CSUN | CALIFORNIA STATE UNIVERSITY NORTHRIDGE

CHEMICAL HYGIENE PROGRAM

Revision 3.9 – 2023

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EMERGENCY INFORMATION

Major Emergencies

In the event of an accident in the laboratory which involves a fire, explosion, or a large release of a hazardous chemical:

- Evacuate the building by activating the nearest fire alarm.
- Call **911** and provide as many details of the accident including the location, personal injuries, and types of hazardous material involved.
- Report the injury to your Supervisor, Principal investigator, or instructor of record.

If the accident also involves chemical contamination or serious personal injury (e.g. profuse bleeding, broken bone, unconsciousness, immobile victim, etc.) follow the step above and:

- Move the victim from the immediate area of the fire, explosion, or spill (but only if this can be done without further injury to the victim or to you).
- Remove any contaminated clothing from the victim and flush all areas of the body contacted by chemicals with copious amounts of water for 15 minutes.
- Administer first aid as appropriate and wait for emergency medical responders to arrive.

Minor Emergencies

If the accident involves minor injuries requiring treatment at the Klotz Student Health Center (students), Kaiser On The Job / Personal Health Care Provider (employees), or nearest Urgent Care / Emergency Room (after hours) providers.

Students

  - During Normal Business Hours - If physically capable, administer self-first aid as needed and report to the *Klotz Student Health Center*.
  - After Normal Business Hours – If physically capable, administer self-first aid as needed and go directly to local urgent car, primary health care provider or emergency room.

- Use departmental vehicles whenever possible or voluntary use of personal vehicles if necessary.
- Drivers must have a valid driver's license and observe local speed limits and traffic ordinances.

Fire Alarms

If a fire alarm sounds, laboratory personnel should:

- If possible, extinguish open flames with the closest fire extinguisher available and close the fume hood sash.
- If not possible, leave immediately and close the laboratory door shut behind them.
- Pull the closest Fire Alarm.
- Exit the building immediately to a designated meeting area.
- Report any incident information to the CSUN DPS command center and stay onsite for a personnel account or to answer any questions.

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CSUN Safety & Compliance Committees

The following faculty and/or staff governed committees were established by CSUN as the local review bodies responsible for the oversight of safety and compliance functions of all research activities conducted at CSUN.

- *Institutional Animal Care and Use Committee (IACUC)*

The CSUN IACUC is a local review body that is responsible for ensuring that research projects involving vertebrate animals follow all applicable regulations. This involves the review of research protocols, post-approval monitoring of approved protocols, oversight and review of the institutions animal care and use programs, as well as the inspection of areas housing and conducting research on laboratory vertebrates.

- *Research and Instructional Space Committee (RISC*)

The CSUN RISC is a local review body responsible for promoting a safe working environment with respect to chemical and physical hazards in all research and teaching laboratories on campus, as well as shop areas that support similar activities. This involves the review of lab safety processes, the Chemical Hygiene Program and incident investigation. The RISC also reviews assigned trainings and general lab safety rules.

  - *Peer Safety Committee (PSC; optional)* – Departments may elect to create an inhouse safety committee comprised of fellow faculty and staff members. It is the intent of this peer ran group to walk fellow PI labs/spaces/areas and conduct general laboratory safety inspections.

- *Institutional Biosafety Committee (IBC*)

The CSUN IBC is a local review body responsible for establishing, monitoring and recommending policies and procedures involving hazardous biological materials and recombinant/synthetic nucleic acids as required and outlined in the NIH Guidelines for Research Involving Recombinant and Synthetic Nucleic Acid Molecules and the CDC/NIH Biosafety in Microbiological and Biomedical Laboratories (BMBL).

- *Radiation Safety Committee (RSC)*

The CSUN RSC is a local review body that evaluates and maintain surveillance over all users of radioactive material and other sources of ionizing radiation at the requirements contained in the CSUN Radioactive Materials License and the provisions of State and Federal regulations. This responsibility includes the authority to suspend or revoke permission to use ionizing radiation at the University.

- *Institutional Review Board (IRB*)

The CSUN IRB is required by the Department of Public Health and Human Services/Office of Human Research Protections to review all human subjects research activities conducted at CSUN. The function of the IRB is to ensure adherence to all federal, state, local, and institutional regulations concerning the protection of human subjects in research.

- *Research and Sponsored Programs (RSP)*

The CSUN RSP Office manages all grants and contracted programs for the University. Acts as the entity responsible for ensuring compliance with all federal, state, local, and CSU system-wide laws and requirements. The RSP Office also manages activities related to research integrity and intellectual property and has administrative oversight of all campus centers and institutes.

- Environmental Health and Safety (EH&S)

The CSUN EHS functions to incorporate the policies, procedures, support services, oversight, and stewardship necessary for the University to not only provide a safe and healthy environment for students and employees by complying with applicable EH&S laws and regulations, but to foster a culture of safety.

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I. Introduction

Purpose

California State University, Northridge (CSUN) is committed to providing a healthy and safe working environment for the campus community in accordance with the California State University Executive Order 1039, State and Federal regulations. The Chemical Hygiene Program (CHP) is a formal written document intended to outline best work practices and procedures to ensure that members of the university community are protected from health hazards that are associated with the use of hazardous chemicals and materials that are used, stored, handled or generated in areas found throughout our university that include but not limited to, laboratories, shops, & instructional spaces.

The CHP is a resource for, and to supplement to, the University Injury and Illness Prevention Plan (IIPP). All CSUN researching personnel are encouraged to review and implement these actions and procedures wherever possible. If assistance is needed, please contact ehs@csun.edu for support and guidance on implementing recommendations and developing and sustaining a positive safety culture in your laboratory.

Scope

The CHP applies to all university personnel who use hazardous chemicals and/or materials at CSUN. CSU policy applies to employees, but will be extended to students, volunteers, and visiting scholars/collaborators in efforts to keep all personnel safe.

The CHP does not apply to research involving exclusively radiological or biological materials, as these safety procedures and regulatory requirements are outlined in the *Radiation Safety Program* and *Biosafety Program* respectively. Research involving more than one type of hazard must comply with all applicable regulatory requirements and follow guidance outlined in the relevant safety manuals, authorizations, or programs.

Laboratories, technical areas, or other work units engaged in activities with hazardous chemicals possessing unusual characteristics, or are otherwise not sufficiently covered in the written CHP and supporting materials, must provide supplemental training covering Laboratory-Specific Safety Plan addressing the hazards and how to mitigate their associated risks, as appropriate.

CSUN has also established a Hazard Communication program that complies with CCR, Title 8, Section 5194, which is directly applicable to personnel who may handle hazardous chemicals and materials in most non-laboratory workplaces. Consult EH&S with questions regarding the applicability of the Hazard Communication Program (HazComm).

Per the HazComm program, workplace signage must be displayed in all areas where hazardous chemicals and materials are used, handled, or stored. Information that would be helpful in cases of emergency (to be included on labeling/signage):

- Lab/Shop Area Owner
- Building and room number
- Contacts information (names and numbers)
- Minimum PPE to be used / Restrictions
- Hazards found in room (e.g. biological, chemical, electrical, physical, radiological, etc.)
- NFPA 704 Placard (Fire Diamond found on RSS Chemical inventory page)

Signage shall be updated at a minimum, annually or as needed.

Contact EH&S at ehs@csun.edu for assistance with determining the need for a Laboratory Safety Plan and assistance with development of these materials.

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II. Definitions

Action Level: A concentration designated in Title 8, California Code of Regulations for a specific substance, calculated as an eight (8)-hour time weighted average, which initiates certain required activities such as exposure monitoring and medical surveillance.

Biohazardous Waste: Laboratory waste, including, but not limited to, human or animal specimen cultures from medical and pathology laboratories. Cultures and stocks of infectious agents from research and industrial laboratories. Human surgery specimens, tissues or animal parts, tissues, fluids, or carcasses suspected of being contaminated with infectious agents known to be contagious to humans. Waste containing discarded materials contaminated with excretion, exudate, or secretions from humans or animals that are required to be isolated to protect others from highly communicable diseases or diseases of animals that are highly communicable to humans. Waste that is hazardous only because it is comprised of human surgery specimens or tissues that have been fixed in formaldehyde or other fixatives, or only because the waste is contaminated through contact with, or having previously contained, chemotherapeutic agents, including, but not limited to, gloves, disposable gowns, towels, and intravenous solution bags and attached tubing that are empty.

Chemical Hygiene Officer (CHO): An employee who is designated by the employer (CSUN), and who is qualified by training or experience, to provide technical guidance in the development and implementation of the provisions set forth in the Chemical Hygiene Program.

Chemical Hygiene Program Binder: A centralized location where all CHP training, and documentation is kept along with a roster of past and current laboratory employees/personnel/collaborators. An exported hardcopy of the labs chemical inventory from RSS shall be found within a dedicated section of this binder. All training documentation must be updated whenever new lab personnel enter the facility to work, a new hazard is discovered/generated, a new room assignment or designation has occurred. A current Internal Hazard Assessment/PPE Evaluation shall be included in this binder that identifies all known and foreseen hazards within the laboratory.

Department Safety Coordinator (DSC): An employee who is designated by the employer, and who is qualified by training or experience, to provide technical guidance in the implementation of the provisions of the Chemical Hygiene Program.

Global Harmonized System (GHS): A system of hazard communication for chemical hazards that can be adopted by countries around the world. Developed by United Nations (UN), this system provides rules for classifying the physical hazards, health hazards and environmental hazards of chemical products via tools such as Safety Data Sheets (SDSs).

Hazardous Chemical: Any chemical for which there is statistically significant evidence, based upon at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed employees.

Hazardous Material: Any material which poses a health and safety threat to employees and/or laboratory personnel, or a threat to the environment as a result of improper handling, disposal or accidental discharge is considered hazardous.

Hazardous Waste: Hazardous materials which may have been used in a process or experiment, and are contaminated or no longer necessary, or are chemical byproducts of a process or experiment that have no further research/equipment/or facilities values, which may be disposed of.

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Hierarchy of Hazard Controls: A list of methods to reduce risk from a hazard. From most effective to least effective, these are: elimination or substitution of the hazard, engineering controls, administrative controls, and personal protective equipment (PPE).

Injury and Illness Prevention Program (IIPP): The CSUN Program that includes a wide range of interactive policies, procedures and practices that are intended to help identify and control workplace

Laboratory: A facility where "Laboratory use of hazardous chemicals" occurs. This is a work place where relatively small quantities of hazardous chemicals are used on a non-production basis, and is a facility which meets the following conditions:

A. Multiple chemical procedures or chemicals are used;
B. The procedures are not, and do not simulate, production processes;
C. Chemical manipulation are performed;
D. The potential for laboratory worker exposure to hazardous chemicals is minimized by the use of protective laboratory practices and equipment.

Laboratory Personnel: All Faculty, Technicians, Laboratory Assistants, Laboratory Managers, Teaching Assistants, Graduate Assistants, Student Assistants, Student Volunteers (Graduate and Undergraduate) and Visiting Scholars/Researchers/Collaborators conducting experimental study or work within the lab.

Medical Waste: Biohazardous, sharps and trauma scene wastes and is defined as "waste which is generated or produced as a result of the diagnosis, treatment, or immunization of human beings or animals, in research pertaining thereto, or in the production or testing of biologicals and may include infectious agents."

Permissible Exposure Level (PEL): A Permissible Exposure Limit (PEL) is the maximum amount or concentration of a chemical that a worker may be exposed to under OSHA regulations.

Personal Protective Equipment (PPE): Equipment designed to offer some measure of protection for laboratory personnel against specific hazards. Commonly used to refer to laboratory coats, safety goggles, gloves, face shields etc.

Principal Investigator (PI): The faculty or staff member supervising laboratory operations within a defined space and with a limited number of personnel. This may include instructors in teaching laboratories as well as research laboratories. In the context of the CHP, this is a broader definition than that normally used to signify the recipient of a particular grant or award.

Pyrophoric: A substance that will ignite spontaneously in air at a temperature of 130 °F (54.4 °C) or below.

Risk and Safety Solutions (RSS): External vendor providing tools for chemical hazard assessment, inventory management and safety inspections to CSUN.

Safety Data Sheets (SDS): Written or printed material concerning a hazardous substance which is prepared in accordance with Title 8, CCR, section 5194(g). Employers shall have on hand, or online access to, a safety data sheet for each hazardous substance used.

Standard Operating Procedures (SOP): Established or prescribed methods to be followed routinely for the performance of designated operations or in designated situations.

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Threshold Limit Value (TLV): A TLV reflects the level of exposure that the typical worker can experience without an unreasonable risk of disease or injury.

Visiting Scholars/Researchers/Collaborators: Undergraduate and Graduate-level students or established scholars from other universities who seek to come to CSUN to do physically perform experimental study in collaboration with a member of the CSUN faculty. A memorandum of understanding (MOU) between the two universities must be in place with Purchasing and Contracts prior to working on campus.

III. Responsibilities

Employees, Students and Laboratory Personnel Working with Hazardous Chemicals:

All employees and other personnel who assign and/or oversee work within a laboratory and shop areas at this University are responsible for ensuring that work controls, conditions and procedures are consistent with Federal, State and local regulations and that University policies are implemented and maintained to provide for the protection of individuals and to safeguard the environment.

Employees and other personnel who work in University facilities have the right to be informed about the potential health hazards of the chemicals in their work areas and to be properly trained to work safely with these substances. This includes custodial staff, and trade professionals that may occasionally access laboratories to clean or conduct repairs.

Each individual performing a task within a laboratory at CSUN, is expected to comply with applicable University Policies, Programs and Procedures; which includes CSU Policy 1039, Cal- OSHA and OSHA Environmental and Occupational Health and Safety regulations. Additionally, each individual is expected to perform work in a safe and reasonable manner, report and address hazards they become aware of (personal observation or via reporting process) and act to ensure the health and safety of themselves, coworkers, students, and all others at the University without fear of reprisal.

All employees and other recognized personnel working with hazardous chemicals have the responsibility to conscientiously participate in training courses on general and laboratory specific safety. All personnel must read and be familiar with the contents of the CSUN CHP. Those working with chemicals are responsible for staying informed about the chemicals in their work areas, safe work practices (including available engineering controls), and proper PPE required for the safe completion of their work activities. Failure to comply with these requirements will result in progressive disciplinary action in accordance with University policy, and may result in temporary suspension of actives until corrective action is implemented.

Environmental Health & Safety (EH&S)

CSUN EH&S, is responsible for establishing, communicating and maintaining campus environmental health and safety programs that meet the requirements of all applicable Federal, State, and local regulations. This includes: administering and overseeing institutional implementation of the Laboratory Safety Program which encompasses the campus CHP. EH&S provides technical guidance to personnel at all levels of responsibility on matters pertaining to the use of hazardous materials.

If situations are immediately dangerous to life or death (IDLH), EH&S Professionals, have the authority to order the cessation of the activity until the hazardous condition is abated and risk sufficiently mitigated. The CSUN EHS Director, with support from other EH&S Professionals, is specifically responsible for;

- Informing PIs/Laboratory Supervisors of all health and safety requirements, and assisting with the selection of appropriate safety controls, which include; required engineering controls, admin controls, and personal protective equipment.
- Identifying a University Chemical Hygiene Officer (CHO) who has responsibility for the oversight of the development, implementation, and maintenance of the Chemical Hygiene Program (CHP). If the University CHO Position is vacant, the Director of EH&S shall serve as the University CHO.
- Providing technical assistance to academic departments to achieve compliance with the CHP.
- Acting as the chemical hygiene coordinator for the College or Departmental (as requested).
- Providing consultation, monitoring and training support services on matters related to laboratory safety.
- Arranging employee exposure monitoring (as required).
- Monitoring legal requirements concerning regulated substances.
- Providing regular formal audits for compliance with the CHP.
- Reviewing chemical inventories to determine which chemicals are particularly hazardous.
- Reviewing chemical inventories to determine campus Maximum Allowable Quantity (MAQ) levels for all academic departments.
- Reviewing and acknowledging departmental purchase requests for Hazardous Materials using a University P-Card.
- Monitoring of laboratory safety equipment such as chemical fume hoods, emergency eyewash stations, and chemical safety showers.
- Assisting DSC's and PI's, identify and define the location of "Designated Areas" where Particularly Hazardous Substances and carcinogens will be used, and ensure that the inventory of these substances are properly maintained.
- Seeking methods to improve the CHP.
- Reviewing the CHP annually.
- Assisting the campus in identifying health and safety hazards and for providing organizational leadership with information about hazards and appropriate controls.

