

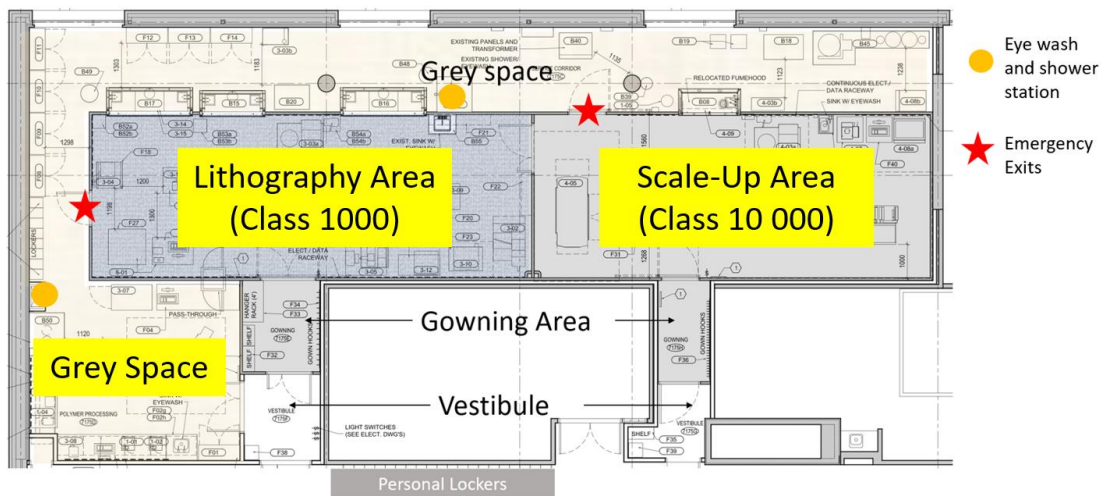
# CRAFT Device Foundry: Orientation Package

The Centre for Research and Applications in Fluidic Technologies (CRAFT) is a joint partnership between the University of Toronto (UofT) and the National Research Council (NRC).

## Overview

The device foundry has state-of-the-art equipment for phot, soft-lithography, and polymer scale up fabrication. There are over 35+ bookable instruments available for users. A full list of CRAFT instruments can be found on our website: <https://craftmicrofluidics.ca/facilities/instruments/>

Location: BA7175



The device foundry is separated into 3 areas depending on user's fabrication needs:

Grey Space:

The grey space is primary for PDMS and 3D printing. This area is mostly designed for device fabrication and assembly. Ovens and corona treaters are available for PDMS work. Additionally, 3D printers are also located in this area.

Lithography Area:

The lithography area is in a class 1000 cleanroom. This area is mostly designed with prototyping in mind. Most equipment in this area is geared towards photo/soft lithography processes. Wet benches are also available for handle developers and photoresists. Imaging instruments are also located here to assess the finish of devices.

Scale Up Area:

The scale up area is a class 10 000 cleanroom. This area mostly focuses on large batch production of devices, once a final design/approach has been decided. The roll-2-roll polymer coater is the features equipment that is housed in this space.

Paper (notebooks, cardboard, etc) can NOT be brought into the cleanroom, because they will generate particles. If you require, CRAFT can provide and print on cleanroom paper for you.

## Safety

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Important locations to note:

**Emergency exits:** There is one exit in each cleanroom. Do NOT use unless emergency, alarm will sound. Gowning area should always be the main entrance and exit for both clean rooms.

**Eyewash and safety showers** are. Both are within the grey space. One on the side of the grey space area and one along the back corridor, behind the lithography area.

**Spill kits and first aid:** Located inside cleanroom by the door

### Storage:

- Store personal research belongings in personal lockers. Do NOT store personal/research belongings in PPE bins
- PPE can not leave clean room- PPE packages should be stored on designated shelves or in lockers
- Lockers are available inside and outside of the facility for lab groups to use. To reserve a locker for your group, please speak to staff.
- Group lockers (number combination padlocked) will be allocated for larger research groups
- No chemical storage in group or personal lockers and on shelves
- Store chemicals in appropriate cabinets or under the wet benches

### Chemical safety:

- All containers should be labelled with an appropriate workplace labelling and user and group name. Secondary container must have clear date (of transfer). Any items not labeled will be tossed
- The labels for most common chemical in the space can be found in the binder on top of the cabinet
- Handle chemical bottles only within the defined zones (taped times) and within wet benches
- Dispose of chemicals in appropriate chemical waste bins/bottles (under hoods). Do NOT dump in sink

## PPE and Gowning Protocol

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Upon entering:

