Carleton Lab is an active heavy civil engineering testing lab. This lab is not only subject to the standard safety regulations for chemical labs, as mandated by EH&S and FDNY, but also further safety regulations that are common in manufacturing facilities and construction sites.

RULES OF CONDUCT
• Guests must register with lab management. “Browsing” of the lab is dangerous and will result in expulsion from the premises.
• No person is allowed outside of white lines without completion of Machine Shop Safety Training and receipt of Carleton Lab safety sticker.
• No laboratory property may be removed from the premises unless authorized by lab management.
• The entire lab is an active forklift and crane lift area. Persons without rigging training must always yield to cranes and forklift.
• Eating and drinking is prohibited in active lab space.
• Open shoes, high heels, loose clothing, shorts, and short skirts are prohibited in active lab space.
• Lab machinery and equipment may only be approached and/or operated with the express training and permission of the lab staff.

FLOOR MARKINGS
- Important: colored cones forming a line are equivalent to floor lines.
- Traffic Area — main traffic routes through lab; keep area clear of obstructions; beware of moving vehicles. Persons without safety training are to remain in these areas unless authorized by lab staff.
- Physical Hazard Area — this area contains a physical hazard, entry with express permission by laboratory staff only.
- Clean Area — enter only with clean clothes and shoes, and do not bring tools, chemicals into space. Food and drink are allowed in this area.

CEILING LIGHTS
- Fire Equipment

STROBE LIGHTS
- Amber — active forklift and/or crane, yield to horizontal/vertical transportation and rigging at all times.
- Green — hazardous test in progress, enter area only with express staff permission. Tests may be automated, so staff may not be present.

AUDIBLE WARNINGS
- Siren (high pitch) — single blow signal when remote control crane is activated. Operator may also blow siren to signal users to clear area.
- Buzzer (low pitch) — signal used to warn persons of active testing
  • one blow — prepare for test, clear area
  • two blows — area clear, test commencing — blown before each test
  • three blows — test completed, area safe
- Bell — fire alarm, evacuate building immediately, close but do not lock all doors on the way out.

Important: The Engineering Terrace building is equipped with a NYC Code Fire Alarm System; this system will only sound two sets of four bell rings. All personnel must evacuate, even if the bell stops ringing.

ACCESS & SECURITY POLICY
Access to Carleton Lab is controlled by Columbia University’s proximo access system as well as a closed-circuit cameras. It is a violation of policy to swipe in unauthorized persons and will result in disciplinary action and loss of laboratory access.

CLASS ACCESS
Undergraduate and graduate students taking a class that contains a laboratory teaching component must apply for Class Access via the Carleton Laboratory website after completing online shop safety training. Access is restricted to the meeting time of the lab class and rescinds upon completion of the class. This application must be filed with the laboratory only once. Access will be granted automatically for all future classes if the student is registered for the class.

Absolutely no independent work may be performed with this level of access.

RESEARCH ACCESS (INCLUDING SEM RESEARCH ACCESS)
All undergraduate and graduate engineering students may apply for daytime lab access via the Carleton Laboratory website only upon completion of online safety training. Students who are working in the Carleton Laboratory on research projects beyond normal business hours will have to apply for 24 hour access. Mezzanine access may be granted to students with labs on the mezzanine level. All persons working in active laboratory areas outside of lab operating hours must obtain a C-14 Certificate of Fitness. Students using only office space within the laboratory (marked blue) must not obtain a C-14 but are strictly limited to these spaces outside of operating hours. Research access permissions rescind on 31 May annually but may be renewed/extended online.
To apply for laboratory access, go to: http://carleton.columbia.edu/

RESEARCH ACCESS
Research Access is defined as any access to the Laboratory to perform independent work that is not directly associated with a constantly supervised laboratory class. Research includes undergraduate and graduate independent research, student club work, Ph.D. research, and use of the Scanning Electron Microscope (SEM). Undergraduate students may apply for daytime access while graduate students and researchers may apply for 24/7 access; the following requirements must be fulfilled:

1. Legitimate academic need to use laboratory.
2. Faculty liaison: all students and student groups must have a faculty advisor/sponsor
3. Certifications
   a. Carleton Laboratory Site-Specific Training – required for all persons present in the laboratory
   b. Machine Shop Safety Training – required for all persons present in the laboratory
   c. Laboratory Safety/Chemical Hygiene/Hazardous Waste/Laboratory Fire Safety Training – required for all persons with Research access permission
   d. Certificate of Fitness (C-14) - required for all persons requesting access outside of laboratory business hours. Students using only office space within the laboratory (marked blue) must not obtain a certificate of fitness but are strictly limited to these spaces outside of laboratory operating hours.
4. Access Application – fill out online application for the appropriate level of access and upload your training certificates
5. Carleton Lab Sticker: after filling out the application, go to the management office to receive your “Carleton Lab” sticker.
6. With the exception of Faculty & Staff access, all access permissions rescind on 31 May of every year.

SEM RESEARCHERS
Users of the Scanning Electron Microscope must also successfully complete SEM training and be certified by a member of the SEM super user team before starting the access application process. SEM access is a restricted profile, allowing only access to the SEM room; the rest of the laboratory is off-limits to SEM users.

VISITORS
Visitors must be appointed by the University and accompanied by an authorized liaison in order to be allowed to perform any laboratory research. Visitors without an appointment are prohibited from performing any work in the laboratory.

SAFETY TRAININGS

CARLETON LABORATORY SITE-SPECIFIC TRAINING
This training introduces Carleton Lab users to the policies and procedures pertaining to safety, hazard communication, equipment use, and emergency response. It also provides an outline to user amenities, equipment-specific training protocols, equipment reservation, machine shop use, fabrication requests, and guidance to obtaining all necessary trainings to work safely in the lab. This training program is required of all laboratory users.

Go to the Rascal Training Center to take the online Carleton Laboratory Site-Specific Training course and certification test: Training Center > Safety Courses > Carleton Laboratory Site-Specific Training.

MACHINE SHOP SAFETY TRAINING
This training program provides a basic overview of hazards associated with the use of hand and power tools that are found in academic machine shops. The training covers types of hazards, general shop safety rules, ways to keep shop clean, usage of safe work practices and use of proper personal protective equipment for the task. This training, however, is not a substitute for a machine specific safety training, which must be provided by lab staff before you use any machine in the shop.

Go to the Rascal Training Center to take the online Machine Shop Safety Training course and certification test: Training Center > Safety Courses > Shop Safety Training.

LABORATORY SAFETY/CHEMICAL HYGIENE/HAZARDOUS WASTE/LABORATORY FIRE SAFETY TRAINING
Environmental Health & Safety policy requires that all persons working with any chemicals in the laboratory be trained attend an initial training session and perform a refresher training every three years thereafter. Persons who have not completed this training will not be allowed to handle any chemicals. Please see the EH&S Website for an updated training schedule.

CERTIFICATE OF FITNESS (C-14) TRAINING
Carleton Laboratory is required to have a C-14 Certificate of Fitness holder present at any time when the laboratory is in operation. This is a simple certification by the FDNY that proves an understanding of basic fire safety in a laboratory environment. All Carleton Lab officers hold C-14 certifications, so all activities performed during normal operating hours of the lab do not require the individual user to be certified.

Any researcher who works in the Carleton Laboratory (including Burmister Laboratory) outside of normal operating hours (9:00am to 5:00pm M-F) must obtain a C-14 Certificate of Fitness. Columbia Environmental Health and Safety (EH&S) holds a one-hour certification class each week. An important qualification for this certification is a completed M.S. degree or a B.S. degree with two years of laboratory experience. A copy of your diploma must be brought to the certification session. Please see the EH&S Website for further information on the C-14 Certificate of Fitness.