Dean of College and/or Chair of Department

- Responsible for establishing, promoting, and maintaining a culture of safety within their respective Colleges and Departments.
- Designate a College or Departmental Safety Coordinator.
- Ensure that requirements related to chemical hygiene, as prescribed in the CHP, are adequately supported at the college and/or departmental level.
- Review reported close calls, documented spill releases, exposures, and all incidents/accidents/injuries that occur within laboratory settings.
- Evaluate corrective action responses that result from reported close calls, documented spill releases/exposures and laboratory incidents/accidents/injuries.
- Areas of responsibility include, but are not limited to hazard assessment, training, maintenance and use of safety equipment, inspections, and hazardous material management.

- Must attend/complete all required EH&S Trainings and follow the procedures described in the training. If a CSU Policy or program is in conflict with a Collective Bargaining Agreement (CBA), the CBA shall take precedence unless otherwise proscribed by law or regulation.

College/Departmental Safety Coordinator (DSC)

- Areas of responsibility include, but are not limited to hazard identification, hazard assessment, training, maintenance and use of safety equipment, inspections, and hazardous material management.
- Responsible for confirming that chemical inventories are completed and certified by faculty members and are updated in RSS annually. Copies of the chemical inventories are to be provided to EH&S upon request.
- Ensure that there is written documented evidence of General Laboratory Safety, Specific Laboratory Hazard and CHP Training for all Laboratory Personnel can be found within the CHP binder.
- Act as liaison for the EH&S Office to implement the CHP at the College and/or Departmental level.
- Assist in coordinating and/or conducting laboratory inspections to ensure compliance with existing laboratory SOP/CHP.
- Ensure that faculty are reminded to update RSS as chemicals are used, disposed, added, and changed annually in all managed laboratories. Copies are to be provided to the EH&S Office upon request.
- Verify that Principal Investigators (PIs) are made aware to have chemical manufacturers' SDS hard copies and/or a computer available within the research lab appropriately bookmarked with a link to an online SDS library for all chemicals used, stored, created and disposed of within the appropriate lab.
- Gather and maintain appropriate departmental safety training records provided by PIs/Laboratory Owners (General Lab Safety Training, Hazard Communication, Injury Illness Prevention Program, Internal Workplace Hazard Assessment and PPE Departmental Assessments/Evaluation, Hazardous Waste Generation/Handling/Disposal, Departmental Assessments, Fire Life Safety, Emergency Safety Eyewash/Shower, etc.)
- Consult with employees in the development, planning, implementation and corrective actions to improve EH&S function and compliance
- Must attend/complete all required EH&S Trainings and follow the procedures described in the training. If a CSU Policy or program is in conflict with a Collective Bargaining Agreement (CBA), the CBA shall take precedence unless otherwise proscribed by law or regulation.

Laboratory Owner (Faculty/Professors/Laboratory Instructors/Principal Investigators)

- Shall identify and report all foreseen biological, chemical, electrical, physical, and radiological hazards associated with their teaching and research activities.
- Minimum PPE notifications shall be displayed on the Door Hazard Sign at the room/area entrance prior to entry.
- Shall ensure students, employees, official volunteers and others who are associated with their teaching and research activities, receive compressive hazard communication, and documented safety training on all foreseen hazards when working with hazardous chemicals or materials.
- Responsible for working with the DSC and/or EH&S Office to implement applicable campus safety programs and document compliance with applicable EH&S requirements.

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- Responsible for annual updating and managing laboratory chemical inventory using RSS Software sponsored by the CSU.
- Ensure compliance with the CHP within their respective laboratories.
- Responsible for providing student safety orientation and Laboratory Specific Hazard Training to work safely with hazardous materials and laboratory equipment before work is conducted within the lab.
    - These training documents are to be maintained as written and signed records of laboratory-specific or other specialized training alluded to in the CHP. Printed records of training are required. Training must include, at a minimum;

        - Laboratory Hazard Assessment
        - General Lab Safety Training
        - Laboratory Specific Hazard Training
        - Chemical handling & inventory management
        - Hazard Communication
        - Injury Illness Prevention Program
        - Hazardous Waste Generation/Handling/Disposal (when applicable)
        - Fire Life Safety
        - Emergency Eyewash/Shower usage
        - Campus Emergency Procedures

- Responsible for annual re-certifications of Laboratory Hazard Assessments and Chemical Inventory, using the RSS Assessment Tool.
- Ensure that appropriate protective safety equipment is available, and in good condition.
- Must have manufacturers' Safety Data Sheets (SDS) as hard copies and/or have a computer available within their laboratory appropriately bookmarked with a link to an online SDS library for all chemicals used, stored, created and disposed of in lab.
- Promptly fill out and submit Laboratory Accident / Incident Report Form to the following whenever a laboratory incident, accident or injury occurs:
    - Department Chair
    - Department Dean
    - Office of Research and Sponsored Programs
    - EH&S x2401
- All life-threatening emergencies including, but not limited to, major chemical spills or gas leaks, explosions, unintended fires, or uses of fire extinguisher or fire alarm must be reported to CSUN DPS by dialing 911 from a campus phone or personal cell phone while on campus. Serious injuries – those requiring professional medical attention - must be reported to EH&S within 8 hours of event.
- Promptly notify CSUN Physical Plant Management (PPM: 818-677-2222) if engineering controls (e.g., chemical fume hood, snorkel hoods) and safety equipment (e.g., emergency showers/eyewashes, fire extinguishers, etc.) are defective or non-operational.
- Inform facilities personnel, other non-laboratory personnel and any outside contractors of potential laboratory-related hazards that can be found during active lab operations.
- Coordinate repairs and renovation to minimize potential exposure(s) to provide a safe working environment.
- Must attend/complete all required EH&S Trainings and follow the procedures described in the training. If a CSU Policy or program is in conflict with a Collective Bargaining Agreement (CBA), the CBA shall take precedence unless otherwise proscribed by law or regulation.

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Laboratory Personnel (non-supervisory Faculty, Technicians, Laboratory Assistants, Teaching Assistants, Graduate Assistants, Student Assistants, Student Volunteers, Visiting Scholars/Collaborators, and any other graduate/undergraduate student researcher)

- Shall follow all the established EH&S requirements for CSUN.
- Reporting all identified hazards, close calls, faculty safety equipment, incidents, accidents that result in personal injury or harm, property damage or exposure to hazardous substances to their appropriate Lab Owner/PI.
- Read and understand the CHP and act in accordance with the safety requirements established by the laboratory when working in the lab.
- Individually responsible for ensuring, his or her own safety and for promoting a safe, health, and environmentally-sound workplace.
- Shall be responsible for other persons within a reasonable expectation of safety.
- Understand the function and proper use of all assigned PPE.
- Wear and properly maintain the PPE necessary to perform each task.
- Use engineering controls and safety equipment properly and according to laboratory requirements.
- Read and understand Health & Safety SOPs and other program documents.
- Must attend/complete all required EH&S Trainings and follow the procedures described in the training. If a CSU Policy or program is in conflict with a Collective Bargaining Agreement (CBA), the CBA shall take precedence unless otherwise proscribed by law or regulation.

IV. Hazards and Controls

General Rules

- When working with flammable chemicals, be certain that there are no sources of ignitions near enough to cause a fire or explosion in the event of a vapor release or liquid spill.
- Be aware of material hazards as determined from the SDS and other appropriate references.
- Appropriate personal protective equipment should be worn every time you work around/use chemicals. Become familiar with the types of protective equipment available and understand their use and limitations.
- Understand appropriate procedures for emergencies, including evacuation routes, spill cleanup procedures and proper waste disposal. (CSUN Emergency Procedures).
- Know the location and proper use of emergency equipment within the room (i.e. fire extinguishers, eyewashes, showers, spill kits, fire alarms etc.).
- Know how and where to properly store chemicals.
- Use proper personal hygiene practices. (See Personal Hygiene).
- Know the proper methods of transporting chemicals.
- Be alert to unsafe conditions and correct or report them as soon as they are detected.
- Do not use damaged equipment. Report all damaged or malfunctioning safety equipment to the Principal Investigator, DSC or Shop Coordinator immediately.
- Use all equipment in a safe manner and only for its designated purpose.

Personal Hygiene

- Wash promptly with soap and water whenever a chemical has contacted the skin or has been suspected to have contacted the skin and before leaving the work area.
- Work surfaces are decontaminated once a day.

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- Avoid inhalation of hazardous materials.
- Procedures are performed carefully to prevent formation of aerosols.
- Mouth pipetting is prohibited.
- Do not eat, drink, smoke/vape, chew gum, or apply cosmetics when working with hazardous chemicals.
- Do not store food or drinks intended for human consumption in refrigerators/freezers that are designated for chemical, radiation and/or biohazard use.

Personal Protective Equipment (PPE) & Engineering Controls

- PPE shall be used only where engineering controls are not feasible. The need for special accommodations, such as respiratory protection (i.e. full face/half face respirators), shall be evaluated by EH&S.
- Per the CSUN PPE Program, all Lab Owners/PI's are responsible for coordinating with DSC and/or EH&S to perform a Hazardous Assessment and to determine PPE Evaluations for every room acknowledged as assigned research lab space.
- Eye protection must be worn by personnel at all times when hazardous chemicals are being used.
    - Selection of eye protection must be assigned based on the foreseeable hazards.
- Protective gloves must be available and resistant to the type of chemical being used.
    - Permeability, breakthrough times, and special workplace conditions must be considered when selecting appropriate protective gloves.
    - Inspection of gloves, must be conducted before each use, to ensure they are in good condition.
    - Wash non-disposable gloves before removal and replace them periodically or when damaged.
    - Remove contaminated gloves before touching shared surfaces such as doorknobs, faucet handles or computer keyboards/mice.
- Wear close-toed/close-heeled shoes in the laboratory, sandals or other open toed footwear is not permitted when working with hazardous chemicals.
- Long hair and loose clothing must be pulled back and held securely away from the face.
- Any forms of jewelry, or similar embellishments, are not recommended.
- Carefully inspect all protective equipment before using. Do not use defective protective equipment.
- Disposable protective clothing should not be worn outside of the laboratory work area.
- Have an identified storage area designated for personal protective equipment (PPE) that is free from contamination due to chemicals and other hazardous materials.

Chemical Inventories

Each PI/Lab Owner is required to maintain a current chemical inventory that lists the chemicals, compressed gases and other hazardous materials used and stored in the labs and the approximate quantity of these chemicals. Chemical inventories are used to ensure compliance with storage limits and other regulations and can be used in an emergency to identify potential hazards for emergency response operations.

CSUN has adopted Risk & Safety Solutions (RSS) cloud based chemical inventory to facility improved inventory management and reporting. This allows CSUN to comply with both long standing and new regulation requiring chemical inventory maintenance and reporting.

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As new chemicals are added to the inventory via RSS, each PI/Lab Owner must confirm that they and all researchers/personnel have access to the Safety Data Sheets (SDS) for those chemicals. Each chemical should be dated when it enters the workspace so that expired chemicals can be easily identified for disposal. Inventory the materials in your laboratory frequently (at least annually) to avoid overcrowding with materials that are no longer useful and note the items that should be replaced, have deteriorated, or show container deterioration. Unneeded items should be discarded as hazardous chemical waste. Indicators for disposal include:

- Cloudiness in liquids
- Color change
- Evidence of liquids in solids, or solids in liquids
- Puddling of material around outside of containers
- Pressure build-up within containers
- Obvious deterioration of containers

To facilitate compliance with new electronic reporting requirements, each lab group is required to upload an up-to-date chemical inventory to RSS using the new Chemical Inventory Template. This template has been developed to address the regulatory requirements of California Environmental Reporting System (CERS). Please see our Chemical Inventory Template Instructions for details. All CSUN PIs can log in to the RSS site using their CSUN Logon credentials at https://riskandsafety.com/. Once logged in, PIs can assign "Authorized Personnel" or "Designees" to manage the lab's inventory.

The California Fire Code sets forth Maximum Allowable Quantities (MAQs) of hazardous materials that can be stored in any given area. The exact quantity of a chemical which may be stored varies depending on the class of chemical, the construction of the building it is in, the floor it is stored on, and whether it is stored in a rated cabinet. EH&S will assist labs in maintaining their inventories in accordance with these limits, and may require review of planned laboratory moves to ensure that these limits are not exceeded. Questions and comments regarding RSS and Chemical Inventory Program should be directed to ehs@csun.edu.

Safety Data Sheets

The Occupational Safety and Health Administration (OSHA) requires that an SDS must be available for each hazardous substance in the laboratory's or facilities chemical inventory. SDSs are available from the RSS SDS website. PIs/Laboratory supervisors are responsible for keeping SDSs current and making them available to all employees throughout the work day.

SDSs must be in a central location that can be accessed immediately in the event of an emergency.

Electronic copies may be used but must be accessible to all laboratory personnel.

Each safety data sheet shall be in English and shall contain the following information (using the specified section numbers and headings):

- Section 1 : Identification
- Section 2 : Hazard(s) identification
- Section 3 : Composition/information on ingredients
- Section 4 : First-aid measures
- Section 5 : Fire-fighting measures
- Section 6 : Accidental release measures

- Section 7 : Handling and storage
- Section 8 : Exposures controls/personal protection
- Section 9 : Physical and chemical properties
- Section 10: Stability and reactivity
- Section 11 : Toxicological information
- Section 12 : Ecological information
- Section 13 : Disposal considerations
- Section 14 : Transport information
- Section 15 : Regulatory information
- Section 16: Other information, including date of preparation or last revision.

Door Hazard Sign

The appropriate minimum PPE should be informed by the results of the Laboratory Hazard Assessment (LHAT) on RSS. Ultimately, the information presented on this document are decided upon by the Laboratory Owner (e.g. Principal Investigator-research labs) or appointed DSC (instructional labs).

The appropriate NFPA 704 placard information and GHS Hazard Pictogram assignments for a room can be found on RSS Chemicals under Inventory Summary > Door Hazard Signs.

For help determining what pictograms/text to use, please contact Environmental Health & Safety Office at ehs@csun.edu or (818) 677-2401.

Housekeeping

- Do not store hazardous materials in/or near sinks without utilizing secondary containment.
- Access to emergency equipment, electrical panels, showers, eyewashes, aisles and exits must remain clear from all physical obstructions at all times.
- Keep all work areas, especially laboratory benches, clean and clear of clutter.
- Wastes should be properly labeled and kept in compatible containers. (See Hazardous Waste Labels).
- Follow accepted waste disposal procedures.

Labeling

Labeling requirements for all hazardous substances are summarized as follows:

- All manufacturer containers of hazardous materials must be labeled with the identity of the hazardous substance.
- The label must contain all applicable hazard warning statements.
- The name and address of the chemical manufacturer or other responsible party must be present.
- Manufacturer's product labels must remain on all containers and must not be defaced in any manner. Appropriate hazard warning statements must be present. If not, that information must be added by end user.
- Labels must be legible, in English, and prominently displayed.
- Secondary containers (i.e. containers used for storing commercial chemicals that are not the original manufacturer packaging, such as spray bottles) must include the chemical common name in English, and appropriate hazard warning.
- Laboratory-prepared solutions of hazardous chemicals and analytical samples containing hazardous chemicals must be labeled with the identity of the chemical(s) and an appropriate hazard warning(s); the date and the identity of the responsible party should be included when possible.

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- Chemical waste shall be properly labeled with the CSUN Hazardous Waste sticker, legibly filled out, and kept in chemical compatible containers within a designated waste storage site.

