

Lab-Specific Health and Safety Plan

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Dept BIOLOGY

A. LABORATORY INFORMATION

Principal Investigator(s)
or Staff Manager

Dr. José R. de la
Torre (PI)

Email: jdelator@sfsu.edu

Telephone: x8-7043

Office: HH 668A

B. SCOPE

This lab health and safety plan
applied to these room(s)

HH 624

Bldg/Room

HH 625

Bldg/Room

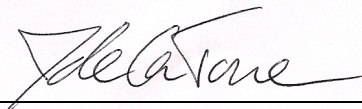
11/25/13

Revision Date

Prepared by: Dr. José R. de la Torre

Principal Investigator/Responsible Individual

Signature



Date 11/25/13

Signature

Date

C. NATURE OF LAB WORK OR RESEARCH

The type of work or research done in this lab We use microbiological, molecular, bioinformatic
and geochemical approaches to understand the ecology and evolution of microorganisms
contributing to nitrogen and carbon cycles.

D. RESPONSIBLE INDIVIDUALS

Dr. José R. de la Torre

The named individual(s) has primary responsibility for this area. If this person is not in his or her office or lab, contact the stockroom manager or the department office. Telephone numbers for these and other pertinent individuals are listed below:

Name	Title	Room	Extension
<u>none</u>	<u>Staff Manager/ GA/TA (if any)</u>	<u>HH 631</u>	<u>x8-3025</u>
<u>Michael Fong</u>	<u>Stockroom/Dept Operations Manager</u>	<u>HH 539</u>	<u>x5-0426</u>
<u>Dr. Michael Goldman</u>	<u>Department Chair or Director</u>	<u>HH 534</u>	<u>x8-1548</u>
<u>Linda Vadura</u>	<u>COSE Health & Safety Specialist</u>	<u>TH 216</u>	<u>x8-6892</u>
<u>Maria Fedel</u>	<u>Compliance, Office of Safety & Risk Mgmt</u>	<u>ADM 248</u>	<u>x8-1419</u>

D. OPERATING RESPONSIBILITIES

The responsible individual will oversee general lab operations, ensure that the work area is safe and complies with applicable regulations, and correct deficiencies in a timely manner. This individual is also responsible for making certain that all personnel using this work area have read, understand, and follow appropriate safety procedures. This plan must be reviewed each year and updated as necessary.

E. PERSONNEL ACCESS

The lab may be accessed during normal business hours by all personnel associated with the responsible individual's research. During non-business hours (evenings and weekends), *prior* authorization from the Department Chair along, with a signature from the COSE Director of Operations on a building pass is required.

F. MEDICAL TREATMENT

Personnel injured in the lab during normal business hours must be taken to the Student Health Center (SHC) for evaluation or treatment. The SHC will fill out an incident report and notify Safety & Risk Management. If an injury or illness may be serious or an emergency after-hours, call University Police at **911** or **x8-7200**.

G. LOCATION OF IMPORTANT SAFETY ITEMS

<i>Item</i>	<i>Location</i>
Lab Chemical Hygiene Plan	<u>HH 631 (bookshelf, white binder)</u>
Safety glasses and/or goggles	<u>HH 625 (red bookshelf)</u>
Lab coats, aprons, gloves	<u>HH 624</u>
First Aid Kit/ Antidote	<u>HH 624 and HH 631</u>
Hazardous Waste Satellite Accumulation Area(s)	<u>HH 624 and HH 625</u>

Safety Data Sheets (SDS) <http://hazard.com/msds/index.php>

HH 631 (white binder) as well as online sites, linked from the laboratory webpage (<http://archaea.sfsu.edu>)

Designated areas for Select Carcinogens or particularly toxic chemicals

Ethidium bromide (solid & liquid) is located in the refrigerator in HH 624

Other

Acrylamide (liquid) is located in the refrigerator in HH624

Formaldehyde and paraformaldehyde are located beneath the chemical hood in HH625

H. GENERAL SAFETY

Hygiene

Eating, drinking, and smoking are not permitted in the lab or anywhere hazardous materials are used or stored. Wash hands before leaving the lab and after contact with hazardous materials. Store glasses, goggles, dust masks, and gloves in a clean, secure location to prevent soiling or contamination.

Apparel

A lab coat and eye protection must be worn whenever chemicals or harmful light sources are being used in the lab, regardless of whether there is direct involvement with hazardous materials. Shorts and sandals are not acceptable apparel in the lab but may be permitted under special circumstances by the responsible individual.

