SCST Covid-19 Summer Safety Guidelines

This document defines the procedures and protocols to be used during summer research by the Biology, Chemistry and Biochemistry, Environmental and Ocean Sciences and Physics and Biophysics departments in the Shiley Center for Science and Technology. The guidance is based on our own experience as well as guidance and directives from the CDC, State of California guidance, San Diego County DHHS, OSHA and other federal agencies. The documents used to create these guidelines are linked at the end of this document. In order to enter and work in the Shiley Center for Science and Technology, all students and USD personnel will be required to adhere to these guidelines/safety principles for the protection of all those who work in SCST and the people that they have contact with when they leave the facility. Safety training will be prepared and administered via Blackboard. Training will consist of a video of the Building Manager discussing the safety guidelines. Faculty, staff and students will be required to watch the video discussing the safety measures, answer a short quiz. The quiz will allow for multiple attempts until they get the questions correct. Final results will be accessable via blackboard and maintained as we do for other safety training with both the Building Manager and each Department. The last question of the quiz will be a true false question. The question will ask if the worker agrees (a true statement) that they acknowledge that they have seen and will comply with the training. A false statement will result denial of access for summer 2020. Compliance is a community responsibility, to support well-being and safety, and it must be shared among all in SCST. Violations will result in a meeting with the student, faculty mentor and the department chair to ensure the safety measures are respected and maintained. Further violations will result in suspension of access to the SCST until the student, mentor, chair and CAS Dean (or her representative) discuss the violations and form a plan to ensure safety measure compliance.

**COVID-19 Universal Precautions**

To address the first point on individual precautions, below is the most current guidance provided by the Centers for Disease Control and Prevention (CDC). Since the most likely route of transmission is through aerosolized respiratory droplets from infected individuals and the fact that infected and contagious individuals may be asymptomatic, especially during the early stages of incubation, our goal is to limit close contact. The CDC defines close contact as being within about six feet of anyone. Faculty, staff and students should be familiar with procedures on how to protect themselves and others. Current guidance has been published by the CDC and linked in the reference section. Taking care of the individual and the community of SCST is vital. Therefore, personal universal precautions will also include:

* Wearing a face covering at all times.
* Because the virus spread is increased with close contact, a safe social distance of six feet will be required.
* Covering our own cough or sneeze with tissue or a shoulder or elbow and properly disposing of tissues
* Repeated and diligent hand-washing, especially following contact with any public, frequently-touched surfaces such as door handles, elevator buttons, handrails, drinking fountains, keyboards, etc. Soap and water is effective along with alcohol-based (>60 percent) sanitizer or wipes
* Avoid touching eyes, nose, or mouth
* Keep up-to-date on the latest information on COVID-19 from the CDC, WHO, and local public health officials
* Stay home if you begin to feel sick; have a headache, runny nose, allergies and/or a fever of 100 F or more until fully recovered
* Seek medical attention if you develop fever, dry cough, and difficulty breathing. Call your doctor or medical provider in advance for prescreening and direction to the proper health facility.
* Inform your supervisor (or your research mentor) as soon as possible if you develop any of the above noted symptoms

ACTIONS UPON NOTICE OF POTENTIAL CONTAMINATION BY A COVID-19 PERSONNEL - If upon learning that a student or a USD employee has been identified to be exhibiting symptoms or being diagnosed with COVID-19, the Student Health Center should be notified for student infections and Human Resources should be notified employee infections. The Student Health Center (SHC) or Human Resources (HR) will lead and guide all impacted workers and students on the appropriate procedure.

**Section I: Symptom Screening - Entry to the Building**

**Entry**: Access to SCST will continue to be limited to authorized USD personnel and designated research students. All entry to the building must be limited to the front entry. There will be a check-in station just inside the entry to the atrium of the SCST. Please check upon arrival that there is not a line of people waiting to enter the building. If there are others waiting to check into the building, please wait in the parking lot or other areas with as much dispersion as possible.

