

The Center for Functional Nanomaterials (CFN) at Brookhaven National Laboratory is a Nanoscale Science Research Center, operated as a National User Facility for the U.S. Department of Energy. The CFN mission is to support the worldwide nanoscience community by providing leading capabilities and expertise, and to deliver breakthrough nanoscience discoveries through a program of internal research.

CFN on-site operations are currently in “Limited Operations,” and staff and users continue to practice basic hygiene and risk mitigation procedures that control the hazard posed by the SARS-CoV-2 coronavirus.

CFN staff and users have extensive experience working with materials and processes that present significant hazards, including nanomaterials, chemicals, lasers, and high-voltage. We control these hazards by understanding the dangers they pose, respecting the risks they pose to our safety, and then implementing trustworthy controls to mitigate these hazards so that work can be performed safely.

The CFN mitigates the SARS-CoV-2 workplace hazard similarly to the ways we deal with other significant hazards. We will continue to examine all aspects of CFN work practices, adapting them to control for this hazard and establishing new, trustworthy protocols where needed. SARS-CoV-2 will be a workplace hazard for the foreseeable future, so CFN practices must be sustainable.

CFN Limited Operations Plan

The CFN Limited Operations Plan consists of multiple elements each described in more detail in the sections below:

1. Procedures to control for SARS-CoV-2;
2. Communicating with staff and users about CFN operational changes;
3. Training CFN users on new procedures;
4. Implementing procedures for controlling the number of CFN users in the facility.

Section 1. Procedures to control SARS-CoV-2

The CFN mitigates the SARS-CoV-2 workplace hazard using an array of multiple controls — each individually imperfect, but highly effective when used together. An important element of this plan is returning staff to the facility to practice these procedures, so that they learn them, improve them and become able to teach them to users. **The seven pillars of the CFN control strategy are:**

- Vaccination
- COVID Testing
- Telework
- Self-screening
- Distancing, face coverings, physical barriers
- Cleaning and Hygiene
- Culture

Pillar 1: Vaccination

Highly-effective COVID vaccines are now available, with the promise of others in the future. Individuals age 16 and older who reside in New York are eligible for vaccination. The more people who get vaccinated, the more protected we all will be from COVID-19.

Pillar 2: COVID Testing

COVID testing is now prevalent and easily accessible. BNL provides periodic onsite testing for staff. Staff should take advantage of this control, by getting tested after any out-of-the ordinary activity (such as travel), or potential exposure.

Pillar 3: Telework

CFN staff follow a predetermined telework schedule to reduce building occupancy. The schedule will be structured so that CFN can execute both parts of the user and internal research mission. The telework schedule balances the following considerations:

- Ensure sufficient on-site expertise during each workday.
- Align with overall BNL staffing level targets during each phase of operations.
- Ensure that staff teams working on common projects are onsite at the same time.

The CFN telework schedule can be viewed at the URL below. The schedule is in constant revision to allow for changing conditions. https://docs.google.com/spreadsheets/d/e/2PACX-1vS4LFMMjF_rWJn5UKRsm1Y-czymCeVc-B2qfQjeMz46o6e2TBNG_mIGlxb8hFSMvfQYT76gm2KXV1L/pubhtml

It is essential that we follow the roster. An accurate roster is needed in case of building evacuation. Roster slots are needed for those who must be onsite to do their work.

- Work with your manager if you need to adjust schedule
- If your plans change and you can't be onsite, tell your manager
- Use the AM or PM options if you are only onsite half-day

Pillar 4: Self-screening

Self-screening for symptoms of illness before entering the site is a known way to prevent sick people from coming to work. BNL requires all staff, users/guests to attest that they performed a self-screening when entering the front gate.

CFN will rely on everyone performing this daily task, recognizing symptoms, and staying home when sick. Self-screening is a hazard control of equal importance to others, such as wearing a mask. The plan relies on all staff and users diligently practicing this control.

