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Coastal and Marine Institute Laboratory Handbook: Information, Guidelines, Rules, and Responsibilities

Welcome to CMIL

The Coastal and Marine Institute Laboratory (CMIL) is a marine science research facility administered by the College of Sciences at San Diego State University (SDSU) and owned by the SDSU Research Foundation. Working at CMIL is a privilege, and you are expected to adhere to the guidelines, rules, and responsibilities set forth by the CMIL Director and Lab Manager.

Code of Conduct

The Coastal and Marine Institute Laboratory (CMIL) is committed to creating an environment that is professional, ethical, inclusive, and consistent with [San Diego State University \(SDSU\) regulations and standards of conduct](#). The Director of CMI and the CMIL community as a whole expects that CMIL members will demonstrate respect, integrity, and accountability in all endeavors. Individuals using CMIL facilities are expected to contribute to an inclusive environment that respects all members of the CMIL community, regardless of personal identity, academic standing, perspectives, or experiences. All CMIL faculty, staff, students, volunteers, and visiting researchers are expected to treat others and the facilities with respect and consideration, behaving as positive members of the community.

The University prohibits all discrimination, including that based on race, color, creed, religion, national origin, citizenship, sex, pregnancy, age, marital status, sexual orientation, gender identity or expression, genetic information, dis/ability, or veteran status. Discrimination and harassment (including sexual harassment) are defined by the [University Senate](#) in the [Nondiscrimination and Equal Opportunity Code](#) and in the University's [Standards for Student Conduct](#). Retaliation for reporting inappropriate behavior is also prohibited, as is falsely reporting an incident.

Users wishing to report a violation of the above-referenced standards of conduct can contact any member of the [CMIL staff](#). If you wish to remain anonymous when reporting a complaint, you may do so by using the [CMIL User Feedback Form](#), which is automatically sent without identifying information to the Laboratory Manager and Director. Any complaints or incidents involving CMIL staff can be reported to the [Dean](#) or [Associate Dean](#) of the [College of Sciences](#). Complaints regarding discriminatory conduct by University faculty or staff can also be reported to the [Office of Employee Relations and Compliance](#) (619-594-6464, erc@sdsu.edu), and complaints regarding inappropriate conduct by SDSU students can be reported to the [Division of Student Affairs](#) and/or to the [University's Title IX Office](#). Finally, any member of the CMIL community who feels unsafe or physically threatened due to the conduct of another person can contact the [University Police Department](#).

Incidents of inappropriate behavior at CMIL are taken seriously. Complaints will be referred to the appropriate University officials for investigation and, if warranted, disciplinary actions. These actions could include meeting with administrators or losing access to CMIL.

SDSU has resources for victim support, which can be accessed at <https://titleix.sdsu.edu/>. CMIL users from San Diego State University should note additional related University policies, which can be found at <https://titleix.sdsu.edu/general-info/sdsu-statement-of-non-discrimination>.

Personnel

Research and diving operations through CMIL are the responsibility of the CMIL Director, Lab Manager, and Diving Safety & Boating Safety Officer (DSO/BSO). Please keep in mind that the DSO/BSO position is part time and offers limited availability, so response times may vary. If you cannot reach personnel immediately, please leave a detailed phone or e-mail message. In the event of a fire, medical, or police emergency, call 911. Other personnel to be contacted in case of an emergency are posted near the main phone in the CMIL Analytical Lab.

For a complete listing of CMIL faculty and staff, and for more information on CMIL facilities, visit <https://cmi.sdsu.edu/>.

CMIL Director. The **Interim Director, Dr. Luke Miller**, oversees activities and research conducted at CMIL. The Director interfaces with the Lab Manager concerning operations and issues pertaining to the facility. For issues pertaining to the CMIL facility or its operation, contact the Lab Manager by e-mail to provide a record of your request, copying the Director. The Lab Manager will discuss particular issues with the Director if it is unclear how they should be resolved. You can also contact the Director directly (Phone: 619-594-5391; Email: luke.miller@sdsu.edu) if you feel that your issue has not been resolved.

CMIL Lab Manager. The **Lab Manager, Renee Angwin**, coordinates all research and facility-related operations. If you need assistance, have any questions, or encounter any issues at CMIL, contact Renee directly (Phone: 619-221-0701 (office), 516-658-5910 (cell); Email: rangwin@sdsu.edu). You may also report issues regarding CMIL using the [CMIL User Feedback Form](#).

SDSU Diving Safety and Boating Safety Officer (DSO/BSO). The **Diving and Boating Safety Officer (DSO/BSO), Mike Anghera**, is responsible for the research diving and boating programs at SDSU, as well as the maintenance of CMIL boats and trailers. *See the sections on Boating and Diving for more information on engaging in these activities.* Contact Mike (Cell: 805-698-1004; Email: manghera@sdsu.edu) with any questions pertaining to diving or boating as it relates to your research at CMIL. You may also report issues pertaining specifically to diving and boating using the [Diving & Boating Issue Reporting Form](#).