The station will be attended by graduate assistants, SCST staff or administrators. Screening times will be announced upon operation. Typically the times will fall between 8am and 4pm. Students and workers must clear the screening once a day or ensure compliance with San Diego county orders, whichever is more stringent.

**1** -The first portion of the check-in station will consist of having your temperature taken.

* A trained Graduate Student or the Building Manager will be using an FDA approved non-contact, infrared thermometer to read your temperature. Each time the check-in employee changes the station and equipment will be sanitized. The screener will maintain a log form of who checked in for the day. The log will be maintained by the building manager.

 Students and workers will then be asked the following standardized health questions:

* 1. Do you have a fever (100 degrees or above)?
	2. Have you had a fever within the last 72 hours?
	3. Do you have a cough?
	4. Do you have shortness of breath or difficulty breathing?
	5. Have you been to a Level 3 country (link) within the last 14 days?
	6. Do you have reason to believe that, in the last 14 days, you have been in close contact with a person who has, or is under examination or observation for having COVID-19?
	7. Have you experienced a loss of taste or smell recently?

*All individuals with positive responses will be provided medical resource information, asked to leave campus, self-quarantine and follow F20 and SHC or HR guidance*

**2 - PPE Dispensing**:

**Face coverings** : Face coverings are required at all times while in the building. For the summer (Fall semester plans are not in place at this time) students, faculty and staff will be offered 3-4 masks and porous paper bags when they first report to the building. If you have your own masks, you are permitted to use them assuming the proper care described here is followed. When not in use, each mask will be placed in a bag and remain unused for 3-5 days between use. If you forget to bring your mask or it is compromised because a strap breaks or otherwise fails, you must coordinate with a department representative.

*Re Use of Face Covering:* The CDC posts that moist heat (80% relative humidity and 70oC/158oF; achievable in an oven preheated with a pan of water) for 15-30 min was 99.9% effective as an antimicrobial and antiviral (for most viruses) for masks for 6 or more times. The CDC also recommends labeling bags and rotating through the masks allowing 4-5 days between use is for extended use. A recent study found that for N95 and other masks using temperatures which neutralize virus particles can maintain filtration as well as breathability if heated using dry heat (75oC/167oF) for 30 min. Masks were tested for 20 cycles with continued breathability and filtration performance. If the mask becomes fouled with liquid or other contaminants the mask should be discarded. These studies were not conducted using cloth or homemade masks. A large can with a lid will be designated as the disposal receptacle for masks after 6 or more uses. The receptacle will be located next to the check-in station just in front of the exit only door so that people exiting the building can easily make use of the container. The masks will be removed from the container and then autoclaved and discarded. The research mentors will work with their students to assure masks are maintained and worn properly.

**Section II: Safety and Maintenance of Common Surface Areas**

There are many commonly contacted surface areas in the SCST and limited staff to clean and disinfect those surfaces. Departments and the building manager will coordinate to ensure cleaning materials are located in and near common use and research lab spaces as well as the entrance/lobby to the building. The following is the general guidance for maintaining those sites and specific steps to ensure best possible results.

When designing cleaning and disinfecting protocols, the primary concern is the route of transmission. Current knowledge of COVID-19 is that the spread of the virus occurs person-to-person via respiratory droplets (e.g. coughing and sneezing). It is unknown how long virus particles will remain viable on surfaces where the droplets may deposit depending on the droplet size, type (saliva or mucus), humidity, temperature, and surface type. Thus it is a safe practice to treat each surface as potentially contaminated and clean before and after each use.

Common workspace will be cleaned at the beginning and the end of the shift as determined by the Dept Chairs and Building Manager. In addition to surfaces, instruments, and equipment, commonly touched surfaces (e.g., doorknobs and handles, light switches) should be cleaned by those starting and finishing their work shift. Cleaning staff will work to maintain common use exterior spaces. Research faculty is responsible for their individual laboratories and should clean access points to their room when appropriate.

