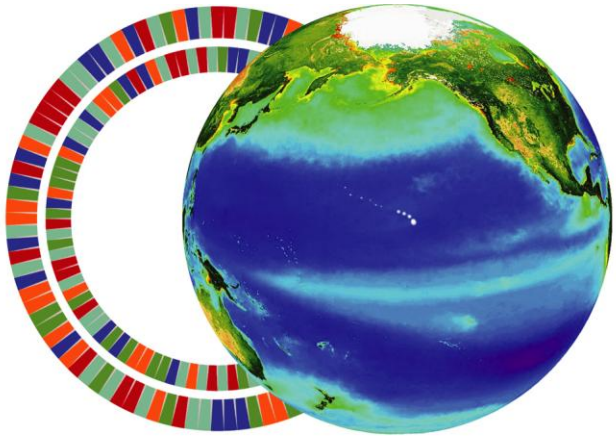
C-MORE Hale



c·more

center for microbial oceanography:
research and education

LABORATORY SAFETY GUIDE

January, 2017

Welcome to C-MORE HALE!

Center of Microbial Oceanography Research and Education

Introduction:

Marine microorganisms dominate the ocean ecosystem and sustain planetary habitability. C-MORE's focus is on the key role that marine microorganisms play in sustaining a habitable planet from solar energy capture to food production to the sequestration of carbon dioxide. C-MORE is one of 17 National Science Foundation Science and Technology Centers (NSF-STC) across the nation. The scientists and educators on the C-MORE Team are committed to a unique partnership aimed at exploring and understanding how the marine microbial world is structured and how it functions. Training of tomorrow's leaders in microbial oceanography and a diversification of the workforce in science, technology, engineering and mathematics are two major education goals. To accomplish its mission, the Center brings together individuals who otherwise have little opportunity to interact. Headquartered at the University of Hawai'i at Manoa, the interdisciplinary team includes scientists, engineers and educators from the Massachusetts Institute of Technology, Monterey Bay Aquarium Research Institute, Oregon State University, University of California - Santa Cruz, and Woods Hole Oceanographic Institution. The new knowledge that is gained from C-MORE will be used to improve our comprehension of the world we live in, to inform policy makers and to educate the public at large.

What is C-MORE Hale?

C-MORE Hale is a state-of-the-art facility that supports comprehensive research on marine microbes, from molecular biology to ecology. C-MORE Hale houses modern analytical instrumentation, supports novel research programs, and provides a vehicle for education, outreach and knowledge exchange.

C-MORE Hale is designed and built as a "Leadership in Energy and Environmental Design" (LEED) certified PLATINUM building, the first such laboratory in Hawai'i. Special building features include: energy efficient mechanical plant and lighting, high performance glazing on glass wall to reduce heat gain, occupancy sensors in all offices and laboratories, underground storage for storm water runoff, solar water heater, a green roof, plaza landscaping using drought resistant plants, and other energy efficiency and environmental performance features.

C-MORE Hale contains a spectacular, 50-seat auditorium that supports video conferencing and live Internet broadcasting. Since C-MORE scientists are spread across six time zones, this facility enhances collaboration among our national and international colleagues.

C-MORE Hale is designed as a shared-use, open architecture, ADA-accessible laboratory that facilitates communication and collaboration. It houses many specialized instruments including microscopes, flow cytometers, DNA sequencers, nutrient and gas analyzers to name a few. The laboratories also contain special walk-in incubators for culturing marine microbes, ample storage for frozen samples, and an emergency generator to protect cultures, samples, instruments and computers during major power outages.

A special feature of C-MORE Hale is highlighting the beauty of marine microbes. Within the walkway leading into the laboratory are eight large pavers, each depicting one or more microorganisms commonly found in the sea around us. Images of marine microbes based on hand drawings from the 19th century zoologist Ernst Haeckel are also etched into the glass panels of the staircase connecting the offices to the second floor laboratories

Working in C-MORE Hale

We welcome you to C-MORE Hale and while here, your number one concern should always be safety. Please read the following building and lab safety guide to help ensure a safe and enjoyable work and laboratory experience. If you have any questions, please contact Tara Clemente.

