, what was the typical number of grad students/postdocs/staff scientists using each room on a daily basis?

About 10 individuals – there were an average of 22 visits to the lab per day, including multiple visits by the same person). The average visit lasted 27 minutes

Maximum Occupancy of Labs (by room):

The maximum occupancy of room 3430 is three people based on the Campus' Stage III guidelines of 250 sq. ft. per person. (3430 is 981 sq. ft.).

Procedures for working alone lab (by room):

There are no special procedures for working alone in the lab.

Procedures for social distancing when more than 1 person is present in lab:
The Microfluidics Lab has been organized into three work zones as shown in the floor plan sketch below. Only one person may be working in each zone. If it is necessary to work at the boundary between zones, users should negotiate their work in order to maintain a 6 foot separation.

How will you document and archive information on individuals who have accessed labs (with times of access) for contact tracing, if needed?

Users swipe their Access cards on the entry reader to unlock the Microfluidics Lab door when entering, and on the exit door reader when leaving. These records will allow us to reconstruct lab occupancy.

If someone in your laboratory were to have COVID or suspected COVID, What in your laboratory would need to be shutdown or placed in standby mode before the mandatory 7 day vacancy period.

Before a mandatory 7-day shutdown all hot plates and ovens should be powered off. If possible the Objet printer resins lines should be flushed.

SPECIFIC LABORATORY PROTOCOLS

Planning your work and scheduling time in the lab

- We are using FBS to schedule tool use in the lab. You can access the FBS software here.
- I will be coordinating requests in order to find a schedule that meets our occupancy limits. The scheduling process is outlined below:
    - Request work times: Tuesday of week(x) before Tuesday 4pm users: enter scheduling request for week(x+1) on Google Calendar
    - Resolve conflicts: Wednesday of week (x) before noon staff will work with users to resolve any scheduling request conflicts
    - Submit for approval: Wednesday of week(x) at noon staff will forward proposed calendar for to CNSI Executive Committee
    - Schedule finalized: Thursday of week(x) CNSI Executive Committee approves / modifies calendar. Lab staff notifies users. The labs will be open every day from 8am - midnight.
- If you have problems logging in to FBS, or have questions about using it, email me.
- Elings Hall labs will be open every day from 8am – midnight.

- Some of the tools in the lab have moved – please see the lab diagram below to see which zone the tools that you are using are located.
- FBS is configured to prevent another user from reserving any tool in the same zone at the same time.
- The communal lab coats have been removed from the racks. If you will be working with chemicals and will need a coat please bring your own. There is limited storage for user lab coats in the bins by the lab entrance.

Entering the lab

- Look through the door window to make sure that nobody is exiting or standing by the door.
- Check the lab occupancy sign on the door before entering. Advance the counting indicator so that it shows the correct number of workers in the lab. If it indicates that there are already two people working, it may not be safe to start work. Open the door to confirm that there are really two people working. If so, discuss the situation to resolve the scheduling problem. The scheduling software should prevent overbooking, so another user may be in the lab past their reservation.

Before starting work – hand washing and PPE

- Face masks must be worn at all times in the lab.
- Wash your hands for 20 seconds with soap immediately upon entering the lab. The sink at the back wall of the lab has hand soap.
- Wear gloves at all times in the lab they are located on the wire shelves by the lab entrance.
- Shared lab coats are not permitted during COVID operations, and have been removed from the racks. If you will be working with chemicals and will need a coat please bring your own. There is limited storage for user lab coats in the bins on the shelves to the left of the lab entrance. Please label your bin.

While working

- Maintain at least a 6 ft. separation from other users. The scheduling software will not allow simultaneous reservations of adjacent tools, but it may be necessary to negotiate transit at zone boundaries with people working in adjacent zones.
- If you need to sneeze or cough make sure to so into your elbow, and bend down so that your head is below bench level to prevent the spread of germs. Sanitize the work area immediately.
- If you start to feel unwell please leave the lab.

Sanitize your work area before leaving the lab

- Computer keyboards and mice will be covered with plastic film. **Wearing clean or alcohol-sanitized gloves** replace this film on all computers that you used.