Pillar 5: Distancing, face coverings, physical barriers

Maintaining physical distance and inserting physical barriers between people have been highly effective controls for preventing transmission of SARS-CoV-2.

Common Areas

- Because the hazard posed by SARS-CoV-2 extends beyond the laboratories into the entire workplace, occupants must be mindful of this and other controls from the moment they enter the facility, as well as beforehand.
- Consistent with BNL policy, everyone entering the CFN will wear a cloth face covering. Face coverings may be brought from home. CFN will make a supply of coverings available for those who need one.
- Everyone inside the CFN will maintain a social distance of at least 6' separation at all times, except when separated by physical barriers .
- The CFN will not allow congregating in hallway interaction areas, lobby, and upstairs atrium. Seating is removed from these areas.
- The occupancy of single-person offices and cubicles is limited to one person.
- Occupancy of three-person offices will be limited to two people, with the middle desk vacant to provide physical separation. We will arrange work schedules to minimize/eliminate times when both occupants are onsite at the same time. Both people will wear masks when occupying the office at the same time. The protocol for visitors will be to knock on the office door and stand back in order to provide sufficient distance when the occupant answers the door. Floor markings denote the appropriate standing locations.

Office Space

CFN office space is private space. Only the office occupant is permitted to enter their space. Occupancy of single-person offices, and cubicles is limited to one person. BNL custodians will not enter to clean office spaces. Office occupants may remove face coverings when in their office space, with door closed.

Working in laboratories

- Entering many CFN laboratories already requires wearing PPE and following certain procedures. We will augment these practices with others to control for SARS-CoV-2.
- Upon entering any lab, everyone will replace their face covering with a disposable one supplied by the CFN.
- The gowning protocol is to put on disposable face covering first, then other lab PPE, and gloves last.
- Laboratory maximum occupancy is determined by the Group Leader that oversees each space. Occupancy will be signaled by sight. People waiting for lab entry will queue sufficiently far away to allow safe egress.
- Whenever possible, use of lab instrumentation will be scheduled using the Facility Online Manager (FOM) so that people can plan their work schedules.

Training users and instrument support

- Activities, including training people to use instruments, performing laboratory procedures, and providing instrumental support are best performed in-person, with people who may come in close contact for brief periods of time. These practices are an essential part of CFN operations, but also present medium-risk activities.

- All training will be peer-to-peer, with no more than two people interacting.
- When conversing during training, people will maintain separations of 6 feet when possible.
- Face coverings will be worn at all times. In addition, use a barrier or shielding between two people, or double-mask when brief, close contact (< 6 feet) is needed.
- CFN staff are exploring opportunities for incorporating methods for remote training and/or instrument support, when appropriate. These will be implemented in cases where they are effective but will not substitute for in-person interactions when those are the more appropriate forum.

User Office

- The CFN User Office is a high-traffic gathering spot for both users and staff. CFN will implement new procedures to mitigate the hazards of these close interactions.
- When possible, staff and users will interface with the user office remotely. For example, we will transition the COSA training form from paper to scanned pdf.
- Entry to the user office will be limited to a single person at a time, in addition to the two staff members who staff the office.
- A plexiglass barrier will separate the staff member from the visitor.
- A basket where visitors can leave papers will be located inside the office.
- The user office visitor will stand 6' away from the user office desk when conversing, and approach closer only briefly, if needed. The standing location will be marked on the floor.
- Outside the user office, tape marks at 6' intervals will be marked to guide visitors in the event of a queue. People waiting for user office entry will queue sufficiently far away to allow safe egress.

Seminars and meetings

Research seminars will continue to be conducted remotely. Whenever possible, meetings will also be conducted remotely. Necessary in-person meetings will be conducted in the CFN seminar room, or outside, to allow sufficient space to maintain social distancing. Meeting participants will wear face coverings during in-person meetings.