C-MORE Hale "House" Rules

- C-MORE Hale is a smoke –free building.
- Bicycles, scooters, surfboards and skateboards are not permitted in the building at any time.
- Animals are not allowed in the building (Service animals are exempt).
- Food and drink are not permitted in the Laboratories.
- Observe good housekeeping practices- work areas should be kept clean and tidy at all times.
- Doors should never be propped open.
- Glass windows or doors must remain free of coverings.
- Postings are not allowed in corridors or elevator. Postings are only allowed in appropriate display cases.
- Nails are not permitted for wall hangings (small picture hanging nails are okay).
- The use of extension cords is prohibited (power extension with surge suppression ok).
- Label Laboratory furniture only with approved labeling scheme (please do not use lab tape on wood surfaces and duct tape is prohibited on any furniture surface).

Laboratory Safety Guide

Laboratory safety is a significant legal and moral responsibility for all C-MORE Hale occupants. This manual is focused on essential safety points. Please read it carefully and keep it as a reference. You must complete a Safety Authorization form prior to using any laboratory facility in C-MORE Hale. You are also required to take the appropriate University –sponsored safety class (http://www.hawaii.edu/ehso/lab-safety-training/) before working in any laboratory on campus. Be proactive in your training and keep up to date on all certifications.

Introduction

Laboratory and office space in C-MORE Hale has been provided for your convenience. These rooms are to be used to carry out research and as a place to work and study. The health and safety of you and your colleagues in C-MORE Hale is your primary responsibility.

C-MORE Hale's Safety Committee is responsible for formulating and enforcing university safety regulations. These safety regulations apply at all times. Members of the committee are:

Name	Position/ Responsibility	Phone	Room
Tara Clemente	C-MORE Hale Lab Manager	(808)956-7779	207A
Karin Bjorkman	Radiation Lab Safety Officer	(808)956-0306	202AA
Alex Nelson	UH Marine Center Lab Manager C-MORE Hale Lab Check-Ins	(808)956-0305	202A
Steve Poulos	Facility and Building Operations Manager	(808)956-6650	101
David M. Karl	C-MORE PI and Director	(808)956-8964	116

A copy of the Safety Chemical Hygiene Plan is provided by the University of Hawaii's Environmental Health and Safety Office (EHSO), which you can use as a safety reference (http://www.hawaii.edu/ehso/wp-content/uploads/2016/07/CHP.pdf). A copy of this booklet is also located in each laboratory.

Safety Inspections and Enforcement

Periodic safety inspections will be conducted by ESHO to check compliance with Environmental Protection Agency (EPA) and the State of Hawaii Division of Occupational Safety and Health (HIOSH). Results of the inspection are summarized in a report directed to the faculty member in charge of the lab. The purpose of the inspections is to identify and correct potential problems before employees become injured or property is damaged. Problems noted in the inspections should be addressed immediately by supervisory personnel. When you become aware of a safety problem, contact the Lab Manager, Tara Clemente.

Accidents and Injuries

Immediately report all accidents/injuries to your supervisor and/or Tara Clemente. Accident reports must be filled out within 24 hours of an accident for Worker's Compensation Coverage. Only employees receiving a paycheck through the University of Hawaii's payroll office and the Research Corporation of the University of Hawaii (RCUH) are eligible for Worker's Compensation Coverage. All other lab workers are required to use their medical insurance.

Minor injuries may be treated from the first aid kits provided in each laboratory. In case of more serious injuries, go immediately to University Health Services Clinic (1710 East West Road). If the person can't be moved, call campus emergency for transport, x66911.

General Safety rules and regulations

These regulations apply throughout C-MORE Hale. In special areas where additional regulations are enforced, please observe and follow any posted notices. Always be aware of the safety procedures that apply to the work being done. It is your responsibility to determine the particular hazards involved in operating or handling apparatus, materials and chemicals required in your research.