Transporting Hazardous Materials

Precautions must be taken when transporting hazardous materials between laboratories. Hazardous materials must be transported between Shop and laboratories in break-resistant, secondary containers such as commercially available bottle carriers made of rubber, metal, or plastic, that include carrying handle(s) and that are large enough to hold the contents of the chemical container in the event of breakage.

- All hazardous materials transported through public spaces should be contained and moved in a safe manner that minimizes any chance of a spill or release.
- Individuals transporting hazardous materials through public spaces should be familiar with the material's hazards and know what to do in the event of a release or spill. Safety Data Sheets (SDSs) are a good source for this information
- Materials that are unstable, explosive, or extremely or acutely hazardous should not be moved without first contacting EH&S.
- Hazardous materials must be attended to at all times while being transported and never be left unattended in public spaces.
- Hazardous materials in breakable containers must be transported in secondary containment.
- Conduct a risk assessment to determine the appropriate type of secondary containment.
- Prior to transporting biohazardous materials, the exterior of the container must be decontaminated (i.e., safe to touch with an ungloved hand)

Containment for Transporting Chemicals

- Chemicals must be transported in break-resistant or approved secondary containment that is capable of containing all materials in the event of breakage or spill. Approved secondary containment is defined as commercially available bottle carriers made of rubber, metal, or plastic, with carrying handle(s).
- Another acceptable secondary containment is a cart with spill-resistant lips on all four sides. If using a cart without spill-resistant lips, the chemicals should be placed into plastic bins or shipping boxes with padded packing material.
- Sturdy carts with secondary containment should be used when transporting multiple, large, or heavy containers.
- Do not carry containers by hand. Use bottle carriers or carts with secondary containment.
- Contact your Departmental Safety Coordinator, or the EH&S Office if you have questions about what type of secondary containment is appropriate.

V. Prior Approval for Special Laboratory Activities

Specific approval must be granted by the laboratory PI for special activities. Such activities include:

- Unattended operations
- Working alone or work outside the normal business hours of 8 AM – 8 PM. Lab personnel working alone or after hours should implement the use of a buddy system (regular phone calls or visits by a second person to check on wellbeing) when actively performing work involving chemicals.
- Work by visiting scholars/researchers/collaborators

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- Particularly hazardous operations

Unattended Operations

- When possible avoid leaving potentially-hazardous operations unattended.
- All lab personnel are to receive prior approval from their PI and notify Department Safety Coordinator for all unattended lab operations.
- If unattended work is required, laboratory personnel are to leave the lights on in the room, lock the door behind them, and post a notification on the door so that it is visible from the hallway.
- Notification of unattended operation(s) shall include, at a minimum: the name of the PI, a 24-hour telephone number of the PI and/or DSC, a description of the active operation, a list of materials involved, and the date and time when direct supervision of the operation will resume.
- Unattended operations shall not exceed 24 continuous hours without direct supervision.
- Provide for proper ventilation. When appropriate, conduct chemical operations in a running chemical fume hood with the sash lowered as much as feasible.

Working Alone & Off-Hour Work

Working outside of supervised hours or working solo carries additional risks, therefore the following practices should be adhered to:

- Solo work and working outside of normal hours should be avoided if possible, and individual laboratories/shops may choose to prohibit all solo/unsupervised work.
- Laboratory access outside of supervised hours will be restricted to a specific subset of Authorized Users based up on the Principal Investigator and/or Shop Coordinator's discretion.
- Solo work shall only be conducted with approval of the Principal Investigator and/or Shop Coordinator and with Authorization form the requesting personnel's direct supervisor or advisor. A Working Solo/Unsupervised Authorization Form must be completed and filed with the Department Safety Coordinator before work begins, and kept on file for a period of 3 years.
- Principal Investigators and/or Shop Coordinators shall discuss issues of solo work and working outside of normal hours with the Department Chair before authorizing clearance.

Visiting Scholars/Researchers/Collaborators

Prior to the commencement of work, a standing memorandum of understanding (MOU) between Universities/Institutions must be filed with CSUN. Please contact the Department of Purchasing and Contracts for details.

Particularly Hazardous Operations

EH&S should be contacted prior to operations:

- That will likely exceed the Cal/OSHA Permissible Exposure Limits.
- That will entail working with explosives, extremely reactive chemicals, extremely toxic chemicals, or large quantities of materials that could potentially be released into the environment.

VI. Chemical Procurement

- Refer to the Hazardous Material Chemical Procurement Program

VII. Waste Disposal

Hazardous Waste Disposal Procedures

- Do not mix incompatible materials.
- Package waste in a sealed container made of a chemically compatible material and store in a cool, dry location.
- All waste containers must be properly labeled with the CSUN Hazardous Waste Label.
- It is the responsibility of the waste generator to schedule a waste pickup with EH&S.
    - The waste generator must submit a Hazardous Waste Pickup Request via Microsoft Bookings, which can be found on the CSUN EH&S Homepage.
    - The waste generator must submit a completed Hazardous Waste Transfer Form to EH&S prior to the waste pickup (mail drop 8284). The inventory must include chemical/waste name, amount of waste to be disposed of, preparation date, and hazard class for the waste.
- Keep waste materials out of access by unauthorized individuals.
- For additional hazardous waste disposal information, refer to the CSUN Hazardous Waste Management Program.

Accumulation Time

Hazardous waste may not accumulate anywhere on campus for more than one calendar year. This one-year period includes the 60-90 days EH&S may need to store the waster prior to shipment. As such, hazardous wastes must not be accumulated in laboratories for more than 270 days (9 months) after the accumulation start date.

One major exception to the one year maximum accumulation period pertains to extremely hazardous wastes. Extremely hazardous wastes (e.g., hydrofluoric acid, arsenic or bromine containing wastes) may not be accumulated for more than 90 days if certain volume limits are exceeded. For this reason, EH&S advises removal of all hazardous waste as soon as containers are full or at least every 90 days.

Waste Requiring Special Handling

A. Sharps
Syringes, glass pipettes, and other sharps contaminated with hazardous materials (chemicals, radioactive, or biologicals) must be placed in specially designed rigid containers. Do NOT use red medical waste containers for non-medical waste sharps; unless the biohazard symbol has been defaced.

B. Peroxide-forming chemicals
Peroxide-forming chemicals include a number of substances which can react with air, moisture, or product impurities and undergo a change in their chemical composition during normal storage. The peroxides that form are highly reactive and can explode upon shock or spark. Peroxides are not particularly volatile and thus tend to precipitate out of liquid solutions. It is particularly dangerous to allow a container of these materials to evaporate thereby concentrating any peroxides that may have formed in the container.

Each container of peroxide forming chemicals must be dated with the date received; it is very strongly recommended to also include the dated of when the container was first opened.

There are three classes of peroxide forming chemicals:

1. Form potentially explosive peroxide without concentration,
2. Form potentially explosive peroxides on concentration, and
3. Autopolymerize, with each class having different management guidelines.

Ensure that containers are kept tightly sealed to avoid unnecessary evaporation; Appling parafilm to the cap is strongly recommended when container is not in use and stored. Visually inspect container periodically to ensure they are free of exterior contamination or crystallization.

If old container of peroxide forming chemical are discovered in the laboratory, (greater than five years past the expiration date or if the date of the container is unknown), **do not handle the container**. Immediately contact EH&S at 818-677-2401 for proper disposal. Secure the immediate area and restrict access to the container until it can be evaluated by EH&S Personnel.

C. Unknowns
Unlabeled chemical containers and unknown/unlabeled wastes are considered "unknowns" and additional disposal costs must be paid by the campus to have these materials analyzed and identified. These containers must be labeled with the "UNKNOWN". Do not mix unknowns in order to minimize unforeseeable chemical reactions and disposal costs.

Medical/Infectious Waste Disposal Procedures

- Refer to Section VI: Procedures in the CSUN Medical Waste Management Program.

Radioactive Materials

- Refer to Section VIII: Radioactive Waste Disposal in the CSUN Radiation Safety Manual.

VIII. Lab Spills & Accident Response

Radiological Material Spill

- Refer to Section VII: Emergency Action Plan in the CSUN Radiation Safety Manual.

Biological Material Spill

- Refer to Section IV: Responsibilities in the CSUN Medical Waste Management Plan.

Elemental Mercury Spill

- Report spill to EH&S Office regardless of quantity.

Minor Chemical Spill

- A minor chemical spill is one that laboratory workers can safely handle with the resources locally available and where there is no potential risk of health hazards (i.e., fire, explosion, or chemical exposure).
- The following minor chemical spill procedures should be used by knowledgeable and experienced laboratory workers only:
    - If the spilled material is flammable, turn off all ignition and heat sources. Alert people in the immediate area, and adjoining spaces, of the spill.
    - Notify PI/Lab Owner immediately.

- Confine the spill to a small area.
- Select all appropriate PPE needed for the task.
- Select (and apply) appropriate neutralizing agent or absorption material as needed to perform the cleanup.
- Select a cleaner or disinfecting solution that is appropriate to address the hazardous chemical spill.
- Apply the cleaner of your choice to allow to sit for the appropriate activation times as described on the bottle labeling, fact sheet or safety data sheet.
- Using PPE, wipe down all affected areas until dry.
- Collect all items used to perform pickup (i.e. paper towels, sponges, absorbent pads, etc.) and place them into a poly bag. Seal and prep the bag for appropriate hazardous waste disposal (this includes proper labeling)

Major Chemical Spill

- Only personnel who have been properly trained are authorized to contain and clean up a major hazardous chemical spill. The University has resources for responding to hazardous materials incidents. These following steps can be taken, if safe to do so, to help minimize the impact of the spill:
  - All personnel should evacuate the spill area and close/lock doors to the affected area.
  - If the spilled material is flammable, turn off all ignition and heat sources if safe to do so.
  - Mandatory notifications
    - 1st PI/DSC
    - 2nd Call CSUN DPS by dialing 911 and report the incident and conditions to the dispatcher.
    - 3rd EH&S
    - 4th Department Safety Coordinator
    - 5th Academic Department Office
- For additional information, refer to the CSUN Hazardous Materials Spill/Release, Emergency Procedures.

Accident Response Procedures

Lab Owners/PIs are responsible for ensuring that their laboratory personnel receive appropriate medical attention in the event of any laboratory incidents, accidents, illnesses, injuries and near misses. In turn, all of the previously listed events must be reported to the EH&S Office within 8 hours of occurrence. PI will be responsible for filling out the Laboratory Accident/Incident Report Form. EH&S will follow-up by reviewing the Laboratory Accident/Incident Report Form to review the PI's assessment of the root cause of the event(s), and recommended corrective actions to prevent future accidents/incidents.

- Once completed by PI/Lab Owner, Laboratory Accident/Incident Report Form is to be submitted to the EH&S Office, Department Chair and if necessary to College Dean.

If a laboratory personnel has a severe or life-threatening injury, call for emergency response by dialing 911 from any campus phone or personal cell phone. Employees with minor injuries should be treated at the Klotz Student Health Center (SHC) for further evaluation and treatment. After normal business hours, treatment can be received at nearby urgent care or emergency rooms.

Critical Incident Notification Protocol

Refer to Section XVII: Reference & Resources

IX. Hazard Specific Safety Procedures

General Rules

- It is the responsibility of the Department, Laboratory Owner/PI and laboratory workers to ensure that all original manufacturer labels on packages and containers are not removed, defaced, or illegible (unless the container is empty and being disposed of).
- SDS's must be readily accessible to laboratory workers for all materials used (hard copies or online).
- If a chemical substance is produced exclusively for laboratory use and the chemical composition is known, the following shall be conducted:
    - The Laboratory Owner/PI, or DSC will need to determine if it is a hazardous chemical and provide appropriate training (i.e., toxicological properties, safe handling procedures, potential hazards, etc.) and ensure the chemical is properly labeled with contents, and hazard warning(s).
- If a chemical substance is produced exclusively for laboratory use and the chemical composition is unknown, the following shall be conducted:
    - The Laboratory Owner/PI, or DSC shall assume that it is a hazardous chemical, and implement this CHP.

Chemical Storage

Each PI/Lab Owner is to identify and assign specific locations found within their laboratory to store and return each chemical after each use safely. Acceptable chemical storage locations may include corrosive cabinets, flammable cabinets, laboratory cabinets/shelves, or labeled refrigerators and freezers.

Chemical Fume Hoods should not be used as storage area for chemicals, as this over time will impair the ventilation and operating capacity of the hood.

- Properly segregate incompatible chemicals whenever possible (review chemical SDS for recommendations or contact EH&S for additional resources).
- Keep volatile liquids away from heat, sun, and sources of ignition.
- Corrosives and flammables should be stored below eye level.
- Evaluate chemicals periodically for viable use. Contact EH&S for guidance with storage and disposal.
- Evaluate storage locations themselves and their hardware periodically for viable use. Contact EH&S for guidance with storage and disposal.
- All stored containers and research samples must by properly labeled and tightly capped to prevent vapor interactions and to alleviate nuisance odors. Storing chemicals in corked flasks, or rubber/glass stoppers should be avoided due to potential for leakage.
- Laboratory refrigerators and freezers must be labeled appropriated with “No Food/Drink” and must never be used for the storage of consumables. Freezers should be defrosted periodically to prevent chemical containers from being trapped in ice formations. Only approved chemical refrigerators and freezers, not ordinary household refrigerators and freezers, should be used to store flammables.
- Chemicals shall not be stored under sinks to provide quick access for facility maintenance and repairs.

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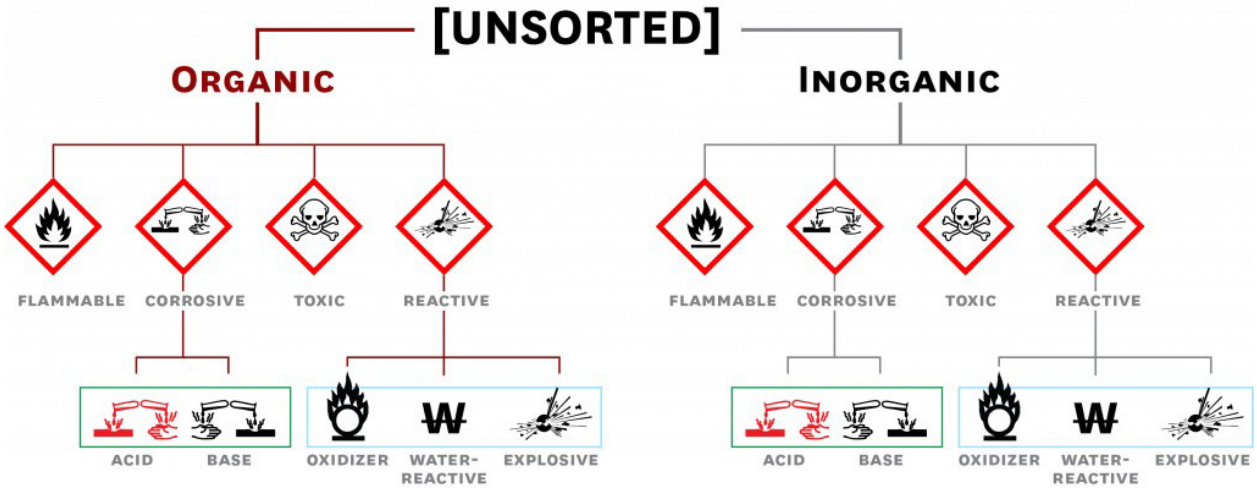

Chemical Hazard Properties

Toxicity

Consider the toxicity of the material, with particular attention paid to regulated materials. In some cases, this may mean that certain chemicals will be isolated within a storage area. For example, a material that is highly acutely toxic but is also flammable may be stored inside sealed secondary containment in the flammable storage cabinet to protect it against accidental release.

1. General Rules
    - Particularly hazardous substances (PHS) storage areas and work locations are required to be conspicuously identified as to the hazard class by the words “acute toxicant”, “carcinogen” and/or “reproductive toxicant”, as appropriate.
    - Shall not be stored under sinks.