Given the limited route of transmission, disinfection should be curtailed to areas reasonably expected to catch droplets, (e.g. surfaces within about six feet of an infected individual’s path through the facility or in proximity to their workstation). The aim of these procedures is to kill all surface-deposited viruses within identified areas suspected to be contaminated.

First, a period of time needs to elapse to allow potential contaminated droplets to settle to surfaces. The CDC recommends waiting up to 24 hours. However, this should occur rapidly, within seconds to an hour or so, even for very fine aerosols. While the CDC recommends opening outside doors and windows to increase circulation during this delay period, in research spaces, hoods could serve this function. *Thus surfaces should be cleaned at the beginning of each work period and at the end of the workday*.

Given the highly infectious properties of COVID-19, contagious nature of even asymptomatic persons, and exponential rise of cases in recent weeks, routine cleaning and disinfection of frequent touchpoints is recommended. The following steps provide a basic framework for daily actions:

1. Disinfection staff shall don appropriate PPE prior to working on disinfection projects. At a minimum, this should include face masks, safety glasses, and gloves (latex or nitrile).
2. Using an approved disinfection product (see instructions below), wipe all horizontal surfaces reasonably touched by all persons in the facility. This is usually from head height down to the floor. Follow manufacturers’ directions and allow to air-dry for at least 15-30 minutes. Disinfection products may be applied using pump spray bottles or lightly wetted clean cloths.
3. Wipe down PPE (safety glasses, respirators, etc.), dry, and store appropriately. Place used applicators, wipes, cloths, and gloves into plastic trash bags, seal well, and dispose in normal trash.

Disinfection of highly touched surfaces such as chairs, desktops, computer keyboards, computer displays, remotes, light switches, elevator buttons, handrails, doorknobs, doors, door push plates, card readers, refrigerator/freezer handles and their doors; equipment panels/switches, benchtops; biosafety cabinet and fume hood sashes and their working surfaces; commonly used hand tools and small objects (pipettors); and shared PPE (e.g., laser goggles). Be careful when disinfecting sensitive equipment to prevent damage or disruption of the equipment. Consult with equipment manufacturers on viable options if you have questions.

Many researchers share with other spaces like cell culture rooms, autoclaves, cold rooms, and waiting rooms. If you share space with others, you need to coordinate with them to ensure that these spaces are regularly disinfected, and that to the extent possible, use of these spaces is coordinated so that social distancing requirements can be maintained there. If possible, as you schedule activity in your lab, coordinate with others whose teams work on the same floor or hallway as you do. This will help to ensure that everyone can observe necessary physical distancing in common areas (e.g., restrooms, stairwells, hallways, elevators).

Research area cleaning guidance

1. Increase the frequency of cleaning and disinfecting, focusing on high-touch surfaces, such as doorknobs, light switches, communal rooms, countertops, buttons, handrails, tables, faucets, shared equipment, and shared keyboards. Increased frequency of cleaning and disinfecting with attention to these areas helps remove bacteria and viruses, including the novel coronavirus.
2. Practice good hand hygiene after cleaning (and always):
	* Wash hands often with soap and warm water for at least 20 seconds.
	* If soap and warm water are not readily available, use an alcohol-based hand sanitizer that contains at least 60% alcohol.

Safety guidelines during cleaning and disinfection

1. Wear disposable gloves when cleaning and disinfecting. Gloves should be discarded after each use. Clean hands immediately after gloves are removed.
2. Wear eye protection when there is a potential for splash or splatter to the face.