Safety

Emergency Protocol. In the event of an emergency (e.g. fire, flood, tsunami alert, earthquake, power outage, chemical spill, gas leak), evacuate the building immediately. CMIL staff will notify everyone concerning the nature of the emergency, when it is safe to return, and whether any action is required on your part. For more information on specific protocols, refer to one of the CMIL Emergency Response Plans located in labeled drawers throughout the facility.

First-aid kits and spill response materials are located throughout the lab in labeled cabinets. There are two emergency showers, one in the analytical lab by the student desks and the other

by the temperature-controlled rooms. Eyewash stations are located at the sinks directly across from both emergency showers.

IMPORTANT: If you think that there are safety issues with electricity, seawater, shop use, equipment operation, or anything else at CMIL, please contact the Lab Manager and Director immediately, who will work to resolve it as soon as possible. **If you are subject to an injury or possible injury** while working at CMIL or in a CMIL-related activity, seek medical attention immediately and notify the Lab Manager and Director as soon as possible thereafter for reporting procedures.

In the case of emergencies that require urgent attention where the Lab Manager or Director cannot be reached, contact the SDSU Research Foundation Facilities hotline at 619-594-5761 for immediate assistance

Security. CMIL is off-limits to the general public, except for designated tours and events approved by the Lab Manager or Director. The doors to access CMIL through the main and side entrances, including the door to the wet lab, are to remain closed at all times and locked after 5 pm in the evenings. Do not prop open any doors to the outside boat yard/mesocosm area unless you will remember to close them when you are finished. The last person to leave CMIL at night is responsible for locking all gates and doors. If you are uncertain whether you are the last person at the lab, please assume that this is the case and proceed to lock all doors and gates. **When working at CMIL during the weekend or holidays, it is especially important to keep doors locked and ensure security.** If such security measures are not followed, offenders will risk losing their access to CMIL.

Keys and parking permits are available from the SDSU Research Foundation and access must be approved by your advisor and the Lab Manager. Please discuss what keys you will need while working at the CMIL with your advisor, and complete the Key Request Form from the CMIL website at <https://cmi.sdsu.edu/forms-and-docs/>. Please initiate this request at least **TWO WEEKS in advance** of your need to begin accessing CMIL. Once you are notified that your keys are ready, please pick up keys at the SDSU Research Foundation (SDSURF) Human Resources Department:

SDSU Research Foundation Human Resources
Gateway Center, 4th Floor
5250 Campanile Drive
San Diego, CA 92182

To obtain keys at the SDSURF, be ready to show your SDSU Red ID card. After receiving your keys, you may pick up your parking permit from the Lab Manager. Although CMIL is generally a safe environment, items do disappear from time to time; all unattended items are at your own risk. It is highly recommended that you clearly label and store your research equipment to help ensure that they are used without permission.

Non-Approved Visitors. If you see a stranger walking through the lab or parking in the CMIL lot and you think they may not be associated with CMIL activities, please contact the Lab Manager, who will investigate or call the police if necessary. All guests must be in the company of a CMIL

user (faculty, student, or staff). Visiting faculty or students who will be working temporarily at CMIL should request keys through the appropriate faculty collaborator. For short periods of time, CMIL faculty or researchers may lend keys and permits to their visitors, provided that the Lab Manager and Director are notified beforehand. Temporary parking permits are available for visitors and can be issued by the Lab Manager on a short-term basis.

Children at CMIL. CMIL houses dangerous chemicals and equipment. Short, supervised visits to the lab are allowed under direct supervision of a parent or authorized adult for field trips and other activities in promoting science. SDSU policy states: "... children are not authorized to visit laboratories and shops, except as a participant in a formally sponsored tour or educational program, or as the guest and under the supervision of a parent or guardian who is a University student, faculty, or staff member. Further, as a matter of general University policy, children of University students, faculty, and staff members are not authorized to be in laboratories or shops on either an attended or unattended childcare basis." For the purposes of this policy, "children" are minors under 18 years of age who are not students or employees of the University. Children can be in offices or meeting rooms but also require direct supervision. Children are allowed on boats if for an approved CMIL-related outing, but a parent or guardian must sign their waiver and they must be directly supervised and wear a life jacket at all times.

SCUBA Diving. SDSU is a member of the American Academy of Underwater Sciences (AAUS), which oversees scientific research diving. If you are a certified diver with plans to conduct scientific research underwater using SCUBA, you must have a research diver certification through AAUS and receive clearance from SDSU. Please contact the DSO/BSO to sign up for an AAUS certification class or to schedule a check-out session if you have received this certification from another institution. You cannot engage in research diving from our facilities or with the use of CMIL boats or equipment before receiving clearance from the DSO/BSO. If you are interested in storing your dive equipment at CMIL, please contact the Lab Manager for dive locker assignments AFTER final approval from the DSO/BSO. Lockers are provided on a first come, first served basis and are generally assigned two divers per locker. In the event that locker space becomes limited, priority will be given to the most active divers. Temporary dive locker space is available in the outdoor drying rack for short term storage. Gear should not be left in the outdoor rack for more than 48 hours. For more information about the SDSU Dive Program, visit <https://cmi.sdsu.edu/diving-program/>.

