Rev. 2 – Dec. 18, 2025

University of Oregon – Knight Campus Cleanroom

Cleanroom Guidelines for Access, Laboratory Safety and Lone-worker Policy

---

1. Purpose and Scope

This document defines access requirements, operational expectations, and safety policies for the Knight Campus Cleanroom (Rooms 020–025). It applies to all users, including faculty, students, staff, industry partners, and visitors. The Cleanroom operates as a shared research core facility and complies with University of Oregon Environmental Health & Safety (EHS) policies.

---

2. Access, Authorization, and Accounts

- **Training Required**: Prior to access, users must complete:
  - General cleanroom safety training
  - Tool-specific training
  - UO EHS laboratory safety training
- **Authorization**: Access must be approved by the Cleanroom Engineer and/or Facilities Director.
- **NEMO Account**: All users must establish a NEMO (Networked Equipment Management Operator) account to schedule and log equipment use.
- **Visitors**:
  - Must be pre-approved by the Cleanroom Engineer
  - Must be escorted at all times
  - May not operate equipment or handle chemicals
- **Building Policies**: All users and visitors must comply with Knight Campus building policies.

---

3. Gowning and Personal Protective Equipment (PPE)

3.1 General Requirements

- Gowning must be performed in designated gowning areas and in the prescribed order.
- Closed-toe shoes, long pants, and minimal or no jewelry are required to enter the gowning area.
- Gloves must be changed between processes and whenever contaminated. Contaminated gloves must not contact doors or equipment controls.

3.2 Cleanroom PPE by Area

- **Gowning Bay / Chases (Rooms 21, 22, 25)**:
  - Hairnet
  - Beard net (if applicable)
  - Disposable shoe covers
  - Gloves
- **Cleanroom Bays (Rooms 23, 24)**:
  - Hairnet
  - Beard net (if applicable)
  - Booties
  - Cleanroom Hood
  - Cleanroom gown
  - Gloves
  - Cleanroom boots
  - Safety glasses
- **Acid Bench (Lithography Bay 24)** additional PPE required:
  - Face shield
  - Acid apron
  - Acid-resistant gloves (e.g., colored or Trionic gloves)

---

4. Cleanroom Entry, Exit, and Contamination Control

- All items entering the cleanroom must be wiped with IPA or ethanol using cleanroom wipes.
- Cardboard, paper, wood, Styrofoam, personal bags, cosmetics, perfumes, lotions, food, and drink are prohibited.
- Materials must be transferred via pass-throughs; doors must never be propped open.
- Only cleanroom-compatible materials, tools, and containers may be used.
- New chemicals may not be introduced without Cleanroom Engineer approval, proper labeling, and an accompanying SDS.
- DO NOT PROP OPEN DOORS

---

5. Tool and Equipment Use

- All equipment use must be scheduled and logged in NEMO before and after use.
- Only trained and authorized users may operate tools.
- Equipment must be left clean, operational, and ready for the next user.
- Tool modifications or software changes are prohibited without written authorization.
- Any malfunctions, alarms, or abnormal behavior must be reported immediately to cleanroom staff.

---

6. Chemical Handling and Hazard Communication

- Follow all approved Standard Operating Procedures (SOPs) and the UO Chemical Hygiene Plan.
- Perform chemical work only at designated benches using appropriate PPE.
- All containers must be labeled with:
    - Full chemical name
    - User name
    - Date
    - Hazard information
- Secondary containment is required for liquid chemicals.
- Chemicals may not be mixed unless explicitly required by an SOP.
- A buddy system is required for hazardous chemical work and some after-hours activities.

---

7. Waste Management

- Waste must be segregated, labeled, and disposed of according to UO EHS requirements.
    - Sharps, liquid waste of various types, and contaminated solid waste are common waste types in the facility.

Solid Waste:

- Broken glass and non-contaminated sharps can be collected in the broken glass waste container
- Sharps waste: (razors) must be collected in the red plastic bins, which are located on the bench tops.
- All non-sharps waste will be placed in white waste bins, contaminated waste must be recorded on EHS waste tag, attached to waste bins and in red metal trashcans.
- Empty photoresist jars are collected separately from contaminated waste in plastic tote under the spinner bench

- Empty chemical bottles are to be rinsed minimum of 3x and can be placed in container for recycling

- Non-contaminated glass: broken glass containers
- Sharps (e.g., razors): red sharps containers
- Contaminated solids: labeled waste bins with EHS waste tags

Liquid Waste:

- Most acid/base waste can be slowly poured into the acid waste drain, located in the acid/base bench. Only the cleanroom engineer is allowed to send the waste to the neutralizer – which will be coordinated with EHS to allow for monitoring of the waste stream affluent. Contact cleanroom engineer if the waste drain is not draining and filled at any capacity.
- Acid/Base waste that contains high amounts of dissolved metals is not compatible with house neutralization system and must be captured in a labeled container per EHS waste tag standards (date from the first drop must be recorded as well as the name of the waste, amount, and contact info.) Liquid waste containers will be stored under respective acid, base, or solvent benches. When ¾ full, or 6 months past date of first drop added they must be disposed. Contact cleanroom engineer to facilitate disposal, or cc cleanroom engineer on a pickup request to EHS. For ease of pick up, waste containers may be moved to the chase and sat on a cart that is lined with spill pads.
- The Cleanroom Engineer coordinates hazardous waste disposal, with user assistance as required.