- Sanitize everything that you touch (sink faucet handles, workbench surfaces, tool controls, etc. with IPA squirt bottles and paper towels. Use disinfectant in spray bottles for cleaning plastic surfaces.
- Sanitize the interior and exterior door handles with IPA when leaving the lab.

Remember to swipe out and to reset the occupancy indicator on your way out.

Other COVID-19 changes

- In order to reduce the number of people working in the labs, staff are available to fabricate parts for users. Here is the link for submitting a job and requesting a quote.
- There will be no regularly scheduled training during the Phase 3 ramp up. Users with questions can email me, or call me at 805.680.2821. We can also schedule Zoom training.
- Routine maintenance will take place when users are not in the labs.
- Staff will sanitize the lab daily.

Glove use policy

Nitrile or latex gloves should be worn at all times while working in the lab. Before leaving the lab at the end of your shift remove and dispose of the gloves, and wash your hands.

Procedures for cleaning *equipment* at beginning and end of shift:

Sanitizing the lab

Lab staff will sanitize the lab before each work day – see cleaning schedule below. Users should sanitize their work areas before starting work, and before leaving the lab at the end of their shift. Sanitizing supplies include 70% IPA in spray and squirt bottles, detergent spray bottles and paper towels.

The following items will be cleaned with 70% IPA before each work shift

1. Door handles - inside and out
2. Faucet handles
3. Light switches
4. Fume hood sash handles
5. Vacuum dessicator handle and valve
6. Think mixer controls
7. Spin coater controls and lift
8. Ultrasonic controls and lift
9. Dicing saw controls and
10. Objet computer keyboard, mouse and printer cover
11. Oven controls
12. Keyence keyboard, mouse and control console

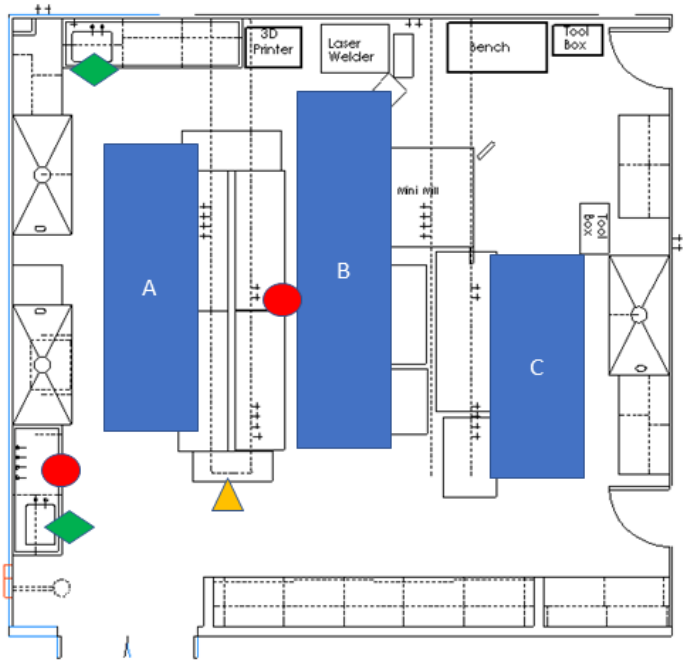
13. Laser cutter keyboard and mouse
14. CNC drill keyboard and mouse
15. Ozone controls and lift
16. Lab phone
17. Counter tops

Microfluidics Lab green disinfectant cleaning schedule

1. Laser cutter lid

Experiment specific protocols modified by COVID:

None



Elings 3430 – Microfluidics Lab - Work Zones
Key tools in each zone are listed below

Zones:

A. Silane vapor deposition, device assembly Ultrasonic cleaner, Thinky mixer, spin coater, ozone cleaner, casting workbench
B. Laser welder, assembly bench, Spraybase, Keyence microscope, CNC drill
C. Plasma cleaning, Sonoplot, Laser cutter

Tools without zones: ovens, Objet. Users are not at the location for very long, so social distance will be established by negotiation with anyone else in the area.

Notes:

1. The ozone cleaner has been moved to the fume hood behind the Thinky mixer in zone A
2. The laser cutter has been moved next to the Haas mill in zone C

CNSI Microfluidics Lab
COVID-19 Stage 3 Work Zone Map R3
Dave Bothman - 28 May 2020

PPE
Handwashing
Disinfection supplies