SCUBA tanks are available free of charge for SDSU-related diving activities only. Tanks cannot be used for recreational use or for non-AAUS divers. All tanks must be returned at a minimum of 300 PSI. If any tanks are found below 300 PSI, the diver last listed as using that tank will be charged a \$20 fee for the visual inspection of the interior of the tank. Multiple offenses will lead to an investigation by the DCB.

Dive permits are necessary for all underwater diving activities in San Diego Bay except seaward of Ballast Point and as otherwise noted in the [San Diego Unified Port District Code section 8.01](#). For applications and further information, please contact Harbor Police Records at 619-686-6596, or visit Harbor Police Headquarters at 3380 North Harbor Drive, San Diego, CA 92101.

To request a Verification of Training (VOT) or Letter of Reciprocity (LOR) from the DSO/BSO to dive at another institution, email Mike Anghera directly with a written request, allowing for at

least two weeks processing time. Before submitting your request, ensure that your dive logs are up to date and that you are current in all AAUS Scientific Diver requirements.

Boating Certification and Safety. All students who plan to use boats for their research must take the boating course from the DSO/BSO. All boat users are also required to possess a California State Boater Card issued by the California State Parks Division of Boating and Waterways (DBW). Please contact the DSO/BSO to determine when the next scheduled course is available. All CMIL common-use boats must be reserved in advance using the TeamUp reservation calendar, which can be accessed online at: <https://teamup.com/kso94ksud6269eiu1m>, or through the mobile TeamUp app using code "kso94ksud6269eiu1m." **You are required to sign out and log your use of all CMIL boats, fill the gas tank, and rinse down all boats and trailers with fresh water after every use (see also the Operational Checklist located on each boat). You should also rinse the back end of the tow vehicle.** Gas must be refilled at a nearby gas station or using a portable metal gas can with spark arrestor; plastic gas cans are not allowed to be stored at CMIL. Report any neglect, damage, or maintenance issues immediately to the Lab Manager and DSO/BSO. **Any unreported issues found will be the responsibility of the last logged user.** In order to avoid incorrect designation of fault, report issues as soon as possible after use. Failure to comply with these rules will result in revocation of privileges in using these resources. Guests are allowed to accompany researchers on CMIL boats, however, they must first sign a waiver and submit to the folder located in the dive locker. Contact the DSO/BSO or Lab Manager for any questions regarding boat use.

Driving CMIL Vehicles. As with all SDSU vehicles, before using CMIL vans you must take the SDSU online defensive driver exam. The Biology Department is responsible for submitting the request to take this course on your behalf. Do not contact Public Safety or University Police for instructions. Contact the Assistant to the Department Chair, Patti Swinford (swinford@sdsu.edu), with the following information to initiate your request:

Name:
Email address:
Red ID:
Supervisor (PI/faculty for student):
CA Driver's License Number:
Type (Faculty/Staff/TA/GA/Student/Volunteer):

Once you have taken the course and received a certificate of completion, submit a copy of your certificate to the Lab Manager before operating any of the CMIL vehicles - this includes general use vehicles, faculty owned vehicles, or prior to attending the trailering course; no exceptions.

You are required to sign out and log your use of all CMIL vehicles, fill the gas tank, and clean vehicles after every use. Report any neglect, damage, or maintenance issues immediately to the Lab Manager and DSO/BSO. **Any unreported issues found will be the responsibility of the last logged user.** In order to avoid incorrect designation of fault, report issues as soon as possible after use. Failure to comply with these rules will result in revocation of privileges in using these resources. Vehicles (including trailers) are to be used locally within San Diego and Orange Counties only. Usage outside these areas is prohibited unless granted special permission. Contact the Lab Manager for any questions regarding vehicle use.

In the case of a breakdown, refer to the SDSU garage contact information located in the glovebox of each vehicle. In case of an accident, if anyone is injured, call 911 immediately. Any accidents which in any way involve personal injury or property damage to SDSU owned vehicles and vessels must be reported within 48 hours using form STD 269, also found in the glovebox of each vehicle. SDSU owned vehicles and vessels are covered for liability only against third party claims. Any damage to the vehicle or vessel is the responsibility of the individual involved in the accident, unless caused by a third party, then, the State's Office of Risk Management (ORIM) assists with recovery of damages. For more information, and to access additional reporting forms, visit: <http://bfa.sdsu.edu/safety/riskmanagement/accidents-claims/vehicle-accidents.aspx>. The operator of the vehicle involved in the accident must also submit a "Report of Vehicle Accident" to the SDSU University Police, as well as an incident report to the Director, Lab Manager, and DSO/BSO.