When may sandals (non-closed-toe shoes) be worn in the lab? Never _____

Hazardous Materials

Chemicals must be carried in a secure container to prevent spills or dropping onto counters or floors. Compressed gas cylinders must be secured with straps or chains to the wall or heavy counters or furniture. Screw caps on cylinders being stored or moved. Keep containers closed when not in use. Segregate hazardous materials by class in appropriate LABELED secondary containers and cabinets.

Defective Equipment

Stop using and take out of service any equipment that is broken or with damaged electrical cords. Cracked glassware and missing or inoperable guards, interlocks, and covers on equipment must be replaced. Corroded or leaking containers, and poorly functioning fume hoods must not be used until the problem is corrected. Report problems with equipment to Dr. de la Torre, as well as your stockroom or department office promptly.

I. TRAINING

All personnel working in this lab are required to receive training from the responsible individual about standard laboratory practices, must demonstrate competence before performing a new procedure or operating an instrument with which they are unfamiliar, show they know the correct procedures for handling, labeling and disposing of chemicals, and know how to review SDSs for chemicals before using them.

The responsible individual will require all lab personnel to read the C.O.S.E. Chemical Hygiene Plan and will emphasize the sections on compressed gas cylinders, materials storage, and waste disposal. Newly hired personnel must have an initial safety orientation as soon as possible but at least within 30 days of starting work. In addition, the following information will be provided to all lab personnel:

Dr. de la Torre will train all lab personnel. They will be required to review the ***Teaching New Employees About Safety*** handbook (online or in the lab safety binder), to review a lab safety video, to be certified by BISF staff in the proper use of the autoclaves. All personnel will complete the ***Certificate of Safety Orientation*** and the ***Record of Job Specific Orientation for New Employees*** form.

Attach a current list of lab workers and date of initial training.

Forward copies of signed initial safety training forms to the COSE Health & Safety Specialist.

J. LAB EQUIPMENT

Incubators, centrifuges, water baths, shakers, vortexers, thermocycler, gel electrophoresis systems (agarose & acrylamide), electroporator, plate reader, spectrophotometer

All users will be trained and authorized by the responsible individual before using this equipment. Repair or maintenance of this equipment will be made by the responsible individual, his/her designee, or the manufacturer. Operation manuals and/or operating procedures are located in **HH 631 (bookshelf)**.

K. HAZARDOUS WASTE

Chemical waste generated in the laboratory must be stored in posted "Satellite Accumulation Areas" (SAAs). An SAA may be a segregated area on a shelf, in a cabinet, countertop, or fume hood. If you must store hazardous waste in a fume hood, make sure it is clearly separated from the working space in the hood. *Waste may only be taken to the stockroom during working hours when it is open.*

Chemical waste satellite accumulation areas have been designated below:

Type of waste	Location
Chemical waste (general)	Fume hood in HH625 (segregated by type)
Chemical waste (sulfanilamide)	Satellite accumulation area in HH 624 (northernmost bench)
Ethidium bromide waste	Ethidium bromide waste container in HH 625
Biohazardous waste	Biohazard waste container in HH 624

L. HAZARDOUS MATERIALS

Lab personnel will be informed of the chemical hazards during their initial assignment and as new exposure situations arise. An inventory of chemicals used in the lab is available for review.