Flammability

Store flammable and combustible liquids not in use in a flammable storage cabinet or approved refrigerator or freezer. The maximum amount permitted outside a flammable cabinet, safety can or approved refrigerator or freezer is ten gallons of combined flammables, with no individual container being greater than one gallon (8CCR §5538).

1. General Rules
    - Do not store flammable liquids on the floor or in non-approved refrigerators or freezers.
    - Label all storage areas containing flammables with the word “flammable”.
    - Flammables must be kept away from oxidizing, pyrophoric, and water reactive chemicals.
    - Do not house flammable materials in cold rooms since they are not ventilated.
2. Flammable Cabinets
    - Must be labeled “FLAMMABLE” in red lettering.
    - Must be equipped with self-closing mechanism and have a three-point latching/locking system.
    - Flammable cabinets are rated for maximum capacity of 15 gallons or 60 gallons
    - Provision of additional secondary containment for all glass bottles stored above the base is highly recommended.
    - Store materials that burn very hot and cannot be extinguished with usual extinguishants (e.g., flammable metals or self-heating chemicals) in a separate cabinet from flammable liquids.

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- If ventilation is required for your flammable cabinet, please email ehs@csun.edu Note: A tray or sock of activated carbon can be very effective at combatting buildup of vapors in flammable cabinets.

3. Flammable Storage Refrigerator/Freezer
   - Appropriate for small amounts of flammable materials, flammable liquids (flash points < 100ºF), and combustible liquids (flash points > 100ºF).
     - Exceptions to this rule may be viewed in the Storing Flammable Liquids in Refrigerator/Freezer (page 26).
   - All chemicals should be stored with consideration to incompatibilities so that if a container breaks, reactive materials do not mix and react violently.
     - Appropriately labelled secondary containment should be used to separate incompatible chemicals.
   - It is highly recommended that all glass containers in refrigerators and freezers be placed in secondary containment.
   - All refrigerators or freezers not positively identifiable as approved units shall be considered non- approved, and shall be clearly labelled "Not approved for the storage of flammables", or words to that effect.
4. Explosion-proof Refrigerator/Freezer
   - Appropriate for large quantities of flammables.

Reactivity

Do not store materials that may start a fire (pyrophorics, self-heating chemicals, water reactives) or contribute significantly to a fire (oxidizers, organic peroxides, explosives, self-reactive materials) with flammable or combustible materials.

1. Oxidizing Chemicals
   - Segregate from flammable, combustible, pyrophoric, water reactive, and reducing materials.
   - Store large quantities in a dedicated noncombustible steel cabinet.
2. Peroxide-Forming (e.g., diethyl ether, cyclohexene, dioxane, and tetrahydrofuran) and Time-Sensitive Chemicals (e.g., chloroform, formic acid, and gaseous HF)
   - Label peroxide-forming chemicals with the date received, date opened, and expiration date.
   - Time sensitive chemicals should be purchased in inhibited form and must be disposed of by the listed expiration date.
3. Pyrophoric Chemicals
   - Segregate from compressed gases, flammable, combustible, oxidizing, and highly health hazardous materials.
   - Shall be stored below eye level and must be conspicuously identified.
   - Follow manufacture's/supplier's storage instructions to determine if inert gas-filled desiccators, gloves boxes, cold-storage, or other special storage conditions are required.
   - Label pyrophoric chemicals with the date received, date opened, and expiration date by the manufacturer/supplier.
   - NOTE: Pyrophoric materials can be incredibly hazardous if not handled or stored appropriately.
4. Water-Reactive Chemicals
   - Store away from possible water sources and leaks, aqueous solutions, and acids.
   - Shall be stored below eye level and must be conspicuously identified.

Corrosivity

Following **Reactivity**, look at the **Corrosivity** (or corrosiveness) of the material. The corrosive class of compounds includes a wide range of organic and inorganic acids/bases, as well as many compounds which can hydrolyze to form acids (e.g., aluminum chloride), and many organic compounds which corrode living tissue through local toxicity mechanisms (e.g., phenol, iodomethane, dimethyl sulfate).

1. General Rules
    - Shall be stored in secondary containers resistant to corrosion.
    - Shall be stored below eye level.
    - Shall be stored in cool, dry, well-ventilated areas away from sunlight.
    - Some corrosives are also oxidizers or flammable/combustible and must be segregated accordingly.
    - Very weak organic acids may be stored with general organic storage.
    - Store toxic organic corrosives that are not acids or bases per **Toxicity** guidelines below.
2. Acids and bases
    - Store in dedicated cabinets appropriate for the properties and must be conspicuously identified with the word "corrosive" and either "acid" or "base", as appropriate.
        - Do not store hazardous materials in steel cans or drums in the same cupboard as acids.
        - Do not store acids, amines, or ammonia under sinks due to risk of corroding the plumbing.
    - Use secondary containment or separate cabinets to segregate acids from bases, segregate organic from inorganic acids, segregate oxidizing acids from other acids, and segregate organic from inorganic bases.

Storing Flammable Liquids in Refrigerator/Freezer

Flammable liquids must be stored in a refrigerator/freezer that is specifically designed to house these liquids. Flammable and explosion-proof refrigerators/freezers that comply with NFPA 45 and OSHA 29 CFR 1910.307 standards are approved for flammable liquid storage. However, flammable materials may be stored in a nonflammable-approved (e.g., household-style) refrigerator or freezer ONLY under Exception A or Exception B, below:

Exception A

This exception is applicable to reagent kits of small volume such as are commonly found in biological and biomedical-type labs. Often, one or more of the reagents in these kits contains an organic solvent such as ethanol or acetonitrile in a concentration which is often a trade secret. Many of these kits need to be stored cold. This exception also applies to small sepharose columns wetted with a mixture containing ethanol or other flammable solvent.

1. In order to comply with this exception, conditions 2 through 4, shall ALL be met.
2. Flammable solvent(s) present in the reagent shall have a boiling point equal to or higher than methanol (boiling point 64.7 °C, 148.5 °F)
    - Methanol, ethanol, acetonitrile, 1-propanol, and isopropanol are examples of acceptable solvents.
    - In the case of a solvent containing a mixture of chemical species and, therefore, boiling over a range of temperatures, the initial boiling point shall be taken.
3. Individual bottles shall NOT contain more than 15 mL of flammable reagent.
4. Reagent kits shall be stored in secondary containment with air-tight lids.
    - Secondary containment shall be of adequate quality and construction to give reasonable assurance of an air-tight seal.

        - Decent quality food storage containers designed to be air-tight should be generally suitable. Other possibilities include polyethylene screw-top containers with good seal (e.g. Nalgene™ brand).
        - Lids shall be secured by clasps, threaded, or a tight press-fit.
    - Secondary containment with warped lids, cracking, damaged sealing surfaces, or where rubber gaskets or other seals are missing shall NOT be used.

Exception B
This exception applies to cases which do not fall under exception A.

1. In order to comply with this exception, conditions 2 through 4 shall ALL be met.
2. The flash point shall be:
    - At least 120 °F (48.9 °C); OR
    - At least 100°F (38 °C) AND the flammable material is an aqueous solution containing more water than solute.
3. The total quantity of flammable material in the fridge or freezer shall not exceed 1 L (liquid) or 1 kg (solid).
    - If flammable solids and liquids are both present, then the sum of the mass of solid in kilograms and the volume of liquid in liters shall not exceed 1 (one).
4. All vessels containing >1 mL of flammable material shall be stored in an appropriate plastic or metal secondary container with a sealable lid. The secondary container shall be:
    - Durable (not readily breakable); AND
    - Fitted with a secure air-tight lid; AND
    - Not be susceptible to degradation by materials stored in the refrigerator/ freezer.

NOTES
The definitions of flammables and combustible liquids used here were set by the GHS. However, Fire Codes may use the definitions and classifications addressed in Subsections 3.3.33 and Chapter 4 of NFPA 30.

Chemical	**Flashpoint**
Acetone	1°F (-17°C)
Ethanol	55°F (13°C)
20% Ethanol	97°F (36°C)
Isopropanol	53°F (12°C)
Methanol	54°F (12°C)
Ethyl Ether	-49°F (-45°C)
Isopentane	-60°F (-51°C)

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Hydrofluoric (HF) Acid Procedures

The hazards associated with hydrofluoric acid (HF) warrant specialized work practices and safety procedures. Carefully reviewing and following these procedures will help you in preventing incidents and reducing exposures. This information will also provide you with a clear plan of action if an incident involving HF occurs in the laboratory.

- Anyone who works in a laboratory where HF is used must know about the hazards and special emergency response procedures associated with HF. This also includes anyone who does not work directly with HF, but will be working near areas where it is being used.
- Those working directly with HF must be trained in the proper use and disposal of HF.
- Avoid working with HF when working alone. It is important to have someone nearby who knows you are working with HF and knows how to act in case of an emergency.
- Proper personal protective equipment (PPE) must be worn when working with HF. Proper PPE includes:
    - Chemical splash goggles (tightly fitted)
    - Chemical face shield with chin protector.
    - Closed toe and closed-heel shoes.
    - No shorts or skirts.
    - Long-sleeved lab coat.
    - Acid-resistant splash apron (i.e., neoprene). Neoprene gloves.
- Hydrofluoric Acid Emergency Response Procedures must be posted and readily visible in the laboratory. This information along with the SDS should be readily available. Contact EH&S for copies of the HF Emergency Response Procedures.
- First aid neutralizer such as Calcium gluconate gel (e.g., Calgonate) or benzalkonium chloride soaks (e,g,, Zephiran) must be readily available in the lab. Be sure to check the expiration date on first aid neutralizer products before starting any work. Anyone who works in the laboratory where HF is used must know how calcium gluconate and benzalkonium chloride soaks should be used.
- Work with HF should always be done in a chemical fume hood. Make sure the fume hood is operating properly and has a current inspection sticker.
- HF must be stored in chemically compatible, properly labeled containers and separated from alkalis, metals, oxidizers, glass, cyanides, reducing materials, and sulfides. Use only chemically compatible containers when using or storing HF (i.e., polyethylene, Teflon, etc.). Glass, metal, and ceramic containers are not compatible with HF. Secondary containers constructed of polyethylene are advised for earthquake safety and for use during transport.
- Contact EH&S for waste disposal at x2401.
- In the event of a spill:
    - Notify those in the immediate area that a spill has occurred.
    - Evacuate workers from the spill and adjoining areas.
    - Turn off heat sources, if safe to do so.
    - Attend to anyone who may have been exposed to HF.
    - Notify the Laboratory Owner/PI, EH&S (x2401) and Public Safety (x2111) of the spill.
- Medical personnel (Student Health Center, Northridge Medical Center) must evaluate anyone exposed to HF.

Compressed Gas Cylinders

- Compressed gas cylinders must always be properly secured in place using chains and/or cages. Any other method must be approved by EH&S.
- Store cylinders in a designated location (dry, cool, well-ventilated, away from combustible materials and protected from harsh weather.)
- Separate full cylinders from empty cylinders. Ensure that each is labeled with a “Full” or “Empty” tag.

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- Chain or cable must be securely attached to immobile structures (e.g., wall, gas cylinder rack. NOTE: Gas rack must be anchored to wall or bolted to the floor for seismic safety) via appropriate hardware (e.g. eye bolts (or hooks)/unistrut, quick release clamps). Use two chains if the cylinder is greater than 36 inches high.
- Cylinder caps must remain in place when cylinders are being moved or are not in use.
- **Cal/OSHA regulation T8 1740(g) requires that oxygen (or oxidizer) gas cylinders must be separated from fuel-gas cylinders or combustible materials (especially oil or grease) by a minimum distance of 20 feet or by a non-combustible barrier at least five (5) feet high and with a fire resistance rating of at least one-half hour (30 mins).**
- Do not use pure oxygen as a substitute for compressed air.
- Do not store compressed gas cylinders by emergency exit routes.

Liquid Nitrogen

- Liquid Nitrogen is a cryogenic fluid. Cryogenic fluids is a fluid having a boiling point lower than -130 °F (-89.9 °C) at 14.7 pounds per square inch atmosphere (PISA).
- Stationary containers shall be properly secured in place using chains and/or cages. Any other method must be approved by EH&S.
- Stationary and portable containers shall be marked with the name of the gas contained.
- Containers shall be provided with pressure relief devices.
- When dispensing, appropriate PPE shall be worn at all times.
  - Thermally insulated gloves/gauntlets, Face shield, long pants, closed toe/heel shoes.
- Stationary containers should be stored in areas with adequate ventilation to avoid oxygen displacement within a room or space.

X. Laboratory Safety Equipment

Overview

New laboratory personnel must be instructed in the location of fire extinguishers, emergency eyewashes, safety showers, and other safety equipment **before** they begin work in the laboratory. This training is considered just part of the laboratory-specific training that all lab personnel must complete. PI/Lab Owners shall regularly inspect engineering controls and other safeguards, **and report all malfunctions to PPM Work Control at extension x2222**.

Fire Extinguishers

All laboratories working with combustible or flammable chemicals must be outfitted with appropriate fire extinguishers. All extinguishers must be mounted on a wall in an area free of clutter or stored in a fire extinguisher cabinet. Personnel should be familiar with the location, use, and classification of the extinguishers in their laboratory.

Laboratory personnel are not required to extinguish fires that occur in their work areas and should bot attempt to do so unless:

- It is a small fire (ie., small trash can-sized fire)
- Appropriate training has been received.
- It is safe to do so.
- The person wishes to do so and is capable.

Any time a fire occurs, or a fire extinguisher is used, no matter for how brief a period, the PI/Lab Owner (or DSC if PI is not present) must be immediately reported along with EH&S Office and CSUN PPM.

Chemical Fume Hoods

Laboratory workers shall understand and comply with the following:

- Chemical Fume hoods should always be used for operations which might result in release of chemical vapors, dusts, mists, or fumes.
- A hood or other local ventilation devices should be used when working with any volatile substance. A chemical fume hood must be used when working with a substance that has a PEL or TLV below 50 ppm or 100 mg/m^3.
- Laboratory Chemical Fume hoods are checked annually for proper flow rate by EH&S. Ensure the fume hood has an inspection tag indicating the flow rate, an arrow indicating the maximum height opening of the sash, and an inspection date. If a hood does not have a flow rate inspection tag, DO NOT USE THE UNIT. Call EH&S at extension x2401.
- All laboratory chemical fume hoods shall be equipped with a qualitative airflow monitor at a minimum that continuously indicates whether air is flowing into the exhaust system during operation. The monitor shall measure either the exact rate of inward airflow or the relative amount of inward airflow. Acceptable devices that measure the relative amount of inward airflow include: diaphragm pressure gauges, inclined manometers, vane gauges, and an airflow alarm system if the system provides an audible or visual alarm when airflow decreases to less than 80% of the required airflow rate (per Title 8, California Code of Regulations, §5154.1 Ventilation Requirements for Laboratory-Type Hood Operations).
- Do not extend your head inside the hood.
- Do not make any modifications to hoods, duct work, or the exhaust system without first contacting EH&S.
- All laboratory chemical fume hood operations shall be conducted six (6) inches behind the plane of the sash; also known as the effective work surface.
    - If hazardous materials are too close to the opening of the hood, the air turbulence from the lab may push hazardous vapors/fumes towards the user.
- The hood fan should be kept on whenever a chemical is inside the hood, whether or not any work is being done in the hood.
- In the event of power failure or other hood failure, close any open containers and lower the sash. If vapors are expected to be generated inside the hood during the outage, the laboratory should be evacuated and all work cease during the outage.
- Storage inside a hood should be minimal. If large equipment is utilized in a hood, place the equipment on blocks to allow air currents to pass under the equipment and maintain good air flow.
- The apparatus inside the hood should be placed on the floor of the hood at least six inches away from the front edge. Indicator marks on the hood base of side walls may be useful reminders.
- Per ANSI/ASHRAE standard, laboratory fume hoods shall be designed and maintained so as to draw air inward at an average of 100 linear feet per minute (FPM).
    - For procedures involving Federal OSHA recognized carcinogens, laboratory fume hoods shall be designed and maintained to draw air inward at an average of 150 FPM (refer to OSHA 13 Carcinogen list in references).
- Laboratory hoods will be checked annually, or after ventilation modification or maintenance operations, by EH&S and PPM.