---

8. Housekeeping and Cleanroom Etiquette

- Maintain clean and orderly workspaces.
- Return tools and materials to their designated storage locations.
- Dispose of consumables properly.
- Avoid unnecessary noise and conversations.
- Do not touch surfaces with bare hands or contaminated gloves.

---

9. After-Hours and Lone Worker Policy

Before working alone, you should:

1) Ensure that you have been trained in the procedures, reviewed the safety data sheets for all associate materials, and know the emergency procedures for your lab.
2) Consider whether the risk outweighs the benefits of working alone.
3) Consider whether this work can be done at a time when others are around.
4) Consider using a buddy system with individuals in other labs nearby.

If you decide to proceed with hazardous procedures on your own, please use a check-in or text-in system with **supervisors or peers, or the Cleanroom Engineer ensuring that they know where and when this work is done and that they have contact information readily available for campus safety personnel.**

Restrictions for After-hours and lone workers:

- Some tools and processes require pre-approval or a buddy system after hours. Inquire with Cleanroom engineer before using facility after hours or when working alone.
- No use of:
    - Concentrated acids or bases (>5%) after hours without approval
    - Hydrofluoric acid (HF) or HF-containing etchants after hours
- Fully trained users with PI approval may work alone, except for prohibited activities.
- Prohibited lone-work activities include acid etching, resist development, wet bench use, and equipment troubleshooting involving gases, lasers, wiring, or plumbing.
- Lone Worker Policies must be completed and followed and are included as an appendix to this plan.

Other safety considerations for working alone in this laboratory:

- No equipment troubleshooting involving venting of main chambers, the disconnection, or swapping of gases from equipment, inspection of laser sources, messing with wiring, or unclogging sinks is permitted by users working alone, and are general not-permitted at all by users.

---

10. Emergency Procedures and Incident Reporting

- All accidents, spills, near misses, and safety concerns must be reported immediately to the Cleanroom Engineer and/or Facilities Director.
- SDS/MSDS sheets located in gowning room near PC.
- Hard wired phone located in gowning room near PC.

- Emergency gas shutoff stations (blue) and fire pull stations (red) are located throughout the facility.
-
    - **Users must know the locations of:**
        - Emergency exits
        - Eye wash stations
        - Safety showers
        - Fire extinguishers
        - Spill kits
        - Gowning Room pressure release buttons – (located inside and outside gowning room door, and east tidy chase)
- In case of spill or accident:
    - Evacuate if necessary
    - Seek safety shower, if necessary
    - Immediately notify cleanroom staff and emergency contacts if needed.
    - Complete an incident report, if necessary.

Alarms

- Tool Alarms
    - Report all alarms to Cleanroom Engineer
    - If an alarm is silenced by a user, contact cleanroom engineer and/or KC Facilities Staff immediately.

    - Toxic Gas Monitoring System (TGMS)
        - In event Blue Strobe and pulsating horn (100dB) will alarm- **EVACUATE IMMEDIATELY!**
        - There are also (6) emergency gas off pull stations throughout cleanroom – these are Blue.
    - Fire System event
        - (Clear Strobe) and human voice notification followed by pulsating horn (90dB). **EVACUATE IMMEDIATELY!**
        - There are also 2 fire pull stations located outside Main changeroom entrance and East Tidy Chase entrance. These are Red.

Evacuation Exits

- Prepare for and follow UO evacuation guidelines here: https://safety.uoregon.edu/evacuations
- Knight Campus Cleanroom and chase areas: two main exits from this location in Knight Campus basement are the East Tower stairwell and 1st Floor North doors. Make your way as quickly and calmly as possible to leave the building through one of these exterior doors, and assemble at a safe distance away from the building.
- In case of fire, users may have to release pressure from gowning room, or chase to exit. There are red buttons labeled HVAC SHUT-DOWN adjacent to yellow sign

instructions located on the wall near the exit doors to release room pressure. Press button, wait five seconds, then exit. This button also exists on the exterior walls near the exits, for assistance from the outside.

Incident reporting

The UO's Laboratory Incident Response Guide can be found here: https://safety.uoregon.edu/sites/safety1.uoregon.edu/files/1.2019_laboratory_incident_response_guidelines_0.pdf

Cleanroom Engineer will submit a Lab Incident Report to EHS for any emergent chemical or hazardous material spills or injuries. If an employee is injured a Workplace Injury Report will also be submitted. These will be submitted as soon as practical following the incident. All users are expected to report accidents, spills, near misses, and any safety related issues to the facility engineer.

Emergency Contacts

- **Emergency Services**: 911
- **UO Police (Emergency)**: 541-346-2919
- **Cleanroom Engineer**: Sean Harris | sharri13@uoregon.edu | 541-346-4534
- **Facilities Director**: Greg Normandin | gregn@uoregon.edu | 541-346-7052
- **Research Core Facilities Director**: Kurt Langworthy | klangwor@uoregon.edu | 541-346-3660

11. Enforcement

Failure to comply with cleanroom policies may result in warnings, suspension, or permanent revocation of access. Serious violations will be reported to university leadership and EHS.