Cleaning and disinfection of surfaces

1. Clean surfaces and objects that are visibly soiled first. If surfaces are dirty to sight or touch, they should be cleaned using a detergent or soap and water before disinfection.
2. Clean and disinfect surfaces as soon as possible in areas where a person with respiratory symptoms (e.g., coughing, sneezing) was present.
	* Use an EPA-registered disinfectant for use against the novel coronavirus. Refer to the list of products pre-approved for use against emerging enveloped viral pathogens, or the list of disinfectants for use against SARSCoV-2.
	* Follow the manufacturer’s instructions for safe and effective use of all cleaning and disinfection products (e.g., dilution concentration, application method and contact time, required ventilation, and use of personal protective equipment).
	* Consult manufacturer recommendations on cleaning products appropriate for electronics. If no guidance is available, consider the use of alcohol-based wipes or spray containing at least 60% alcohol. The use of alcohol-based products may reduce the risk of damage to sensitive machine components. Whenever possible, consider using cleanable covers for electronics. Dry surfaces thoroughly to avoid the pooling of liquids.

The following products are effective for disinfection of hard, non-porous surfaces:

Diluted household bleach solutions (at least 1000ppm sodium hypochlorite) can be used if appropriate for the surface. Follow manufacturer’s instructions for application, ensuring a contact time of at least 1 minute, and allowing proper ventilation during and after application. Check to ensure the product is not past its expiration date. Never mix household bleach with ammonia or any other cleanser. Unexpired household bleach will be effective against coronaviruses when properly diluted. *Prepare a bleach solution by mixing 1 part bleach to 9 parts water. Best prepared daily and use no more than one week before preparing new solution*

**Departmental Owned Shared Spaces:** Each department will be responsible for their own departmental common spaces. Those spaces, such as an instrument room “owned” by a single department. The plan for these spaces will be included in the departmental specific details.

**Interdepartmental Common Spaces:** There are several shared spaces commonly used by multiple departments. Hallway, and exterior lab spaces will be cleaned by cleaning staff. Cleaning staff is not expected to disinfect inside of research spaces. They will continue to maintain research laboratory spaces as they have in the past. Break Rooms will be maintained by cleaning staff. However use will be limited to one person at a time and cleaning will be the responsibility of each user after each use. Common workspaces shared between departments will be coordinated with the appropriate department. These common spaces / rooms will be cleaned at the beginning of each day with assigned staff and coordinated with the building manager and dept chairs.

**Section III: Individual Laboratory Spaces**

Each research faculty will serve as the local expert and supervisor in their research laboratory. Facilities management are not cleaning inside of the research spaces except routine work performed prior to COVID. See section II for responsibilities and expectations for shared spaces. As per any safety issue, the research mentor/faculty is responsible for a culture of safety for their students in their research spaces. The overarching principle is to minimize risk and hazard to students, staff and faculty while conducting research. The following are guidelines to decrease hazard while working in the research labs:

* Each PI should maintain a log of the student/staff that worked in their space.
* Non-essential in-person activity in laboratories is discouraged and we strongly encourage that all possible non-essential research work be migrated to online / work-from-home modes.
* If a laboratory member and/or one of their household is sick, please inform them to stay home and self-quarantine. They should inform the PI and/or laboratory manager of their status.
* The implementation of robust social distancing measures among personnel in your research spaces—for example, by mixing remote work, onsite work, staggering schedules, and by holding meetings by teleconference—should be developed immediately.
* As we have limited space in our research labs, communicate and coordinate the use of the space. If multiple students are present, assign a workspace that is more than 6 foot from the next. For faculty with larger student groups, work with the dept chair and other faculty to divide up teaching space to ensure safe distancing.
* Where possible, common use tables could serve as an alternative space for students to work on reading papers or working on data analysis giving more room for students to work at the bench.
* A face coverings must be worn at all times
* Hand washing should be conducted frequently with soap and water for 20 seconds. Hand sanitizer is not a substitute for hand washing in the laboratory.
* A thorough cleaning and disinfecting of entire laboratories will be periodically conducted by Facilities Services. In addition, the research mentor and/or their students should routinely disinfect common laboratory areas and touch points with fresh bleach (e.g. door knobs, sink handles, freezer doors, fume hood sashes, telephones, etc.) as described in this document.
* As possible, departments will provide hand sanitizer and cleaning (bleach or other) wipes in common spaces, teaching labs, and research spaces.
* When close quarters are required for very brief periods of time, a face mask in combination with a face shield should be worn by both parties.