Eyewash Fountains and Safety Showers

- Access to eyewash fountains and safety showers shall not be obstructed or restricted by temporary storage of objects or in any other way.
- Emergency Eyewash stations shall be activated monthly to flush the line from any debris and to verify proper operation. These observations will be recorded using the CSUN ArcGIS Database.
- Emergency Safety showers shall be activated monthly to flush the line from any debris and to verify proper operation. These observations will be recorded using the CSUN ArcGIS Database

Respirators

The use of respirators is not a primary means by which laboratory exposures to hazardous substances are controlled. Control should rely on proper technique, ventilation, and confinement of the substance.

However, in some cases respirators may be required to maintain exposures below the PEL.

In such cases, the PI shall provide the proper respiratory protective equipment to laboratory employees, and guidance for students working in research laboratories, in accordance with Title 8, California Code of Regulations, § 5144. Respirators cannot be worn unless one has met the necessary medical criteria and has been fit tested. Please refer to the University's Respiratory Protection Program.

Vapor Detection

Do not use odor as a means of determining if inhalation exposure limits are being exceeded. Whenever there is reason to suspect that a toxic chemical inhalation limit might be exceeded, whether or not a suspicious odor is detected, notify the Laboratory Owner/PI and the EH&S Office (x2401). Once notified, EH&S will determine if engineering controls are available to reduce the exposure and perform exposure monitoring if necessary.

XI. Procedures for Particularly Hazardous Substances

Overview

These special procedures shall be followed when performing laboratory work with any select carcinogen, reproductive toxin, or substance that has a high degree of acute toxicity.

Applicable Definitions

- *Select Carcinogen*: Any substance defined by the National Toxicology Program (NTP), the International Agency for Research on Cancer (IARC), per Title 8, California Code of Regulations, §5191, and any other substance described as such in the applicable SDS. Refer to Reference Occupational Exposure to Hazardous materials in Laboratories for a list of select carcinogen characteristics.
- *Reproductive Toxin*: Any substance described as such in the applicable SDS.
- *Substance with a High Degree of Acute Toxicity*: Any substance for which the LD_{50} data described in the applicable SDS cause the substance to be classified as a highly or acutely toxic chemical.

Laboratory Evaluation

- EH&S and the DSC for the specific college/department will evaluate those laboratories that utilize hazardous chemicals and materials.
- The evaluation will determine:
    - The type of controls needed.
    - Establish the "Designated Area(s)".
    - If employee monitoring is needed.
    - Need for medical surveillance.
    - Special training.
    - Hazard(s) identification(s)
    - PPE recommendations.

Establishment of Designated Areas

A "Designated Area" is defined as a chemical fume hood, glove box, containment cabinet, portion of a laboratory, or an entire laboratory room, assigned as the only area where any activity, including storage, of carcinogens, reproductive toxins, and substances that have a high degree of acute toxicity, shall be conducted.

- Conduct all procedures utilizing chemicals in this category in a Designated Area.
- Designated Areas shall be posted as such, and their boundaries clearly marked.
- Access to the Designated Area shall be restricted to trained laboratory workers aware of the potential hazards associated with the materials and all necessary safety precautions.

Use of Containment Devices/Protective Measures

- Wear appropriate PPE required for the materials used, such as gloves, chemical splash goggles, and lab coats.
- Wear a long sleeved lab coat and gloves known to resist permeation by the chemicals to be used when working in the designated areas.
- All PPE, including lab coats, shall be removed prior to exiting the Designated Area.
- Read the SDS for the chemicals to be used; understand the special precautions to be taken.
- Ventilation apparatus (supporting the use of chemicals in this category) such as laboratory type hoods will be tested regularly, or immediately after ventilation modifications or maintenance operations, by EH&S.

Procedures for Removal of Contaminated Waste

Removal of contaminated waste shall be done in accordance with the CSUN Hazardous Waste Management Program.

Decontamination Procedures

- Decontaminate the surrounding area when work is completed.
- All materials and products shall be decontaminated (or contained) before being removed from the designated area.
- Hands and forearms shall be thoroughly washed prior to leaving the area, and after completion of any procedure in which chemicals in this classification are used.
- Laboratory work surfaces on which a hazardous material is handled shall be protected from contamination.
- Any equipment, material or other item taken into or removed from a Designated Area shall be done so in a manner that does not cause contamination in non-regulated areas or the external environment.
- Should equipment become contaminated or exposed to hazardous materials, contact EH&S for consultation and recommendations.
- Decontamination of jewelry may be difficult or impossible; therefore, it is not recommended that jewelry be worn when working around/with chemicals in this classification.

Laboratory Close-Out

- Refer to Laboratory Close-Out Procedures, (please see Section XVII. Reference & Resources**).**

General Procedures

The following controls and handling techniques should be employed when handling carcinogens, reproductive toxins, and substances that have a high degree of acute toxicity:

- Use the smallest amount of the material that is consistent with the requirements of the work being done.
- Store all materials in this category in locked and enclosed spaces.
- Perform all work that may result in the generation of aerosols in a fume hood, or glove box, within a Designated Area.
- Mechanical pipetting aids shall be used for all pipetting procedures.
- Dry sweeping and dry mopping are prohibited in a Designated Area.
- Use care when weighing solids to avoid creation of aerosols.
- A current chemical inventory shall be maintained.
- Particularly Hazardous Substance containers must be identified as such with a GHS hazard pictogram.

XII. Biological Safety

Risk Groups

Risk Groups are classifications that describe the relative hazard posed by infectious agents or toxins in the laboratory. The risk group to which an infectious agent or toxin is assigned is the primary, but not only, consideration used in a biological risk assessment to determine the appropriate biosafety level in which a worker can handle the infectious agent or toxin. Other considerations used in a biological risk assessment include the ability of an infectious agent or toxin to cause disease, the way in which the infectious agent or toxin causes disease, the activities performed in the laboratory, the safety equipment and design elements present in the laboratory, and the health and training of the laboratory worker. Risk group levels do not always correspond to biosafety levels.

The NIH Guidelines defines the risk groups as:

- Risk Group 1 (RG1): Agents that are not associated with disease in healthy adult humans. This group includes a list of animal viral etiologic agents in common use. These agents represent no or little risk to an individual and no or little risk to the community.
- Risk Group 2 (RG2): Agents that are associated with human disease which is rarely serious and for which preventive or therapeutic interventions are often available. These agents represent a moderate risk to an individual but a low risk to the community.
- Risk Group 3 (RG3): Agents that are associated with serious or lethal human disease for which preventive or therapeutic interventions may be available. These agents represent a high risk to an individual but a low risk to the community.
- Risk Group 4 (RG4): Agents that are likely to cause serious or lethal human disease for which preventive or therapeutic interventions are not usually available. These agents represent a high risk to the individual and a high risk to the community.

Biosafety Levels

A biosafety level is the level of the biocontainment precautions required to work with dangerous biological agents in an enclosed facility.

- Biosafety Level 1 (BSL1): Work with microorganisms not known to cause disease in healthy human adults.
- Biosafety Level 2 (BSL2): Work with microorganisms of moderate potential hazard to human health and the environment.
- Biosafety Level 3 (BSL3): Work with infectious agents which may cause serious or potentially lethal diseases to human health as a result of exposure by inhalation.
- Biosafety Level 4 (BSL4): Work with dangerous and exotic agents that pose a high risk of aerosol-transmitted laboratory infections and diseases that are life threatening to humans.

Standard Microbial Practices

The following are standard microbiological practices that apply to Biosafety Levels 1 and 2. Work with Biosafety Levels 3 and 4 are not currently conducted at CSUN, and future work would need to be evaluated by the Institutional Biosafety Committee (IBC) and EH&S.

1. The laboratory supervisor enforces the institutional policies that control safety in and access to the laboratory.
2. The laboratory supervisor ensures that laboratory personnel receive appropriate training regarding their duties, potential hazards, manipulations of infectious agents, necessary precautions to minimize exposures, and hazard/exposure evaluation procedures (e.g., physical hazards, splashes, aerosolization) and that appropriate records are maintained.

   Personnel receive annual updates and additional training when equipment, procedures, or policies change. All persons entering the facility are advised of the potential hazards, are instructed on the appropriate safeguards, and read and follow instructions on practices and procedures. An institutional policy regarding visitor training, occupational health requirements, and safety communication is considered.
3. Personal health status may affect an individual's susceptibility to infection and ability to receive available immunizations or prophylactic interventions. Therefore, all personnel, and particularly those of reproductive age and/or those having conditions that may predispose them to increased risk for infection (e.g., organ transplant, medical immunosuppressive agents), are provided information regarding immune competence and susceptibility to infectious agents. Individuals having such conditions are encouraged to self-identify to the institution's healthcare provider for appropriate counseling and guidance.
4. A safety manual specific to the facility is prepared or adopted in consultation with the facility director and appropriate safety professionals. The safety manual is available, accessible, and periodically reviewed and updated, as necessary.
   a. The safety manual contains sufficient information to describe the biosafety and containment procedures for the organisms and biological materials in use, appropriate agent-specific decontamination methods, and the work performed.
   b. The safety manual contains or references protocols for emergency situations, including exposures, medical emergencies, facility malfunctions, and other potential emergencies. Training in emergency response procedures is provided to emergency response personnel and other responsible staff according to institutional policies.
5. A sign is posted at the entrance to the laboratory when infectious materials are present. Posted information includes: the laboratory's Biosafety Level, the supervisor's or other responsible personnel's name and telephone number, PPE requirements, general occupational health

requirements (e.g., immunizations, respiratory protection), and required procedures for entering and exiting the laboratory. Agent information is posted in accordance with the institutional policy.

6. Long hair is restrained so that it cannot contact hands, specimens, containers, or equipment.
7. Gloves are worn to protect hands from exposure to hazardous materials.
    a. Glove selection is based on an appropriate risk assessment.
    b. Gloves are not worn outside the laboratory.
    c. Change gloves when contaminated, glove integrity is compromised, or when otherwise necessary.
    d. Do not wash or reuse disposable gloves, and dispose of used gloves with other contaminated laboratory waste.
8. Gloves and other PPE are removed in a manner that minimizes personal contamination and transfer of infectious materials outside of the areas where infectious materials and/or animals are housed or manipulated.
9. Persons wash their hands after working with potentially hazardous materials and before leaving the laboratory.
10. 10. Eating, drinking, smoking, handling contact lenses, applying cosmetics, and storing food for human consumption are not permitted in laboratory areas. Food is stored outside the laboratory area.
11. Mouth pipetting is prohibited. Mechanical pipetting devices are used.
12. Policies for the safe handling of sharps, such as needles, scalpels, pipettes, and broken glassware are developed, implemented, and followed; policies are consistent with applicable state, federal, and local requirements. Whenever practical, laboratory supervisors adopt improved engineering and work practice controls that reduce risk of sharps injuries. Precautions are always taken with sharp items. These include:
    a. Plasticware is substituted for glassware whenever possible.
    b. Use of needles and syringes or other sharp instruments is limited in the laboratory and is restricted to situations where there is no alternative (e.g., parenteral injection, blood collection, or aspiration of fluids from laboratory animals or diaphragm bottles). Active or passive needle-based safety devices are to be used whenever possible.
        i. Uncapping of needles is performed in such a manner to reduce the potential for recoil causing an accidental needlestick.
        ii. Needles are not bent, sheared, broken, recapped, removed from disposable syringes, or otherwise manipulated by hand before disposal.
        iii. If absolutely necessary to remove a needle from a syringe (e.g., to prevent lysing blood cells) or recap a needle Section IV—Laboratory Biosafety Level Criteria 35 (e.g., loading syringes in one room and injecting animals in another), a hands-free device or comparable safety procedure must be used (e.g., a needle remover on a sharps container, the use of forceps to hold the cap when recapping a needle).
        iv. Used, disposable needles and syringes are carefully placed in puncture-resistant containers used for sharps disposal immediately after use. The sharps disposal container is located as close to the point of use as possible.
    c. Non-disposable sharps are placed in a hard-walled container for transport to a processing area for decontamination, preferably by autoclaving. d. Broken glassware is not handled directly. Instead, it is removed using a brush and dustpan, tongs, or forceps.

13. Perform all procedures to minimize the creation of splashes and/or aerosols.
14. Decontaminate work surfaces after completion of work and after any spill or splash of potentially infectious material with appropriate disinfectant. Spills involving infectious materials are contained, decontaminated, and cleaned up by staff who are properly trained and equipped to work with infectious material. A spill procedure is developed and posted within the laboratory.
15. Decontaminate all cultures, stocks, and other potentially infectious materials before disposal using an effective method, consistent with applicable institutional, local, and state requirements. Depending on where the decontamination will be performed, the following methods are used prior to transport:
    a. Materials to be decontaminated outside of the immediate laboratory are placed in a durable, leak-proof container and secured for transport. For infectious materials, the outer surface of the container is disinfected prior to moving materials and the transport container has a universal biohazard label.
    b. Materials to be removed from the facility for decontamination are packed in accordance with applicable local, state, and federal regulations.
16. An effective integrated pest management program is implemented.
17. Animals and plants not associated with the work being performed are not permitted in the laboratory.

These practices are common sense principles that protect laboratory workers, the experiment, and the environment. They include the following:

Basic Principles Biosafety Level 1

Biosafety Level 1 (BSL-1) standard practices, safety equipment, and facility specifications are generally appropriate for undergraduate and secondary educational training and teaching laboratories and for other laboratories that work with defined and characterized strains of viable biological agents not known to consistently cause disease in healthy adult humans. *Bacillus subtilis*, *Naegleria gruberi*, infectious canine hepatitis virus, and exempt organisms under the *NIH Guidelines* are examples of the biological agents meeting these criteria. BSL-1 represents a basic level of containment that relies on standard, microbiological best practices and procedures with no special primary or secondary barriers, other than a door, a sink for handwashing, and non-porous work surfaces that are cleanable and easy to decontaminate.

Basic Principles Biosafety Level 2

Biosafety Level 2 (BSL-2) standard practices, safety equipment, and facility specifications are applicable to laboratories in which work is performed using a broad-spectrum of biological agents and toxins that are associated with causing disease in humans of varying severity. With good practices and procedures, these agents and toxins can generally be handled safely on an open bench, provided the potential for producing splashes and aerosols is low. Hepatitis B virus, human immunodeficiency virus (HIV), *Salmonella*, and *Toxoplasma* are examples of the biological agents that meet these criteria. Work done with any human, animal, or plant-derived specimens (e.g., blood, body fluids, tissues, or primary cell lines), where the presence of a biological agent or toxin may be unknown, can often be safely conducted under conditions typically associated with BSL-2.3–5 Personnel working with human-derived materials should refer to the OSHA Bloodborne Pathogens Standard for specific required precautions.2

The primary routes of exposure to personnel working with these types of biological agents and toxins relate to accidents including exposure via the percutaneous or mucosal routes and ingestion of potentially infectious materials. Extreme caution should be taken with contaminated needles and other

sharp materials. Even though the biological agents and toxins routinely manipulated at BSL-2 are not known to be transmissible by the aerosol route, procedures with aerosol or high splash potential are conducted within primary containment equipment, such as a BSC or safety centrifuge cups.

Furthermore, the use of primary containment equipment is also recommended when high-risk infectious agents are suspected to be present in any human, animal, or plant-derived specimens. Selection of the appropriate personal protective equipment should be based on the risks identified for each respective laboratory.

XIII. Records & Recordkeeping

Records

Proper records shall be prepared and maintained to document all activities required by this Standard. These may include documented training acknowledgements, training material information, Departmental self-inspections/audits, exposure records, etc.