Mask



Hair Net



Shoe Covers



Appropriate PPE for each area:

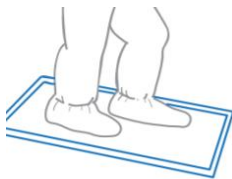
Grey Space: Shoe covers, gloves, hairnet

Lithography Area: Full cleanroom attire

Scale Up Area: Full cleanroom attire

**Cleanroom Gowning Protocol**

- PPE Packages- consists of cleanroom gown, hood, boots and goggles (label the box upon receipt)
- If considered to be untidy dispose in the laundry box and request a new PPE bin



**1) Cleanroom Tack Mat**

Walk on mat and roll any carts over mat before entering cleanroom to prevent dirt or dust from entering



**2) Hood and Eye Protection**

Put on hood first. Ensure that face/neck are not exposed. For those who have eyewear, use goggles that specifically wrap around glasses



**3) Coverall**

Step into coverall and tuck hood or collar into coveralls before zipping up. At this point - Do NOT touch anything outside of cleanroom



**4) Boot Covers**

Place boot covers over legs of coveralls and fasten tightly to prevent tripping



**5) Gloves**

Put on gloves and ensure that they cover over the wrist of the sleeves

## LMACs Booking System

Access LMACS: <https://ut.nanofab.ualberta.ca/>

- After hours (outside of 9-5 M-F) and weekend access are granted to users with 50+ hours of experience on 1 instrument. Please notify staff if you have met this requirement.
- Users **must** book instruments prior to use here:

**Create Reservation**

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**Reservation Information**

Tool

Project

**Start**

Date

Time

**End**

Time

Date

- The check tool schedules section is a helpful tool to see what instruments are already booked and by whom

**Check tool Schedules**

Select Tool(s)

Start End

Mon, Apr 11

SU8 Spinner 8-in (CRAFT)

start	stop	user
12:00	14:00	ksoon

**Arriving at the facility:**

- Please arrive on time at the time of your reservation. If you are over 15 min late, someone else can take over your scheduled time
- Wall-mounted tablets are available to access LMACS. Phones and laptops can be brought into the cleanroom as well. Please make sure to wipe and clean them thoroughly before bringing them in.
- All instruments are **enabled (turn on) through LMACS**. This can be done here:

**Login Now**

Project:

Equipment:

- After refreshing the page, you should see all the instruments you are logged in to. This menu also indicates what everyone else is currently logged in to.
- To **disable (turn off)** instruments, select **stop** in the currently logged in menu:

Currently Logged In			
5 results			
User	Tool	Start	
Kayla Soon	SU8 Spinner 8-in (CRAFT)	Apr 11 @ 10:46 am	<input type="button" value="stop"/>

**Emergency Contact**

For general questions and inquiries related to CRAFT facilities: [CRAFT@utoronto.ca](mailto:CRAFT@utoronto.ca)

**Device Foundry Staff**

Dan Voicu (Operations Manager)  
 Abdul Wasay (Technical Officer)  
 Kayla Soon (Technical Officer)

[dan.voicu@utoronto.ca](mailto:dan.voicu@utoronto.ca)  
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[k.soon@utoronto.ca](mailto:k.soon@utoronto.ca)

## CRAFT Device Foundry: User Expectation and Agreement

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- Must follow lab rules and appropriate conduct as outlined by staff in orientation
- Be aware of and follow posted safety/instructional signs
- Appropriate PPE must be worn at all times
- Personal, non-common items must be removed from common areas and stored properly (chemicals vs non-chemicals)
- All chemicals, prepared or brought into the facility, must contain a UofT workplace label (located in chemical binder)
- Explore the instruments within the operational limits of the instrument, please reach out if you are not confident
- If you do not show up to your scheduled session within the first 15 min, your session will be forfeited
- It is a shared space, so please respect the space and other users and their times. Work based on booked schedule and please cancel reservation if you cannot make it.
- Keep the space clean. If found unclean and unsuitable for use, please notify us, send email to the responsible trainer listed on the SOP document, with a photo (no flash please) and time and we will reach out to the previous user
- Users are expected to attend regular user meetings (monthly) for updates and changes to facility operation
- Failure to adhere to proper conduct and repeated misuse of equipment will subject users to retraining, penalties, or suspension

I, \_\_\_\_\_ have read and understood the above expectations for users in the CRAFT device foundry. I agree to abide by the expected behaviour and will respect the facility, staff, and fellow users. If misuse occurs, I understand that I will be subjected to consequences for the safety of other users and the instruments itself.

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User Signature

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Date

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Trainer Signature

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Date