Employees (staff, faculty, and volunteers) injured while conducting university business should report injuries through Workers' Compensation. Information related to this program can be found on the Center of Human Resources website at: <http://bfa.sdsu.edu/hr/sdsuid-info.aspx>. Students are not covered by Workers' Compensation, so personal health insurance would apply; however, Student Health Services on campus is an additional resource for students with injuries. Student injuries should be documented on the SDSU EH&S Student Accident/Incident Report form, found at: <http://bfa.sdsu.edu/safety/riskmanagement/accidents-claims/student-visitor-injuries.aspx>.

Food and Beverages. Food and beverages are allowed at CMIL in the first floor break room, conference room, faculty/staff offices, student desk area, and in the outdoor mesocosm/boat yard. No food and beverages are allowed on laboratory benches, in the High End Equipment Room, or in the Specimen Preparation Room. **Laboratory refrigerators and freezers are for research use only, no personal food items are allowed.** Any coffee cups, dishes, and utensils should only be used within appropriate, designated areas, and must be stored clean. Please keep in mind that the dishes and the mini-refrigerator in the student desk area are for common use, so be respectful and keep them clean. There is a break room located in the main hallway on the first floor of the building; please use this space for preparing food and washing dishes. **You cannot use the sinks in the laboratory to prepare food and wash dishes.** You may also take advantage of the filtered water, full-size refrigerator, vending machines, and tables in this area. **IMPORTANT:** Keep all food items stored in sealed containers to avoid the attraction of insects and mice.

Research-Related Information

Research Activities Plan. Before beginning any research activities at CMIL, students and faculty must receive approval from the Lab Manager and Director. **You are required to file a Research Activities Plan (RAP) with the Lab Manager and Director at least TWO WEEKS prior to your intended start date and must receive their approval in writing before proceeding.** RAPs can be found online (see <https://cmi.sdsu.edu/forms-and-docs/>) and must be sent by e-mail attachment to the Lab Manager and Director, with your advisor cc'ed. **Please discuss research plans with your advisor to determine feasibility and scientific merit of your plan, in addition to**

what resources may be available for use before submitting a RAP. All activities performed at CMIL must be detailed in the RAP form. Students are highly encouraged to meet with the Lab Manager prior to their initial RAP submission to familiarize themselves with the resources available and assess the feasibility of their work at CMIL.

Although initial RAPs can be filed at any time, these plans should be reviewed and renewed (if applicable) in the spring semester of each year. For any modification to your RAP that would require a change in timing or the use of lab resources, please make a request for modifications with the Lab Manager, who will discuss potential modifications with the Director. **Altered use of seawater tanks and tables at CMIL requires prior authorization from the Lab Manager.** Please advise the Lab Manager of plans to turn on or off large quantities of seawater as this can affect other researchers. Seawater and other common-use resources (chillers, filters, pumps, tools, aquaria, etc.) are also widely available but must be considered with respect to the needs of others.

In addition to seawater tanks, there are three temperature-controlled rooms and three behavioral observation rooms available for use. These rooms are for general use and are not to be monopolized by any single person or lab for large periods of time. If you wish to reserve one of these spaces for a given experimental period, discuss your space and experimental needs with the Lab Manager and they will recommend a space best suited for you.

See the Appendix below for a full listing of all research spaces and resources available for common use.

Contribution Series. The CMI maintains a record of peer-reviewed publications from research performed wholly or in part at the CMIL. If you would like to add your publication to the contribution series, email the Lab Manager for the appropriate reference number **at least 2 weeks** before submitting for review.

Collecting Organisms. All scientific collection of organisms requires a permit issued by the California Department of Fish and Wildlife (CDFW). Once a CDFW permit has been obtained, please check the rules on collecting your organisms and provide a copy of the full permit to the Lab Manager for record keeping. Check with the Lab Manager for space availability before collecting organisms with the intent to hold them at CMIL. Normally, once collected, the CDFW requires that these organisms NOT be returned to their natural environment, unless special permission is granted. This may require that organisms be euthanized when they are no longer needed, however local schools or aquariums may have use for unwanted algae and animals. The Lab Manager can help coordinate in this process if you are interested. Work with invasive species requires other special considerations in collection and disposal. Refer to CDFW protocol for instructions for collecting, holding, and disposing of invasive species.

If you will be working with vertebrates, you will also need to submit an Animal Protocol Form to the Institutional Animal Care and Use Committee (IACUC) and alert the Lab Manager as to where you will be keeping your feeding records and IACUC information. Make sure to label your tanks with necessary information: **your name, APF number, species being held, number of individuals, and the date and location of their collection.** The IACUC periodically inspects CMIL, so make sure to keep this information current to avoid consequences to you and CMIL. Discuss what forms and permits are needed with your advisor before collecting and working with

organisms. Obtain necessary forms through your advisor or IACUC staff person Christine Cook (clcook@sdsu.edu).

Although invertebrates are not subject to the same regulations as vertebrates, there are recommended guidelines for disposing them properly once they are no longer needed for research. To learn more about the humane sacrificing of invertebrates, refer to the AVMA Guidelines for Euthanasia of Animals: <https://www.avma.org/KB/Policies/Pages/Euthanasia-Guidelines.aspx>.