Each faculty will be responsible to create a safe environment. To achieve this goal, the approach will be dependent on the type of research being conducted in the various labs and spaces. A faculty who primarily works in the field will have a different need than someone working on a synthetic problem or one who might be growing organisms. Thus there are many ways to comply with the safety needs and it will be up to the research mentor to decide how to best do so. A few suggestions are below:

* Depending on room size - the maximum limit to achieve the six foot distance will likely be 3 or 4 total individuals in the lab. Use your particular alignment to determine what will work for you and set that as your limit. Place a COVID-19 Capacity Sign on your door to make enforcement easier.
* If you have more people than space to work in the lab at one time, as mentioned above, coordinate with your department chair to reserve space in the teaching laboratories. As all summer classes are now remote, there are more spaces available.
* Some may consider doing a half day shift for larger research groups. Other options include alternative weeks or rotating days of time in the lab.
* When close physical interaction is required (for example at an instrument) the mentor should ensure there isn’t a way to do this while maintaining distance. If a close interaction does occur face shields in combination with face masks can help minimize the potential for transmission. Face Shields will be supplied as needed. They are reusable face shields that can be cleaned for reuse. Locations and numbers of face shields will be identified by each department chair.

**Section IV: Department Specific Safety Guidelines**:

 Each department will generate and maintain their own specific safety guidance for departmental specific areas. These guidelines are to be maintained and regularly updated by each department. Information will be available and maintained by the department chair.

***Biology***: TBA

***Chemistry and Biochemistry***: Chemistry and Biochemistry shared spaces - There are a few shared spaces including the NMR room, instrument room, (need to identify the rest of these spaces). Maintenance of surfaces and instruments in these rooms will be the department’s responsibility. After use of the area, student or research mentors will wipe down surfaces using sanitizing wipes available in each room. At the end of each day the department will assign one person to wipe down spaces and appropriate surfaces.

Teaching Laboratories - Depending on needs, the department will divide adjacent rooms between research faculty. Following CDC guidelines (open windows and doors to reduce time of aerosolized particles, the hoods should remain open and on. A map defining which research group is responsible for each space as well as maximum capacity will be placed on each door. The assigned research group will be responsible for wiping down surfaces at the end of the research day.

***Environmental and Ocean Sciences***: Departmental vehicle use and boat use for research will be restricted to usage which enables compliance with social distancing guidelines and pre- and post-use sanitation protocols established by the department.

***Physics and Biophysics***: TBA

**Section V: References**

*This document uses sections of and refers to the following references:*

1. [Dept Health and Human Services OSHA Guidance for Preparing Workplace for COVID-19](https://www.osha.gov/Publications/OSHA3990.pdf)
2. [Interim Recommendations for U.S. Community Facilities with Suspected/Confirmed Coronavirus Disease 2019 (COVID-19)](https://www.cdc.gov/coronavirus/2019-ncov/community/organizations/cleaning-disinfection.html)
3. [Lab Manager COVID-19: What You Need to Know and What You Should Do Now](https://www.labmanager.com/lab-health-and-safety/covid-19-what-you-need-to-know-and-what-you-should-do-now-22022).
4. [CDC COVID-19 Decontamination and Reuse of Filtering Masks](https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/decontamination-reuse-respirators.html).
5. [University of Arizona COVID-19 Guidance for Research Safety](https://research.arizona.edu/covid19/guidance/research-safety)
6. [UCSD Laboratory Research and Requirements](https://blink.ucsd.edu/safety/research-lab/covid-19-requirements.html)
7. [CDC: How to Protect Yourself & Others](https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/prevention.html)
8. [Can N95 Respirators Be Reused after Disinfection? How Many Times?](https://pubs.acs.org/doi/10.1021/acsnano.0c03597)