Recordkeeping

Accurate recordkeeping is a critical component of health and safety training. Per OSHA regulations, departments or laboratories are responsible for documenting health and safety training, including safety meetings, one-on-one trainings, classroom and online trainings. Documentation is to maintained by the Department, but may be delegated to the originating PI, Departmental Safety Coordinator and/or Academic Department Office. It is to be made readily available upon request.

In the case of employee exposure or medical records, the records must be maintained by a Health Insurance Portability and Accountability Act (HIPAA) compliant organization, such as Human Resources, a physician, or other professional licensed health care provider (PLHCP) may be appropriate.

XIV. Inspections and Assessments

Inspections – PI and Lab Personnel

The primary goal of safety inspections is to identify existing and potential incident-causing hazards, activities, procedures and faulty operations that can be corrected **before** an incident occurs. Regular laboratory inspections performed by laboratory personnel have been shown to substantially improve laboratory safety conditions, reduce accidents and incidents, and should help to ensure fewer findings when inspections are performed by regulatory personnel or other campus inspectors.

PIs/Laboratory Supervisors are required to self-inspect their laboratories on a routine bases, **at least annually**. While inspections are a snapshot in time and cannot identify every accident causing condition, they do provide important information on the overall operation and processes within their laboratory. Laboratory personnel may use the RSS Laboratory Safety Review self- inspection checklist through RSS Inspect. Inspection documentation for recent inspections and follow-up actions should be shared with the DSC, to be maintained within the lab and readily available.

Inspections – EH&S

As part of this safety program, EH&S conducts various inspections of laboratories and other facilities with hazardous materials to ensure the lab is operating in a safe manner and to ensure compliance with federal, state and university safety requirements.

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The primary goal of inspection is to identify both existing and potential accident-causing hazards, actions, faulty operations, and procedures that can be corrected before an accident happens. Specific inspection compliance categories may include the following:

- Documentation and Training Topics
- Hazard communication (including review of SOPs);
- Campus Emergency Procedures;
- Fire Life Safety;
- General Laboratory Safety;
- Use of personal protective equipment (PPE);
- Housekeeping;
- Chemical storage;
- Chemical Fume hoods;
- Chemical waste disposal and transport;
- Seismic safety, Mechanical and Electrical safety

CHP Inspections

To be conducted by EH&S every two (2) calendar years. RSS Inspect tools will be used during the CHP Inspections to verify and record any findings discovered during the in-person lab walk. Departmental summaries of findings will be made public to PI, Department Chemical Hygiene Officer, and Department Chair.

- Departments to be assessed on years ending in an even number
  - Chemistry and Biochemistry
  - Environmental Occupation and Health
  - Family & Consumer Sciences
  - Geological Sciences
  - Kinesiology
  - Physics and Astronomy
- Departments to be assessed on years ending in odd numbers
  - Biology
  - Civil Engineering & Construction Management
  - Electrical and Computer Engineering
  - Mechanical Engineering
  - Manufacturing Systems Engineering & Management

EH&S Department Assessments

Administered by the EH&S and to be accompanied by DSC every 3 years (depending upon the hazard levels in the department) and include:

- Art
- Biology
- Chemistry & Biochemistry
- Civil Engineering
- Electrical Engineering
- Family & Consumer Sciences
- Geological Sciences
- Mechanical Engineering
- Manufacturing Systems Engineering & Management

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- Physics & Astronomy
- PPM
- Theatre

RSS Assessment Checklist will be used to verify and record any findings. Focus of the assessment is on compliance with applicable safety and environmental regulations as well as best management practices.

Department Self Inspections

Departmental self-inspection program conducted in higher activity departments and shall be conducted annually.

- Art
- Biology
- Chemistry & Biochemistry
- Civil Engineering
- Electrical Engineering
- Geological Sciences
- Manufacturing Systems Engineering & Management
- Mechanical Engineering
- Physics & Astronomy

These self-inspections shall include all laboratory/studio/shop areas. Inspection documentation (including follow-up action items) will be reviewed as part of the EH&S Safety Assessments addressed above.

- May be conducted by Peer Safety Committees, DSC, or Department Chair.

XV. Training Program

Goal

To ensure that all individuals potentially at risk are adequately informed about the work and hazards within the laboratory/chemical handling area, and what to do if an accident occurs. Every worker shall know the location and proper use of personal protective equipment (PPE) and basic emergency response procedures.

Regulatory Requirements

The necessary work practices, procedures, and policies outlined in this chapter are required by the following:

- *8 CCR §3380*, "Personal Protection Devices"
- *8 CCR §5191*, "Occupational Exposures to Hazardous Chemicals in Laboratories"
- *8 CCR §5194*, "Hazard Communication"
- *8 CCR §5209*, "Carcinogens"
- *19 CCR §2659*, "Training

Types of Training

All laboratory personnel must complete CSU General Laboratory Safety Fundamentals training course before beginning work in a laboratory. This may be completed via CSU Learn (CSU Online Learning Management System) or in- person through an Instructor Lead Training. Additionally, before being granted unescorted access to a laboratory, personnel must complete and document site- specific safety orientation and training which is to be conducted by the PI/Lab Owner.

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Recommendation on topics to be discussed during site-specific safety orientation and training can be found in the Site-Specific Safety Orientation & Training Checklist for Laboratory Personnel (Section XVII. Reference & Resources**).** Note, equivalent existing checklists and documentation are also acceptable.

Additional training may be needed when:

1. New hazards are introduced into the workplace.
2. New work activities/processes are to be implemented.
3. New equipment is introduced into the workplace.

Questions regarding laboratory safety training can be directed to ehs@csun.edu.

- Laboratory Workers: Laboratory workers are expected to follow all laboratory safety rules. Lab Workers may include:
  - Students (undergraduate/graduate/volunteers)
  - Visiting faculty from within the university
  - Visiting faculty collaborators from outside the university
    - A memorandum of understanding (MOU) will need to be filed with the University prior to working/participating in lab activities or trainings
  - Laboratory Technicians and Assistants
  - Graduate Assistants
  - Teacher Assistants
  - Any other paid University employee

CSU General Laboratory Safety Fundamentals Training

The CSU General Laboratory Safety Fundamentals training includes:

- Review of laboratory rules and regulations, including the Chemical Hygiene Program and the "Laboratory Standard"
- Recognition of laboratory hazards
- Use of engineering controls, administrative controls, and PPE to mitigate hazards.
- Exposure limits for hazardous chemicals
- Signs and symptoms associated with exposures to hazardous chemicals.
- Chemical exposure monitoring
- Review of reference materials (e.g., SDS) on hazards, handling, storage, and disposal of hazardous chemicals
- Procedures for disposing of hazardous chemical waste.
- Fire safety and emergency procedures
- Information required by *8 CCR §3204* regarding access to employee exposure and medical records

Laboratory Specific Safety Orientation & Training

PIs/Laboratory Supervisors must also provide site-specific safety orientation and training before allowing unescorted access to the laboratory. The use of an existing equivalent checklist documenting training of these topics is also accepted. Topics that require specific training include:

- Location and use of the Laboratory Safety Manual, Chemical Hygiene Plan, SDS(s) and other regulatory information (e.g., "Laboratory Standard" *8 CCR §5191*)

- Review of departmental Emergency Action Plan, including location of emergency equipment and exit routes
- Specialized equipment, including Engineering Controls
- Administrative Controls, including Standard Operating Procedures
- Personal Protective Equipment
- Chemical Spill Response
- Specialized procedures and protocols
- Particularly Hazardous Substances including physical and health hazards, potential exposure, medical surveillance, and emergency procedures
- Methods and observations to detect chemical releases
- Any applicable Laboratory Safety Plans

The following provides an outline of the expected general laboratory safety training and frequency intervals:

A. **Initial**:
   i. CSU General Laboratory Safety Fundamentals
   ii. Site-Specific Safety Orientation and Training (includes, Bloodborne Pathogen, Injury Illness Prevention Plan, Emergency Action Plan, CHP, SOPs, Laboratory Safety Plan, etc.)
   iii. LHAT – PPE Training
   iv. Fume hood operation or biosafety cabinet operation (if necessary)
   v. Lab-specific Chemical Spill Response & Procedures
   vi. Cryogen Safety (if necessary)

B. **Annual**:
   i. General Laboratory Safety refresher
   ii. BBP, IIPP, EAP, CHP updates, Laboratory Safety Plan if applicable
   iii. Lab-specific Chemical Spill Response & Procedures
   iv. Lab-specific safety topics (e.g., laser, radiation)

EH&S provides additional assistance in planning laboratory-specific training upon request.

Training Responsibilities

- EH&S: The Environmental Health and Safety Office is responsible for providing training support to colleges/departments.
- DSC: May be designated to coordinate and/or conduct Chemical Hygiene Plan/General Laboratory Safety Training for Laboratory Personnel.
- Laboratory Owners/PIs: The Lab Owner/PI is responsible for providing all laboratory personnel with information and lab specific training regarding the hazards of specific procedures and substances involved in their lab(s)/room(s), and ensuring that documented CHP Training has been provided to each individual under their direction. Topics that may require specific training include:
  - Location and use of the Chemical Hygiene Plan, Injury Illness Prevention Plan (IIPP), SDSs, and other regulatory information
  - Review of Campus Emergency Management Plan, including location of emergency equipment and room/building exit routes

- Use of engineering controls, administrative controls and personal protective equipment to mitigate hazard
- Specialized equipment
- Standard Operating Procedures (SOPs)
- Review of reference materials (e.g., SDS) on hazards, handling, storage and disposal of hazardous materials and chemicals
- Specialized procedures and protocol
- Particularly Hazardous Substances including physical and health hazards, potential exposure, medical surveillance, and emergency procedures
- Many of these topics are covered in the site-specific orientation checklist. It is CSUN CHP policy that each person working in a laboratory or technical area receives annual refreshers on general and laboratory-specific hazard trainings.
- Lab-directed training is required on a regular basis to promote a strong safety culture.

XVI. Medical Exams/Consultation

Exams

Under the OSHA Laboratory Standard, employees are provided with the opportunity to receive medical attention, including follow-up examinations under the following conditions:

- Where exposure monitoring reveals an exposure level routinely above the action level, or PEL in the absence of an action level, for an OSHA regulated substance for which there are exposure monitoring and medical surveillance requirements.
- Whenever an employee develops signs or symptoms associated with possible exposure to a hazardous chemical handled in the lab.
- After a major chemical release, accident, or incident which may have resulted in an employee being exposed to a chemical.

Consultations

If a medical consultation is needed, it shall be conducted by a licensed physician and the following information should be provided at the time of the evaluation:

- The identification of the hazardous chemical (i.e., SDS, fact sheet, etc.).
- A description of the conditions in the laboratory at the time of the incident.
- A description of any signs/symptoms that the person is experiencing.

XVII. Reference & Resources

- American Chemical Society, Creating Safety Cultures in Academic Institutions (2012)
- American Chemical Society, Guidelines for Chemical Laboratory Safety in Academic Institutions (2016)
- American Chemical Society, Safety in Academic Chemistry Laboratories, 8th edition (2017)
- National Research Council, Prudent Practices in the Laboratory: Handling and Management of Hazardous Chemicals Revised edition (2011)

State/Federal Resources

- *8 CCR §3203*, "*Injury and Illness Prevention Program*"
- *8 CCR §3380*, "*Personal Protective Devices*"
- *8 CCR §5143*, "*General Requirements of Mechanical Ventilation Systems*"
- *8 CCR §5154.1*, "*Ventilation Requirements for Laboratory-Type Hood Operations*"

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- *8 CCR §5164*, "*Storage of Hazardous Substances*"
- *8 CCR §5191*, "*Occupational Exposures to Hazardous Chemicals in Laboratories*"
- *8 CCR §5194*, "*Hazard Communication*"
- CSUN Respiratory Protection Program
- CDC, Biosafety in Microbiological and Biomedical Laboratories 6th Edition

Carcinogens

- *8 CCR Article 110, "Regulated Carcinogens"*
- International Agency for Research on Cancer
- Occupational Exposure to Hazardous materials in Laboratories, Appendix A – National Research Council

Other applicable regulations include those promulgated by the U.S. Department of Labor including *29 CFR 1910.1450 Occupational Exposure to Hazardous Chemicals in Laboratories* (the "Laboratory Standard"). These regulations require that the CHP be readily available wherever potentially hazardous chemicals are used, handled, or stored. Also applicable is the *General Duty Clause* of the Occupational Safety and Health Act which states:

> "*Each employer:*
>
> 1. *Shall furnish to each of his employees employment and a place which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employee.*
> 2. *Shall comply with occupational safety and health standards promulgated under this Act.*
>
> *Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct."*

EH&S will review and evaluate the effectiveness of the CHP at least annually and update it as necessary. Any significant updates to the CHP will be reviewed and approved by the campus CHO, Director of Environmental Health & the Safety Research and Instructional Space Committee (RISC).

Forms

- Chemical Hygiene Program Training Form
- Hazardous Waste Labeling Diagram
- Hazardous Waste Label
- Laboratory Accident/Incident Process Flow Chart
- Laboratory Accident/Incident Report Form
- Campus Responsibilities in Emergency Management and Preparedness
- Working Solo/Unsupervised Authorization Form
- Global Harmonized System (GHS) – Hazard Communication Pictograms
- Site-Specific Safety Orientation and Training for Lab Personnel
- CSU, Office of the Chancellor - Critical Incident Notification Protocol

CSUN | CALIFORNIA STATE UNIVERSITY NORTHRIDGE

CHEMICAL HYGIENE PLAN TRAINING FORM

Lab Personnel Name _____ **Employee / Student ID** _____

Lab Location _____ **Department** _____

Lab Phone _____

Cal/OSHA (Title 8 CCR Sec. 5191) requires that all laboratories have a written Chemical Hygiene Plan (CHP) as a fundamental chemical safety plan for the laboratory. All laboratory personnel who work with chemicals must comply with the guidance outlined in the CHP.

The Laboratory Standard (29 CFR 1910.1450) and/or The Hazard Communication Standard (29 CFR 1910.1200) and/or EPA Regulation 40 CFR 265 further requires the following training: General Laboratory Safety; Laboratory Specific Safety; and Hazardous Waste (as applicable), as well as PPE Awareness Training. **This training must be provided at the time of the employee's/students initial assignment, an annual refresher, and upon updating procedures.**

By your signature below, you acknowledge that you have read and understood the contents of this plan and know its location within the laboratory.