Seawater. There are three main types of seawater at CMIL:

- Flow-through – this refers to the ambient raw seawater pumped directly from San Diego Bay into CMIL facilities. This water undergoes several steps of filtration down to approximately 20 um, and is generally free of particulates. This water can be plumbed to outdoor and indoor mesocosms and can also be pulled from a designated tap in the indoor wet lab.
- Outdoor Recirculating – these systems are sourced with flow-through water, and then further refined using additional cartridge and bio-bead filtration down to 50 um. This water also can only be plumbed outdoors, and can be chilled down to 14-18°C, weather permitting.
- Indoor Recirculating – this water is also sourced with flow-through water, but is then UV-treated and additionally filtered down to 1 um using cartridge and sand filtration. This water is free of many microbes, and particulates, and is constantly chilled to 14-16°C. This water can only be plumbed to indoor mesocosms, but there is also a tap located in the wet lab to fill other containers, if needed. **Never take water directly from the sump for use in aquaria or other containers, as this can compromise the pump used for water circulation. Always ask the Lab Manager for guidance as to where to take water within the wet lab.**

Please discuss your seawater requirements with the Lab Manager in order to determine which system is best suited for your research needs.

Shop Use. Common use tools should be used only at CMIL to ensure availability for all users; they are not allowed to be signed out and taken off site. These tools are marked with green paint or labeled “CMIL”. If a tool is not marked or labeled, it likely belongs to someone else and should not be used without permission. Please leave the shop in better condition than when you arrived to ensure that it is clean and organized for everyone. Brooms, dust pans, mops, and a shop vacuum are all available for your use. Common use power tools are also available **only after receiving safety training from the Lab Manager**. Power tools include: miter/chop saw, jig saw, table saw, power drill, drill press, palm sander, belt sander, Dremel tool, and angle grinder. The use of saws requires that at least two people be present in the Shop. You may use your own tools in the shop if you can demonstrate safety and proficiency while using them. Certain large-scale projects or equipment modifications may require prior authorization from the Lab Manager, Director, and/or SDSU Research Foundation.

If you need help with equipment construction or modification, check with your advisor and other lab mates; the Lab Manager may also be able to help. CMIL frequently has an abundance of common use materials such as wood and PVC that are available to everyone. These materials are stored in designated areas. If you see something you would like to use but don't know

whether it is “common use,” please ask the Lab Manager. Writing your name on items you plan to use in the future can help everyone distinguish what isn’t common use.

General Use Scientific Equipment. Certain pieces of common-use equipment require logged activity or check-out prior to use by users. These include: -80° C freezer, floor centrifuge, handheld and benchtop pH meters, dissolved oxygen sensors, drying ovens, Millipore DI water system, and autoclave. Other equipment may be available from other labs. Please do not use equipment belonging to individual faculty labs without first getting their permission. **Ask the Lab Manager if you have any questions or need to review how to use a specific piece of equipment.**

Storage. Unfortunately, storage space is limited at CMIL. In general, each lab has a designated lab bench space and storage container or shed in which to keep lab and field equipment. These spaces must be kept clean and organized for all users occupying them, and cannot overflow into common use areas. If you require space outside of these designated areas, there may be alternative spaces available on a first come, first served basis. Please contact the Lab Manager for permission to use these areas **BEFORE** items are stored there. In addition, 13” x 13” x 15” storage cubes are available to students for storage of personal items in the Analytical Lab. If you would like to reserve a space, contact the Lab Manager for an assignment.

Volunteers. If you have volunteers (students or non-students) working for you on your research projects, you must submit a Volunteer Registration Form, found at on the CMIL website at: <https://cmi.sdsu.edu/forms-and-docs/>. Volunteers will then be registered with the SDSU HR Department after approval from a faculty member. If keys and parking permits are required for long-term volunteers, a RED ID number will be issued to non-SDSU affiliates by HR upon approval of volunteer status, and they may request keys following the protocol above. Below are some FAQ’s regarding volunteer registration:

- **Who should be registered as a volunteer?** *Any person working at CMIL that is not a PAID employee of the University or the Foundation must be registered as a volunteer.* This includes non-SDSU affiliates, all SDSU undergrad students, and graduate students that do not have a TA/GA/RA position during the regular semesters. During the summer months, all graduate students are automatically registered as volunteers by the Biology office. Faculty are exempt from needing volunteer registration if they hold an active research grant. Faculty with 9-month positions not holding an active grant and wishing to conduct field or lab work are highly encouraged to register as a volunteer.
- **Why do we need to register volunteers?** There are many reasons why we need to record the people who conduct work using the CMIL facilities on a regular basis, but the most important reason is in case of emergencies. In the unlikely case that there is an emergency, it is important to have an emergency contact on file, as well as basic information about individuals. In addition, volunteer status at the University offers additional coverage such as Workman's Comp, which otherwise is not applicable to students. Finally, long term volunteers that are not current SDSU affiliates require a RED ID number to obtain keys, and currently, registration is the only way to assign these ID numbers.
- **How to we register volunteers?** If you have a CMIL volunteer that you would like to register, fill out and submit the CMIL Volunteer Registration form. Note that supervisors must be faculty. After receiving the required information, the Lab Manager will initiate the online registration process. Volunteers will then receive an online link to fill out their

information, supervisors will need to sign off, and then final confirmation will be granted. Remember that volunteers cannot begin any work at CMIL without final confirmation from HR. Full clearance from start to finish is expected to be within 5-7 business days.