Type	Main Hazards of Overexposure
<input checked="" type="checkbox"/> Organic solvents	Usually flammable. Can affect function of central nervous system and cause damage to liver, kidney, and blood-producing organs. Often causes defatting of skin, headaches, and dizziness. Some are carcinogenic. Many can absorb through intact skin.
<input checked="" type="checkbox"/> Alcohols	Usually flammable. Can damage internal organs, defat the skin and cause irritation to eyes.
<input checked="" type="checkbox"/> Mineral acids	Usually very corrosive and can cause burns on eye and skin contact. Inhalation of vapors can injure respiratory tract. Often strongly reactive with metals.
<input checked="" type="checkbox"/> Organic acids	Usually very corrosive and can cause burns on eye and skin contact. Inhalation of vapors can injure respiratory tract. Reactions with strong oxidizers can cause fires.
<input type="checkbox"/> Nitric acid	Highly corrosive to eyes, skin, and mucous membranes. Powerful oxidizing agent that ignites on contact or reacts explosively with many organic and inorganic substances.
<input checked="" type="checkbox"/> Oxidizers	Can ignite on contact or react explosively with many organic and inorganic substances
<input checked="" type="checkbox"/> Particularly toxic	Typically describes a substance with acute toxicity. This is the ability of a chemical to cause a harmful effect after a single exposure. Many are also carcinogenic.
<input checked="" type="checkbox"/> Compressed gases	Health hazards: Highly corrosive to skin, eyes, and mucous membranes. Physical hazards include explosions and impact from a sudden release of pressure. Secure cylinders in two places.
<input type="checkbox"/> Metal hydrides	Health hazards from exposure include toxic effects. Physical hazards: Odorless and highly flammable. Reacts violently with water, acids, and oxygenated compounds. Strong reducing agent, air reactive. Store in tightly sealed container in a cool, dry place, away from combustibles.
<input checked="" type="checkbox"/> Corrosive bases	Highly corrosive to eyes, skin and mucous membranes. May react violently with water. Contact with metals liberates flammable hydrogen gas. EXTREMELY CORROSIVE. Causes severe skin burns and eye damage.
<input checked="" type="checkbox"/> Mutagens	(Ethidium bromide) Binds to DNA and can result in mutations. May cause cancer. User must wear appropriate safety equipment (labcoat and nitrile gloves).
<input checked="" type="checkbox"/> Neurotoxins	(Acrylamide) Harmful if exposed via skin contact or inhalation. User must wear appropriate safety equipment (labcoat and nitrile gloves).
<input checked="" type="checkbox"/> Cryogenic material	(Liquid nitrogen & dry ice) Used in small quantities to preserve or prepare samples. Never stored in the lab. May cause burns and tissue damage. User must wear appropriate safety equipment (eye protection, labcoat and gloves).

M. SPECIAL HAZARDS OR PRECAUTIONS

Task	Is a fume hood required?	Type of gloves required for the task	Type of eye protection required
	<input type="checkbox"/> YES <input type="checkbox"/> NO		
	<input type="checkbox"/> YES <input type="checkbox"/> NO		
	<input type="checkbox"/> YES <input type="checkbox"/> NO		
	<input type="checkbox"/> YES <input type="checkbox"/> NO		

Other Information or References to Codes of Safe Work Practices (SOP's)

M. EMERGENCY PROCEDURES

In a life-threatening emergency, first call University Police at x8-2222 or 911 then a department representative (either the responsible individual, stockroom staff, or a professor) If an evacuation is necessary, lab personnel should turn off all instruments and lights (if circumstances permit), close the door, and exit the building in an orderly manner. Listed below, are select emergencies and associated recommended actions excerpted from the C.O.S.E. Chemical Hygiene Plan (Chapter 2, page 8&9).

Nature of Emergency	Recommended Action
Small (Incipient) Fire	For small fires in the incipient stage, use a fire extinguisher to put it out. Break the small plastic seal on the handle. Remember to point the nozzle at the base of the fire and sweep back and forth. Don't put yourself in danger! For information on fighting fires in a laboratory, check this web site: http://www.ilpi.com/safety/extinguishers.html
Spreading Fire	<ul style="list-style-type: none"> • Evacuate the room and close the door • Pull the fire alarm or call 911
Evacuation Alarm Sounds	<ul style="list-style-type: none"> • Leave the building using the nearest safe stairwell and wait outside until the building is cleared for re-entry by police or evacuation team.
Minor Chemical Spill	<ul style="list-style-type: none"> • If the spill is small and you know how to clean it up, do so promptly. If unsure contact the PI or Stockroom. • Wear protective equipment (i.e. gloves) and avoid breathing vapors from spill. Use appropriate kit to neutralize and absorb inorganic bases and acids or other chemicals. Collect residue into a container and dispose as chemical waste.
Spill Is Larger Than You Are Comfortable Handling	<ul style="list-style-type: none"> • Isolate the spill area • Remove ignition sources and shut down equipment • Open windows (if safe to do so) • Evacuate the room and close the door • Call 911 and alert the stockroom and nearby labs
Uncontrolled Chemical Reactions	<ul style="list-style-type: none"> • Leave the area promptly and close the door • Call 911. • Alert the stockroom and nearby labs • If you believe there is a serious and immediate danger to others, pull the fire alarm in the main hallway to evacuate the building.
Chemical Splash on Face	<ul style="list-style-type: none"> • Take person(s) from spill area to nearest emergency eyewash. • Hold eye lids open. • Flood affected area for at least 15 minutes or longer if pain persists. (Don't worry about making a mess.) • Take person to Student Health Center AFTER flushing the affected area. Call 911 if the injury is too serious to move the victim. • Ask someone to alert the stockroom and EHOS staff at x8-1449.
	<ul style="list-style-type: none"> • •

Take the time to develop a lab emergency plan and make sure all your lab workers understand what to do when the power goes off, building is evacuated, or a major spill or equipment malfunction occurs.