_____ _____

Laboratory Personnel/Student Signature **Date**

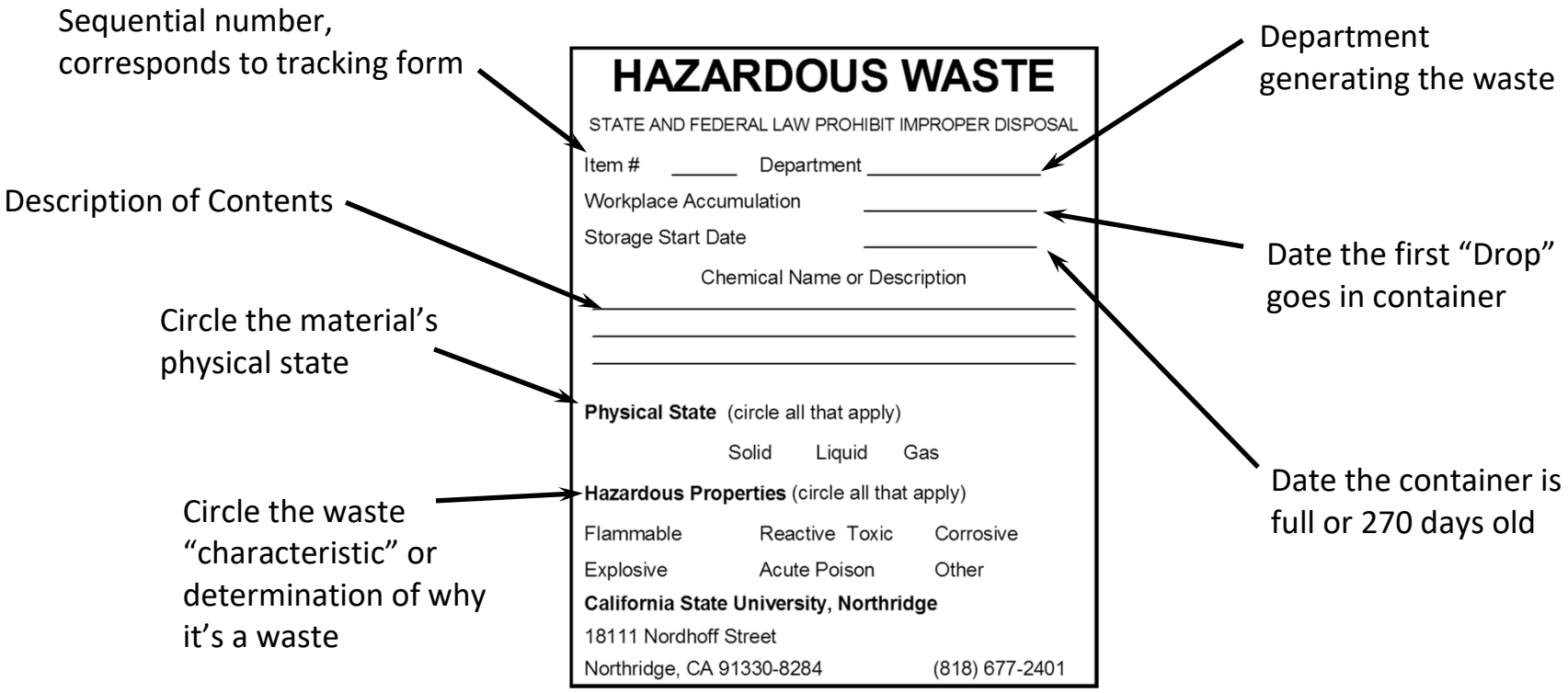
_____ _____

Lab Owner/Principal Investigator (PI) Signature **Date**

CSUN® CALIFORNIA STATE UNIVERSITY NORTHRIDGE

Description of Training:	Lab Personnel initial & annual refresher training: (Please sign and date)	Lab Owner/P.I. confirmation of training (Please sign and date)	Lab Owner/P.I. confirmation of lab condition/procedure change (Please sign and date)
General Laboratory Safety			
Year 1			
Year 2			
Year 3			
PPE Awareness			
Year 1			
Year 2			
Year 3			
Hazardous Waste Handling & Disposal			
Year 1			
Year 2			
Year 3			
Specific Laboratory Safety			
Year 1			
Year 2			
Year 3			

Hazardous Waste Labeling Diagram



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HAZARDOUS WASTE

STATE AND FEDERAL LAW PROHIBIT IMPROPER DISPOSAL

Item # ______ Department ________________

Workplace Accumulation ________________

Storage Start Date ________________

Chemical Name or Description

____

____

____

____

Physical State (check all that apply)

☐ Solid ☐ Liquid ☐ Gas

Hazardous Properties (check all that apply)

○ Flammable ○ Reactive ○ Corrosive

○ Explosive ○ Toxic ○ Acute Poison

California State University, Northridge
18111 Nordhoff Street
Northridge, CA 91330-8284 (818) 677-2401

HAZARDOUS WASTE

STATE AND FEDERAL LAW PROHIBIT IMPROPER DISPOSAL

Item # ______ Department ________________

Workplace Accumulation ________________

Storage Start Date ________________

Chemical Name or Description

____

____

____

____

Physical State (check all that apply)

☐ Solid ☐ Liquid ☐ Gas

Hazardous Properties (check all that apply)

○ Flammable ○ Reactive ○ Corrosive

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Item # ______ Department ________________

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Storage Start Date ________________

Chemical Name or Description

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Physical State (check all that apply)

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Hazardous Properties (check all that apply)

○ Flammable ○ Reactive ○ Corrosive

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Chemical Name or Description

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Physical State (check all that apply)

☐ Solid ☐ Liquid ☐ Gas

Hazardous Properties (check all that apply)

○ Flammable ○ Reactive ○ Corrosive

○ Explosive ○ Toxic ○ Acute Poison

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HAZARDOUS WASTE

STATE AND FEDERAL LAW PROHIBIT IMPROPER DISPOSAL

Item # ______ Department ________________

Workplace Accumulation ________________

Storage Start Date ________________

Chemical Name or Description

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____

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____

Physical State (check all that apply)

☐ Solid ☐ Liquid ☐ Gas

Hazardous Properties (check all that apply)

○ Flammable ○ Reactive ○ Corrosive

○ Explosive ○ Toxic ○ Acute Poison

California State University, Northridge
18111 Nordhoff Street
Northridge, CA 91330-8284 (818) 677-2401

CSUN ENVIRONMENTAL HEALTH AND SAFETY

EH&S (818) 677-2401 ehs@csun.edu | CSUN Emergency: 911
Non-emergency (818) 677-2111

Laboratory Accident/Incident Reporting Process

Laboratory Related Accident or Incident
Immediately do the following:

Emergencies: Call 911 (any device)
Contact EH&S at (818) 677-2401

Student/Lab Personnel Responsibilities

Report all close calls, near misses, and incidents resulting in injury or illness that takes place in the laboratory to your PI or Lab Instructor - **immediately.**

For First Aid Treatment
During Normal Business Hours: Go directly to Klotz Student Health Center.
After Normal Hours: Go directly to local urgent care, primary health care provider, or emergency room.

For Emergency Treatment Beyond First Aid
If physically capable and conscious go directly to local Urgent Care or Emergency Room. If not physically mobile or unconscious, a lab mate shall directly contact 911.

Follow up care / Appointments as needed

Principal Investigator/Lab Instructor Responsibilities

First Aid Treatment Steps
During Normal Business Hours: Instruct student or Lab personnel to go directly to Klotz Student Health Center.
After Normal Business Hours: Instruct student or lab personnel to go to local Urgent Care or Emergency Department.

Emergency Treatment Beyond First Aid
If student is not physically mobile or unconscious, PI or Lab Instructor shall dial 911 for emergency medical attention.

Complete the **Laboratory Accident/Incident Report Form** and submit completed form to EH&S office and your Department Chair.
Within 24 hours

EH&S office will contact lab personnel for further instruction

Dignity Health Northridge Hospital
Medical Center
18300 Roscoe Blvd,
Northridge, CA 91325
(855) 930-5493 OPEN 24 Hours
After Hours: Urgent and Emergency Care

Klotz Student Health Center
18111 Nordhoff Street
Northridge, CA 91330
(818) 677-3666
Hours: 9AM to 5PM Mon-Fri

Olive View-UCLA Medical Center
14445 Olive View Drive #2B101
Sylmar, CA 91342
(818) 364-1555
Open 24 Hours
After Hours: Urgent Care and Emergency care

California State University Northridge

Office of Environmental Health & Safety

Laboratory Accident/Incident Report

RETURN TO ENVIRONMENTAL HEALTH, SAFETY AT MAIL DROP 8284

The following information should be submitted by the Laboratory Instructor, Laboratory Supervisor or other university employee having knowledge of an incident whenever a student, or campus visitor is injured on university property or during a university sponsored activity. All close calls, near misses and incidents resulting in injury or illness shall be reported using this form. Please report all serious injuries within 24 hours. If more space is needed, please provide additional pages. Contact EH&S for questions: (818) 677-2401.

(Not for Employee Injuries. This is a confidential, internal report.)

NAME OF INJURED PARTY: *(Last, First, MI):* _____ Date of Injury: _____

CSUN ID #: _____ Phone: _____ Email: _____

DESCRIPTION OF INCIDENT: *(Why did it happen?)* _____

_____

INCIDENT ANALYSIS: *(What was the cause?)* _____

_____

LOCATION OF INCIDENT: *(Be specific)* CSUN Campus Map Link

_____

CAMPUS POLICE RESPONDED? ☐ *Yes* ☐ *No*

INJURED TREATED AT OR BY: ☐ Given First Aid ☐ Student Health Center Hospital/Doctor ☐ Ambulance ☐ none

UNIVERSITY PERSON REPORTING:

Name: _____ Department: _____ Phone: _____

WITNESSES:

Name *(Last, First, MI)* : _____ Work Phone: _____ Home Phone: _____

FOLLOW UP:

Corrective Action Taken or Recommended: *(List on separate page if necessary)*

_____

_____

_____

Preparer of Accident Report: _____

Signature: _____ **Date:** _____

Emergency Desk Reference for Faculty, Staff, and Students

FACULTY responsibilities in emergency management and preparedness include:

Faculty responsibilities in providing a safe learning environment for students in their classrooms include:

Inform students at the first class meeting and throughout the semester of the appropriate safety information relevant to any hazards encountered in their classroom, and the following information:

- The location of the closest fire extinguishers to the classroom.
- A primary and secondary exit route from the classroom that could be used during an evacuation.
- The location and content of the building evacuation maps, including the designated emergency assembly point for the class. Building evacuation maps are located near the elevators.
- Dial **911** on all campus phones or cell phones, or **TEXT** your emergency and location to 9-1-1 to reach CSUN Police.
  Outside on campus, use Blue Light emergency phones to report an emergency.
- Inform students about campus emergency procedures. These include how to respond to a medical emergency, fire/explosion, hazardous materials spill, bomb threat, earthquake, evacuation, etc.
- Advise students to ensure emergency contact information is up to date in web portal for campus mass communications system.

STAFF responsibilities in emergency management and preparedness include:

- Be familiar with your College/Department or unit's **Emergency Action Plan**.
- Identify your Building Marshals and participate in any building evacuation drills.
- Be familiar with your building's floor plan. Identify primary and secondary exit routes from your worksite. Know where fire extinguishers and first aid kits are located.
- Know the location and content of the building evacuation maps including the designated emergency assembly area for your worksite. Building evacuation maps are located near the elevators.
- Know about campus emergency procedures such as how to respond to a medical emergency, fire/explosion, hazardous materials spill, bomb threat, earthquake, evacuation, etc.
- Be informed about appropriate safety information relevant to any hazards encountered in your work place.
- Ensure your emergency contact information is up to date in the web portal for the campus mass communications system.

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STUDENT responsibilities in emergency management and preparedness include:

Student responsibilities in emergency management and preparedness include:

- Ensure your Emergency Contact information is up to date in the web portal for the campus mass communications system.
- Follow instructions from faculty, staff, and emergency personnel during emergency situations.
- Take drills seriously and encourage others to do the same.
- Familiarize yourself with building evacuation maps and emergency assembly points for the buildings in which you spend the most time. Identify at least two exit routes from each classroom you spend time in.
- DO NOT USE ELEVATORS during an emergency! **USE STAIRS!**
- Learn what to do in an emergency beforehand-understand different procedures such as evacuation and shelter in place that may be ordered depending on the emergency situation.
- Stay informed about any special hazards or vulnerabilities that may exist in your classrooms and labs.

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FIRE AND/OR EXPLOSION

If you discover fire or see smoke:

Call CSUN Police at **911** from a campus phone or cell phone or **TEXT** your emergency and location to 9-1-1 to reach CSUN Police, or use a Blue Light emergency phone, identify yourself and report the following:

- Building name and address.
- Room/specific location of the fire.
- Smoke or flame.
- Smoke odor

For minor fires such as smoke in a waste basket, locate the fire extinguisher.

Fire extinguisher instructions:

- **P** - PULL safety pin from handle
- **A** - AIM nozzle at the base of the fire
- **S** - SQUEEZE the trigger handle
- **S** - SWEEP from side to side - watch for re-flash.

For large fires, evacuate the building and pull a fire alarm. If there is heavy smoke, stay low to the ground as you evacuate. Check doors for heat before opening them.

If you become trapped inside a building during a fire:

- Call CSUN Police **911** from campus phone or cell phone or **TEXT** your emergency and location to 9-1-1 to reach CSUN Police.
- Tell them your location and that you need Fire Department assistance to get out.
- Stay near a window and close to the floor.
- If possible, signal for help.

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HAZARDOUS MATERIAL SPILL

In case of hazardous material spill or exposure to infectious material, remain calm and proceed as follows:

Chemical and Solvent Spills:

If spill involves personal injury:

- remove clothing;
- flush with warm tap water for 15 minutes;
- call **911** from a campus phone or cell phone or **TEXT** your emergency and location to 9-1-1 to reach CSUN Police

If immediate hazard exists or medical assistance is required:

- Call **911** from a campus phone or cell phone or **TEXT** your emergency and location to 9-1-1 to reach CSUN Police.
- **Immediately evacuate and limit access to the affected area.**
- All evacuations should be upwind from the release location.

For small spills/those not involving immediate danger to lives or property:

- Confine the spill.
- Evacuate and secure the immediate area; limit access to authorized personnel.

Contact Environmental Health & Safety (EHS) at campus extension 2401 or 818-677-2401 from cell phone.

- Identify yourself and report the information.
- Be as specific as possible about the type, amount of the spill/material released.
- Provide the location of the spill.

Unless immediate medical attention is needed, all persons who have been potentially exposed should report to emergency personnel at the Incident Command Post site (look for police vehicle with a **green flag)** and notify the Incident Commander that they have been exposed.

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MEDICAL EMERGENCY

Injury and illness are the most common of all campus-related emergencies.

If there is a serious injury or illness occurs, remain calm and proceed as follows:

Call CSUN Police at **911**from a campus phone or cell phone or **TEXT** your emergency and location to 9-1-1 to reach CSUN Police.

- Give your name.
- Describe the nature and severity of the medical problem.
- Give the campus location of the victim.
- Provide an estimated age and gender of the victim.
- Describe whether or not the victim is conscious and breathing.
- Look for an emergency medical ID and give all information to the Police.
- Administer first aid to the extent possible based on your level of training.

Note: All CSUN Police Officers are trained in basic first aid, CPR and AED. During normal working hours (8-5) Monday through Friday,
a nurse and/or a doctor from the Klotz Student Health Center will also be summoned.

- In case of minor injury or illness, an injured person may go to the Klotz Student Health Center.
- If in doubt, contact University Police!
- All injuries must be reported to a faculty or staff supervisor.

Note: A Supervisor's Accident Investigation Report (EH&S Form 620) must be completed and EH&S must be called at x2401 within 8 hours for all employee injuries.

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Working Solo/Unsupervised Authorization Form

SECTION I: ACKNOWLEDGEMENTS

By completing this form, the requestor acknowledges the following:

- I understand that I am not obligated to work solo or unsupervised and that it is discouraged if it can be avoided.
- If working unsupervised is necessary, then working solo should be avoided by implementing a “buddy system”.
- I understand that risk levels are higher when working alone on hazardous activities where limited assistance exists in the case of an emergency.
- I will not work alone without having first reviewed safety procedures and emergency protocols with the authorizer of this form.
- I will always adhere to standard operating procedures.
- I understand that the working solo/unsupervised policy requires periodic check-ins either physically or remotely by the Authorizing Individual or their designee while conducting activities, and I will adhere to the communication conditions described in Section III of this form.
    - I understand that although low-risk activities do not require a second person to be enlisted for check-ins, this form is still required for all solo and/or unsupervised work.
- I have been informed of my shop/laboratory’s specific safety and working solo/unsupervised policies and will abide by these.
- I will always adhere to the following general standard operating procedures, in particular while working alone:
    - All required PPE and appropriate attire will be worn, (e.g., safety glasses, long pants, closed-toe shoes, gloves (when appropriate), etc.)
    - All efforts will be made to minimize exposure to hazardous materials, including minimizing quantities handled, and avoiding particularly hazardous chemicals (e.g., highly toxic, corrosive, reactive, pyrophoric, and/or explosive materials) whenever possible.
    - All efforts will be made to avoid working with shop or laboratory equipment that presents sizable risks for entanglement, amputation, electrocution, or other serious bodily harm.
    - All efforts will be made to utilize the hierarchy of hazard controls (i.e., conducting work in a fume hood, using shields when needed, avoiding high-risk hazards such as working in confined spaces, etc.)