- **What if I have a volunteer working on campus and at CMIL?** These volunteers can still be registered through the Lab Manager; please indicate which duties will be performed at each location in your Summary of Duties. If volunteers will be working on campus only, you must register through the Biology Department.

Chemical use, storage, and disposal

CMIL chemical use falls under the supervision of the county rather than SDSU's Environmental Health and Safety (EH&S), therefore, we are regulated by different rules and guidelines than what is enforced on main campus. However, chemical usage at CMIL should be treated the same way it would be on campus, following standard EH&S guidelines. Below, you will find a summary of these policies that we must adhere to.

Chemical Storage. In order to store chemicals at CMIL, you must submit a corresponding Safety Data Sheet (SDS) and a Standard Operating Procedure (SOP) to the Lab Manager, and complete the appropriate safety training through EH&S. Chemicals must be appropriately labeled with: your name and lab, an ID number given to you by the Lab Manager, date received, and date opened. **Store chemicals in their original containers from the vendor.** Make sure to update your individual lab's chemical roster with the Lab Manager whenever you receive a chemical, or when you use one up and the container is empty. It is your lab's responsibility to monitor chemical usage and inventory, not the Lab Manager's. All chemicals are purchased using personal funding and will not be covered by CMIL funds. Chemical inventory is performed every 6 months. If your lab consistently fails to update their chemical inventory, your privileges to use and keep chemicals at CMIL may be revoked.

There are a few rules when considering how to store chemicals. First, you may not store a liquid above eye level (i.e. on the shelves above your lab's bench). If you decide to store a chemical in a shared lab space (such as a cabinet under the flume or in the flammable cabinets) you **MUST** check with the Lab Manager first. This will help ensure that chemicals do not share storage with chemicals that are not compatible with each other. Finally, if you are storing chemicals in a cabinet, only the cabinets that self-close are appropriate for flammables (bright yellow and are located in the specimen room and in the shop). All other cabinets are **NOT** appropriate to permanently store flammable chemicals (including fume cabinets and hoods). Flammable chemicals in squirt bottles and smaller containers (500 mL or less) that are being **actively** used can be stored on lab benches and underneath the fume hood. The total amount of flammable chemicals stored in flammable cabinets cannot exceed 10 gallons throughout the entire lab.

Chemical Use. Before using hazardous chemicals at CMIL, please see the Lab Manager for information on SDSU laboratory safety training and certification process for appropriate chemical safety procedures. The Lab Manager may help with safe handling techniques, however, is not responsible for official training and certification; you must obtain this training from EH&S (contact Lilly Sabet; Phone: 619-594-8341, Email: lsabet@sdsu.edu). Make sure to follow all

appropriate safety procedures, such as working in a fume hood if necessary, and protecting your skin, mouth, and eyes. Never use harmful chemicals when alone at CMIL. In case of accidental exposure, there are emergency showers and eyewash stations located in the Analytical Lab.

You are welcome to store small quantities of liquids in secondary containers, such as squirt bottles, while these chemicals are being **actively used**. These containers DO NOT need their own ID number or to be recorded on the roster. Rather, you must label each of these containers with the name of the chemical (no formulas, write out the name), your name and the lab name, and any hazards (flammable, corrosive, etc.). Squirt bottles containing flammables must not exceed 500 mL.

Use of chemicals inevitably leads to the production of hazardous waste. Please store this hazardous waste appropriately in a non-food container. All containers of hazardous waste must be labeled with a "Hazardous Waste" label obtained from the Lab Manager. Make sure the container is appropriately labeled **before you start accumulating waste**.

Chemical Disposal. We are a Conditionally Exempted Small Quantity Generator (CESQG), meaning that we can store up to 100 kg (or 27 gallons) of hazardous waste before it must be disposed. **We cannot produce more than 100 kg of hazardous waste per month.** California has some of the most stringent classifications of what is hazardous, so assume that all waste is hazardous, even if the SDS indicates that it is not (the SDS uses federal classifications, not CA classifications). Please contact the Lab Manager if you have any questions about chemical use and waste disposal.

When you use all remaining amounts of a chemical in a container, it is important to dispose of the container properly. If the container is "California Empty", meaning that if you turn the container upside down and shake it and nothing comes out, you can then deface it (take all the labels off) and throw it away. If it is not empty, then you will need to dispose of the remaining chemical appropriately. You may reuse old chemical containers but you must rinse out the old chemical containers with water three times, and this rinse liquid will become hazardous waste.