1. **Safety Equipment**

- Familiarize yourself with emergency procedures and learn how to obtain additional help in an emergency.
- Know how to use the emergency equipment in your work area.
- Everyone must be familiar with the location and use of fire extinguishers, fire alarm boxes, first aid kits, spill kits, safety showers, eyewash equipment, and personal protective equipment.
- Wear personal protective equipment (i.e. lab coat; safety glasses and gloves) when necessary.
- Know where the exits are located.

2. **Awareness**

- The material safety data sheets (MSDS) for common laboratory chemicals can be found on-line at the EHSO website (http://www.hawaii.edu/ehso/lab-safety-links/). You can also request a MSDS from the manufacturer when ordering chemicals.
- Standard Operation Procedures (SOP's) are available in each laboratory for operations posing a special hazard (i.e. Ethidium Bromide, Formaldehyde, etc…). A blank form fillable SOP is available in pdf and template SOPs for certain chemicals can be found at: http://www.hawaii.edu/ehso/lab-safety-standard-operating-procedures-template/ .
- All chemical, biological, radioactive and extreme temperature hazards must be clearly labeled with appropriate signs.
- An emergency contact name and phone number must be identified on each piece of experimental equipment in the event of a power failure or accident.
- All chemicals in the lab must be labeled with identification AND date of purchase.

3. **Storage**

- All storage areas must be clearly designated and separated from routine workspace (i.e. NO storage on counter tops or in hoods).
- All Radio isotopes must be stored in a locked, secure place.
- All gas cylinders must be securely chained or clamped to stationary objects to prevent accidental tipping.

4. **Housekeeping**

- Observe good housekeeping practices. Work areas should be kept clean and tidy at all times.
- Maintain unobstructed access to all exits, fire extinguishers, electrical panels, first aid kits, spill kits, emergency showers and eye washes.
- Bicycles and scooters are not to be stored in the laboratories or offices.
- Food and drinks are not permitted in the laboratories.
- All chemicals in the lab must be clearly labeled with the substance name, concentration, date and name of individual responsible.
- Reagent bottles must be rinsed cleaned and disposed of in the appropriate waste containers.
- Place all glass waste in designated "Glass Waste" containers.
- Place all plastic pipette tips in designated "Plastic Waste" containers.
- Place all needles, razors and sharp objects in designated "Sharps" containers.
- Dispose of all chemical waste properly. Do NOT pour hazardous chemicals down the sinks.
- Place all hazardous waste in the satellite accumulation area.
- Clean up spills immediately.

5. **Disposal of Hazardous wastes**

- All persons generating hazardous waste are required to take an initial and annual refresher training course provided by ESHO.
- All hazardous waste must be placed in the designated satellite accumulation area.
- Waste containers must be in good condition and Labeled with the word "Waste" and the chemical name(s) of the waste (e.g. "waste methyl alcohol" or "waste ethidium bromide). Do NOT use abbreviations, acronyms and chemical symbols.
- All Hazardous materials and waste must be segregated by hazard class (flammable/combustible; oxidizer; acid; base).
- Secondary containment is required for all containers of liquid waste.
- Individual laboratory workers are responsible for the prompt and safe disposal of hazardous wastes according to ESHO procedures (http://www.hawaii.edu/ehso/hazardous-materials-management/).

6. **Operations**

- ONLY trained and authorized personnel can operate laboratory equipment. If you do not know how to use an instrument please seek training.
- Please record equipment use in equipment log books provided.
- The use of radio isotopes is restricted to designated radio isotope areas.
- Laboratory doors must remain closed at all times, even when the lab is occupied.
- When you're the last one leaving a room, turn off all unnecessary task lights and electrical appliances and lock the door.

C-MORE Hale
Laboratory Personnel Safety Form

Name: _____

Date: _____

Email: _____

Phone: _____

Department: _____

PI's Name:_____

By his/her signature the employee acknowledges that he/she has read C-MORE Hale's Laboratory safety guidelines and has familiarized themselves with emergency equipment and procedures.

_____

Signature