Kitchens

It is not possible to maintain appropriate social distance in any of the three CFN kitchens. Kitchen seating is removed and no gathering inside is allowed. Kitchen occupancy is limited to one person, with occupancy signaled by either the overhead light or when the occupant is within line of sight. People waiting for kitchen entry will queue sufficiently far from the doorway to allow safe egress.

Bathrooms

It is not possible to maintain appropriate social distance in any of the CFN bathrooms. Bathroom occupancy will be limited to one person, with occupancy signaled by sight. Bathroom doors will be fixed open to eliminate the need for touching. People waiting for bathroom entry will queue sufficiently far from the doorway to allow safe egress.

Elevator

It is not possible to maintain appropriate social distance in the CFN elevator. Elevator occupancy will be limited to one person. People waiting for the elevator entry will queue sufficiently far away to allow safe egress.

Pillar 6: Cleaning and Hygiene

Hand-to-face contact is also a known vector for transmitting SARS-CoV-2 and other respiratory illnesses. In order to mitigate this risk, the CFN will implement new cleaning and hygiene practices.

Hand Hygiene

- Washing hands 5 times per day is known to reduce respiratory infections by ~50%.
- CFN staff and users will practice hand hygiene after every community activity involving touching something in a public space.
- Everyone will practice hand hygiene immediately upon exiting a lab, before any other activity.
- Handwashing using soap and water is preferred. Hand sanitizer dispenser are located throughout the CFN and should be considered supplements to hand washing.

Cleaning

- BNL custodial staff will continue cleaning support for the CFN building (restrooms, kitchens, handrails, door handles, light switches, tables).
- It is highly recommended to wash hands after using high-touch surfaces.
- When performing lab work requiring safety glasses or goggles, it is preferred that people will use their own. Shared safety glasses and goggles will be cleaned with disinfectant before and after each use.
- When performing lab work requiring face shields that are shared, the protocol is to clean them before and after each use.
- CFN and BNL will provide cleaning supplies (cleaner, wipes) and PPE (gloves) to all staff members for use in maintaining cleanliness.

Reducing need to touch high-touch surfaces

- When allowable by the fire codes, CFN internal doorways will be fixed open to eliminate need for touching (e.g., bathroom doors, user office door)
- CFN will adopt electronic documents wherever possible to reduce/eliminate the need for passing paper.

Pillar 7: Culture

CFN must maintain a culture where all staff, students, users, and visitors are empowered to point out when people are not following these work practices. Everyone must understand and share the responsibility for correcting others, and also feel comfortable being corrected by others.

Practice of this important hazard control must span across job title, age, seniority, social culture, and any other perceived hierarchy. CFN staff must set the tone and lead by example.

Section 2. Communicating with staff and users

The CFN Operations Plan has resulted from close collaboration and input from all staff members. New safety protocols will similarly be developed together, with feedback on improvements from staff who practice them during each phase of the plan).

The User Office and User Points of Contact will be the primary interfaces to CFN users. We will communicate often and clearly with the user community during each phase of operations.

Users will be informed about safety-related training prior to their first return to the CFN.

Section 3. Training CFN users on new procedures

It is essential that all users understand and follow all new work procedures. We will carry out intense training for new and returning users and monitor them closely to ensure distancing, PPE, and hygiene procedures are practiced.

Every user (new and returning) will receive an in-person training on new signage, PPE, lab hygiene, and other practices, during their first visit to the CFN.

Section 4. Implementing procedures for controlling the number of CFN users in the facility

- A key element of the CFN Limited Operations Plan is planning and monitoring facility occupancy, as social distancing is a key control for mitigating SARS-CoV-2. We plan to increase facility occupancy as more operations resume but remain below full 'normal' levels for the foreseeable future.
- Staff will follow predetermined work schedules (described above, Telework). We will enforce similar schedules with users. Some of the elements of our process includes:
- Scheduling instrument and lab usage with Facility Online Manager (FOM), which is already in use on a majority of CFN instrumentation.
- Using online calendars to schedule time working in lab spaces not managed by FOM; group calendars.
- Discussions with users to schedule work shifts.