Hazardous waste containers that are no longer accumulating waste will need to be placed in the designated flammables cabinet in the shop (Cabinet #7) until they are removed for disposal. Chemical waste that cannot be bench-top treated in small batches (less than 5 gallons) within an experimental period, or disposed of via sewer, are considered hazardous (see Lab Manager for allowable treatment procedures). Users must undergo proper training by the Lab Manager and follow specific treatment SOPs in order to bench-top treat hazardous chemical waste.

Hazardous chemical waste may not be transported to campus for disposal. Labs must label and accumulate their hazardous waste at CMIL until the Lab Manager can deliver it to an off-site treatment facility.

Other biohazardous waste such as universal waste, sharps, and broken glass should be disposed of in designated containers in the Analytical Lab. Biohazard/sharps waste bins are located on bench tops, the broken glass container is located near the analytical lab fume hood, and the universal e-waste (e.g. batteries, aerosols, light bulbs, etc.) container is located on the bench top next to the fume hood.

Any unexpired chemicals left over from your research may be “gifted” to other researchers, but they will then need to assume responsibility for proper disposal if the contents exceed the expiration date. Make sure to update your lab’s chemical roster in the event of gifting chemicals, and notify the Lab Manager.

Computing and Internet

Internet Access. Both wired (ethernet) and wireless internet are available at CMIL and are free to everyone. Internet access is granted in the same way as it is on campus. Please refer to the SDSU Wireless guide for instructions on use: <http://library.sdsu.edu/computers-technology/wireless>

Our network bandwidth is very limited, so please be considerate in using web-intensive products (streaming) and in connecting multiple devices (i.e. tablets and smart phones) to the internet at the same time. Disconnect devices from the network when they are not in use. Using peer-to-peer networking products such as BitTorrent are strictly prohibited.

Listserv. There are two designated mass email lists or “listservs” for CMIL communications: CMILstudents@sdsu.edu, for graduate students, undergraduate students, volunteers, and lab techs working at CMIL; and CMILfaculty@sdsu.edu, for all affiliated CMIL faculty and staff members. Key holders are automatically added to the appropriate listserv; please contact the Lab Manager to add additional people to these lists. Listserv emails are intended for CMIL-related business only and are not intended for social or MEBSA-related events. Please be discretionary and respectful in the email you send.

Common Use Lab Computer. There is a PC located in the Analytical Lab that is common use for all users, accessible by using your SDSU log-in credentials. This computer is dual-screened and contains useful programs such as Adobe Creative Suite and Microsoft Office Suite. You may use this computer at any time for research related work, but not for streaming or recreational use. Do not download music, movies, or unauthorized programs to this computer, and do not save important files to the hard drive. This computer will be periodically cleared of all files in order to maintain performance, so be sure to back-up whatever files you are working with to an external device.

Printer/Scanner. CMIL provides a general use printer for student use located in the Analytical Laboratory. Please be considerate in your use of shared supplies and be conservative in your use of ink and paper.

Printer installation instructions:

Mac users:

- Go to this website to download the recommended driver:
http://support.brother.com/g/b/downloadtop.aspx?c=us&lang=en&prod=mfc8910dw_us_as

After downloading and installing the driver, follow these steps:

- Go to System Preference -> Print/Scan

- Under List Printers click on Add
- Select Brother MFC 8910 DW
- Click Add

PC users:

- Go to Control Panel
- Go to Hardware and Sound
- Select Advanced Printer Setup
- Select MFC-8910DW (Brother)
- A box comes up where you select Brother and look through printer drivers. If MFC 8910DW is not an option click “windows update”
- This will take a while, but it will update the driver list to include almost all possible drivers.
- Reselect Brother, and find MFC 8910 DW
- Select the driver and install

If this does not work, go to the following website to download the recommended driver:

http://support.brother.com/g/b/downloadtop.aspx?c=us&lang=en&prod=mfc8910dw_us_as

Current Printer IP Address: 130.191.171.030

Other Information

Mailing Address. Address any mail you wish to receive at CMIL using the following format:

SDSU Coastal and Marine Institute Laboratory
Attn: [Your name]
4165 Spruance Rd, Suite 100
San Diego, CA 92101

Holidays. CMIL staff observes weekends and CSU holidays, so please plan ahead if you anticipate requiring assistance while working at the lab during those days.

Noise at CMIL. Please respect other CMIL users who are trying to work and be productive in shared spaces. Unless all researchers in the area agree to listen to your music, please wear headphones. Keep music and “chatter” at a respectable volume.

Parking. Parking permits are required in the parking lot shared by CMIL, USGS, and the City of San Diego Public Utilities Department (CSDPUD). Parking permits are free, but must be requested from the SDSU Research Foundation when your building keys are requested; SDSU campus permits are not accepted. Parking is not authorized on Spruance Rd. or Kincaid Rd. outside of the parking lot and may result in your vehicle being towed. There are a limited number of 24-hour guest parking spots in our parking lot that may be used for short-term volunteers or visitors. Temporary daily permits are also available for visitors from the Lab Manager. Parking is permitted anywhere in the lot, except for within the secured, gated area. These spots are reserved for SDSU, USGS, and CSDPUD fleet vehicles only.

Furniture. Please do not move desks or other large furniture without permission. Do not move lab bench stools or desk chairs from the Analytical Lab into the Wet Lab, as the metal components of the stools will begin to rust. Desks in the Analytical lab are available for temporary use by students on a daily first come, first served basis. Please clean up after yourself and keep this area accessible to other students.

Reserving the Conference Room. The first floor conference room is shared by CMIL and USGS and must be reserved prior to use. The Lab Manager does not have control over this space, but can request a reservation up to 60 days in advance on your behalf on a first come, first served basis. In certain circumstances, the Lab Manager and Director have the ability to make requests beyond the 60-day limit. All requests for use should be relevant to CMIL or SDSU activities. Other requests for use may be granted on a case-by-case basis by the Director. You may submit requests to reserve this room by email to the Lab Manager, or by using the Conference Request Form found on the CMIL website (<https://cmi.sdsu.edu/>) under the “Facilities” menu. The following information is required for your request:

- Name
- Event
- Preferred Date
- Preferred Time
- Number of People

Garbage and Recycling. Please use the appropriate garbage cans, recycling bins, and dumpsters (located outside in the boat/mesocosm yard). These dumpsters are for CMIL and USGS trash only. Importantly, animal carcasses, plant matter, sediment, and other items that may decompose and create noxious odors must be secured in closed plastic bags and thrown in the dumpster immediately. Do not dispose of any plant or animal material in indoor waste bins or in the rolling garbage cans in the mesocosm yard.

Seminars. Seminars may occur at CMIL or on the SDSU campus, sponsored by MEBSA. The speakers are selected by MEBSA and are chosen to be of interest to faculty, students, and the general research community. These seminars are for your benefit, so please attend in support of our general research mission.

Please do not feed wildlife. Wild animals in the area have become bold and may attempt to feed on experimental organisms. Cover tanks when able and chase away large birds if safe to do so. Avoid leaving food or other materials around that may attract pests, such as mice.

Completing research at CMIL

When you have finished an experiment or your research project at CMIL, please thoroughly clean your laboratory space. All animals and chemical waste must be disposed of safely and properly. Seawater tanks and tables must be cleaned and drained. See the Lab Manager to check that you have properly cleaned your research area before departing SDSU, or following the completion of any experiment using shared space at CMIL. Keys and parking permits must be returned to the Lab Manager or SDSU Research Foundation upon final departure from CMIL.

Please contact the Lab Manager or Director if you have any questions, comments, or concerns regarding the use of this facility. Please read these guidelines thoroughly and frequently. In the event of any updates, all CMIL users will be notified via email. Thank you for your cooperation.

Appendix

Available Common Use Space and Resources

Space

- Indoor Wet Lab
- Boat Yard
- 3 Side Rooms
- 3 Temperature Controlled Rooms
- High End Equipment Room – for microscopes and electronic equipment (Restricted Access)
- Specimen Preservation Room – for work with preserved samples
- Analytical Lab South
- Analytical Lab North
- Lab benches (including drawers and cabinets)
- Student desks
- Storage Cubes
- Conference room
- Shop

Tanks/Mesocosms

Outdoor:

- 10 Anderson Mesocosms*
- 4 Hovel Mesocosms*
- 6 Long Water Tables*
- 4 Troughs
- 2 Raceways
- Other Misc. Tanks & Mesocosms

Indoor:

- Hovel* - 3 Sectional Tanks, Acrylic Tank
- Anderson* - 12 Conical tanks, 2 Acrylic Tanks, 2 Glass Tanks
- 6 Black Conical tanks
- 2 Large Rectangular Tanks
- 2 Small Rectangular Tanks
- Double stacked stainless steel raceway w/baskets

*Priority given to PI's students

Equipment

- PC
- Benchtop pH meter
- 2 Handheld portable pH/DO meters
- Floor centrifuge
- Autoclave

- -80°C freezer
- -10°C freezer
- 2 Drying ovens
- DI water system
- 2 Fume hoods
- Microscopes – dissecting and compound
- Portable projector
- Misc. PVC
- Misc. Wood/building materials
- Fluorescent lights
- Misc. glass aquaria
- Misc. containers and jars
- Power tools
- Hand tools
- SCUBA tanks (air and Nitrox)
- Car/boat battery charger
- Jump pack
- Portable air compressor (for tires)
- Spectrophotometer
- Ice machine

Boats & Vehicles

- Ford Van – seats 2
- Dodge Van – seats 5
- Seabastes – 18ft Parker
- Point Loma – 21ft Parker
- Gribble - 18ft Parker
- Melibe - 18ft Parker

Other

- Filtered drinking water
- Vending machines
- Food fridge
- Indoor break room
- Outdoor picnic tables
- Charcoal BBQ