Working Solo/Unsupervised Authorization Form

Requestor must read Section I on the previous page, complete Section II below and sign at the bottom of the form. Approver must complete Section III and sign at the bottom of the form.

Completed forms must be shared with Department Safety Coordinator and retained for 3 years.

SECTION II: REQUESTOR

Name: _____ ID#: _____

Phone: _____ Email: _____

Position: ☐Undergraduate ☐Graduate ☐Employee ☐Volunteer ☐Other: _____

Emergency Contact: _____ Phone: _____

Shop/Lab Name: _____ Location: _____

Shop Coordinator / Lab Owner: _____ Phone: _____

SECTION III: AUTHORIZER

Authorizing Individual: _____ Title: _____

Phone: _____ Email: _____

DATE PERMISSION EXPIRES: _____

Description of Authorized Processes & Limitations:

Description of access permissions to areas/rooms:

Communication Conditions: ☐ Physical check-in Check-in performed by: _____

☐ Remote check-in Received by: _____

☐ Not required (low risk work)

Communication procedures (include names of those checking in or receiving communications):

Authorizer Signature: _____ Date: _____

Requestor Signature: _____ Date: _____

Laboratory Close-Out Procedures

Proper transfer or disposal of hazardous materials is required whenever a Principal Investigator leaves the University or transfers to a different laboratory.

Plan the transfer or disposal of hazardous materials carefully. Hazardous materials such as chemicals, microorganisms, tissues, and radioactive materials can injure faculty, students, staff, contractors, and visitors if handled inappropriately.

The primary responsibility for the proper management of all hazardous materials used in a laboratory lies with the principal investigator or researcher. If the principal investigator is not the responsible individual for purposes of these procedures, then the academic department will be held responsible. The EH&S Office provides guidance and disposal services for the principal investigator and department.

- Contact EH&S at least one month (or as soon as possible) prior to close- out at ehs@csun.edu. Print a Laboratory Close-out Checklist and request a preliminary inspection or consultation for lab close- out guidance and to prepare for disposal of chemical wastes.

    - Clean up any chemical residue; collect broken glass, sharps, and other waste as instructed.

    - Characterize or label "unknowns" according to standard procedures or knowledge of the substances. EH&S can provide guidance upon request.

    - Dispose of chemicals using the standard chemical disposal schedule and procedures. A final laboratory clean-out pickup may be requested from EH&S byfollowing the instructions on the Schedule a HazardousWastePickuppage on the EH&Swebsite (www.csun.edu/ehs).

    - Request EH&S to perform a clearance inspection of the laboratory after all chemicals, chemical residue, sharps, and other hazards have been removed.
      Note: This must be done prior to custodial cleaning or any remodeling/maintenance activities.

If EH&S is not notified in a timely manner and the close-out requires additional services of an outside contractor, the responsible department will be expected to cover any additional labor cost.

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Laboratory Close-Out Procedures
(continued)

Please consult the CSUN *Hazardous Waste Management Program*, *Chemical Hygiene Plan*, and *Radiation Safety Manual* for guidance on procedures regarding the transportation and storage of potentially hazardous materials.. Use the following checklist to ensure that you have completed all the procedures and have obtained the appropriate close-out signatures.

Checklist

Departing Student Researchers

- Dispose of all waste bottles to EHS for disposal prior to departure.
- Dispose of all samples or identify, label, and transfer ownership.
- Turn in their unused chemicals to EHS, or
- Transfer the responsibility for the chemicals back to the principal investigator or to a fellow researcher within the lab and identify substances by chemical name in case of a need for future disposal.

Chemicals

- Remove all chemicals from refrigerators, freezers, fume hoods, bench tops, shelves and storage cabinets.
- Label all chemical containers with the proper chemical name. Abbreviations, chemical formulas or structures are not acceptable. Close all containers securely. Seal containers with Parafilm as necessary to minimize vapors and odors.
- Determine which chemicals are usable and within their expiration date. It is acceptable to transfer responsibility for these chemicals to another research group that can use them in a timely manner. (Chemicals may not be transferred off-site.) **Note:** Chemicals and containers must be clean, labeled, and the bottles and caps must be in good condition to transfer responsibility. If a new user cannot be found, the chemicals must be managed as chemical waste according to applicable procedures found in the *Hazardous Waste Management Program*.
- If chemicals are to be transferred to new user, obtain that person's signature on the Laboratory Close-Out Checklist.
- Empty all beakers, flasks, evaporation dishes, etc. If a vessel cannot be emptied or cleaned enough for disposal in the ordinary trash then it must be managed as chemical waste according to the applicable procedures,
- Prepare chemical wastes in accordance with the *Hazardous Waste Management Program*. Complete chemical waste removal before vacating the laboratory. Allow two weeks for waste collection to occur after notifying EH&S that the waste is properly prepared for pickup.

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Laboratory Close-Out Procedures
(continued)

Shared Storage Areas

- Shared facilities include: storage units such as stock rooms, walk-in refrigerators, constant temperature rooms, shared refrigerators, freezers, flammable liquids cabinets, waste collection areas, etc. They are of special concern if more than one person manages the area.
- A departing researcher must carefully inspect any shared facility in order to locate and appropriately dispose of the hazardous materials for which that researcher is responsible.

General Laboratory Cleaning

- Wash off fume hood surfaces and clean counter tops.
- Notify your Department Safety Coordinator when laboratory clean-up is complete. The Department Safety Coordinator will contact EHS at (818) 677-2401 or email at ehs@csun.edu to arrange a close-out inspection.

Controlled Substances

- The US Drug Enforcement Agency (DEA) issues-controlled substance registrations to individual researchers. EH&S and Research Sponsored Programs maintains a record of DEA registrations used for research. Please send a notification to ehs@csun.edu that your registration will be terminated.
- Abandonment of a controlled substance is a violation of the DEA permit under which it was held.
- Controlled substances may be disposed of through EH&S utilizing a DEA authorized on- site disposal method. EHS will complete the required DEA notification and recordkeeping. Call EH&S at (818) 677-2401 for more information.
- Permission to transfer a registration for a controlled substance to another individual must be approved and documented by the DEA.
- If controlled substances are found and the registration is unknown, contact EH&S.

Gas Cylinders

- Remove gas connections, replace cylinder caps, and return cylinders to suppliers.
- All cylinders must have the manufacturer's original label or a legible hand-written identification securely fastened to the cylinder.
- If a cylinder is empty or non-functional this must be marked or indicated on the cylinder.
- If cylinders are non-returnable, please contact EH&S.

Animal and Human Tissues

- Animal specimens, organs, and tissues in preservative are disposed of by Veolia North America. Contact EH&S at (818) 677-2401 for more information.

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- Frozen specimens must be placed in dedicated freezers and are to be picked up by a predetermined third-party vendor for disposal.
- Identify/document an appropriate responsible individual for retained samples. If appropriate tissue disposal is uncertain, contact EH&S for more information (818) 677-2401.

Microorganisms and Cultures

- If the material cannot be decontaminated, contact EH&S for more information (818) 677-2401.
- Identify/document an appropriate responsible individual for retained samples. Mixed Hazards
- Occasionally it is necessary to dispose of materials that may contain more than one hazard. Contact EHS at (818) 677-2401 for information on the disposal of any combination of chemically contaminated, biohazardous materials, and/or radioactive materials.

Sharps

- Biohazardous sharps: Place in a red sharps container with a biohazard symbol/ sticker. These sharps include: all needles and syringes; broken or unbroken glass and plastic ware that has contacted infectious agents, untreated human tissues and fluids, rDNA, or that was used in patient care or treatment, including plastic pipettes and other used plasticware, or items made of plastic that shatters on breakage or is considered breakable by the investigator.
- Chemically contaminated sharps: Place sharps into a plain (non-red) puncture resistant container or plain (non-red) sharps container and label "Non-Hazardous Waste." Discard into the city municipal city trash bin.
- If uncertain, contact EHS at (818) 677-2401. Radioactive Materials
- Contact the EH&S Office at (818) 677-2401 to relocate any radioactive materials to another laboratory, to remove these materials from the University or the radioactive material inventory, for decontamination of the work area, and to conduct a final survey of the vacated area.

Equipment

- Clean and disinfect equipment (including refrigerators, freezers, ultra-low temp freezers, etc.) before departing, especially equipment in which biohazardous materials were used or stored. Alert EH&S (818) 677-2401 and Physical Plant Management (818) 677-2222 of exhaust or filtration equipment used with extremely hazardous substances or organisms.
- If moving biological safety cabinets, decontaminate before moving and re-certify the unit using a third-party vendor before use in the new location.
- Once decontaminated, deface or cover hazard labels on equipment to be moved or discarded.
- When discarding laboratory equipment, remove and properly dispose of capacitors, transformers, mercury switches, mercury thermometers, radioactive sources, chemicals and biohazards before disposal.

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Global Harmonized System (GHS) – Hazard Communication Pictograms

 **Exploding Bomb** • Explosives • Self-Reactives • Organic Peroxides	 **Flame** • Flammables • Pyrophorics • Self-Heating • Emits Flammable Gas • Self-Reactives • Organic Peroxides	 **Flame Over Circle** • Oxidizers
 **Gas Cylinder** • Gases Under Pressure	 **Corrosion** • Skin Corosion/Burns • Eye Damage • Corrosive to Metals	 **Skull and Crossbones** • Acute Toxicity (fatal or toxic)
 **Exclamation Mark** • Irritant (skin and eye) • Skin Sensitizer • Acute Toxicity • Narcotic Effects • Respiratory Tract Irritant • Hazardous to Ozone Layer	 **Health Hazard** • Carcinogen • Mutagenicity • Reproductive Toxicity • Respiratory Sensitizer • Target Organ Toxicity • Aspiration Toxicity	 **Environment** • Aquatic Toxicity

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Site-Specific Safety Orientation & Training for Laboratory Personnel

Prior to completing this site safety orientation and training, all laboratory personnel must have successfully completed General Laboratory Safety Training and RSS on-boarding. Completion of this training is required prior to personnel being granted unescorted access to the laboratory.

Topic	Action	PI Initials
EMERGENCY PROCEDURES		
Fire Alarm Pull Station:	Show location(s) and proper activation.	
Eye Wash / Safety Showers:	Show location(s) and proper operation.	
Spill Procedures:	Show location of spill kit(s), review and describe procedures for clean up.	
Phone:	Location(s), detail dialing instructions, '911' dialing instructions, CSUN Emergency Procedures poster.	
Emergency Response Guide:	Location(s) DPS Poster, discuss scenario actions and responsibilities.	
Department Emergency Action Plan:	Review Emergency Action Plan. Demonstrate both paths to Emergency Assembly Area. Review evacuation procedures for disabled employees if applicable.	
EMERGENCY PROCEDURES		
Chemical Fume Hood(s):	Demonstration of proper use, instruction on adjustable controls, flow sensor function, and training requirements.	
Biological Safety Cabinet(s):	Demonstration of proper use, instruction on adjustable controls and training requirements.	
Chemical Storage Location(s):	Location(s) and segregation rules, labeling and volume limits.	
Other Controls (*e.g.*, Glove Boxes, Snorkels, Gas Cabinets, Paint Booths, Laminar Flow Benches):	Demonstration of proper use, instruction on adjustable controls.	
Describe in detail:		
ADMINISTRATIVE CONTROLS		
Chemical Hygiene Program:	Location and content description. Also, any applicable specific Laboratory Safety Plan(s) location and content.	
Safety Data Sheets (SDSs):	Demonstrate electronic access and/or describe laboratory repository of hard copy SDSs, as appropriate	
Standard Operating Procedures (SOPs):	Location of lab's SOPs, describe required approvals. Identification of chemical processes / areas requiring specific SOP use, and laboratory safety rules.	
Describe in detail:		

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PROTECTIVE PERSONAL EQUIPMENT		
Lab Coat:	Provide at no cost fitted laboratory coats. Some labs/hazards require flame resistant coats. ● Type: □ Cotton/Blend □ Barrier □ Flame Resistant Size:_____	
Eye Protection:	Provide at no cost pair(s) of safety eyewear. Glasses must fit appropriately, be comfortable to wear, and stay securely in place. For labs where goggles must be worn provide pair(s) of fitted chemical splash goggles. When a face shield is required, demonstrate proper use, care and storage. Model:_____ ● Corrective Prescription Y / N	
Gloves:	Location(s), provide knowledge and resources to select correct type. Instruct proper procedure to don and doff.	
OTHER		
Specialized Processes:	Review of laboratory processes and conditions that are specifically unique to the lab. e.g., tissue sectioning, wet-mount slides, plasmid DNA Transfections, etc.	
Specialized Equipment:	Review of safety procedures for proper operation. *e.g.*, UV light, laser, high voltage equipment, superconducting magnets, cryogen handling, high/low vacuum, etc.	
Hazardous Waste:	Overview of laboratory hazardous waste procedures. Location(s) of accumulation area, demonstrate proper labeling, describe proper storage requirements, and detail pickup/removal procedures.	
Equipment failure contingency plans	Overview of alternate laboratory procedures and processes should a foreseeable/unforeseeable shut down occur to equipment or campus. e.g. discuss alternate fume hood locations, fridges, powered equipment, etc.	

Describe in detail:

I_____ confirm receipt of training on the listed topics on
(print name, lab personnel)
_____ from _____. All of my questions regarding
(date) (print name, PI)
this material have been answered. Topics have been initialed by me, or marked with an "X" where not applicable.

_____ _____
(signature, lab personnel) (signature, PI)

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Systemwide Risk Management
401 Golden Shore, 5th Floor
long Beach, CA 90802-4210

www.calstste.edu

DATE: June 2, 2023

TO: Chief Administrators and Business Officers

FROM:
Zachary Gifford, Senior Director of Systemwide Risk Management
Jenny Novak, Director of Systemwide Emergency Mgt & Continuity

SUBJECT: Critical Incident Notification Protocol

Beginning July 1, 2023 we are launching a new protocol for CSU locations to notify Systemwide Risk Management when a critical incident occurs. Our goal is to provide a formal and centralized 24/7 method for contact that can be incorporated into emergency plans. Upon notification, Systemwide Risk Management will assess the need for the activation of the Systemwide Emergency Support Team or the notification of additional Chancellor's Office Departments, partner agencies and applicable service providers.

This protocol is not intended to and does not preclude a campus from providing any additional notifications to campus or Chancellor's Office personnel or departments the campus decides is necessary.

Please review the attached protocol for incorporation in your campus plans and procedures. This protocol can also be found as an attachment to the CSU Emergency Management Policy.

If you or your staff have any questions about this Critical Incident Notification Protocol please contact Jenny Novak, Director of Systemwide Emergency Management & Continuity at inovak@calstate.edu or (562) 400-2358.

C: Campus Risk Managers
Campus Police Chiefs
Campus Executive Facilities Officers
Campus Emergency Managers
Campus Business Continuity Managers
Campus Environmental Health & Safety Managers
CSU Systemwide Emergency Support Team Members

CSU Campuses

Bakersfield	Fresno	Monterey Bay	San Francisco
Channel Islands	Fullerton	Northridge	San Jose
Chico	Humboldt	Pomona	San Luis Obispo
Dominguez Hills	Long Beach	Sacramento	San Marcos
East Bay	Los Angeles	San Bernardino	Sonoma
	Maritime Academy	San Diego	Stanislaus

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CSU Systemwide Risk Management
Critical Incident Notification Protocol
562-951-4900
csuriskmanagement@calstate.edu

The intent of this protocol is to establish a formal and centralized process for the timely reporting of critical incidents to the Chancellor's Office of Systemwide Risk Management. Once informed about a critical incident that occurred on a campus, Systemwide Risk Management can assess the need for the activation of the Systemwide Emergency Support Team or the notification of additional Chancellor's Office Departments, partner agencies and applicable service providers.

This protocol is not intended to and does not preclude a campus from providing any additional notifications to campus or Chancellor's Office personnel or departments the campus decides is necessary.

Required Notice

High Impact Incidents - Campus will notify Systemwide Risk Management as soon as possible but no later than 24 hours after occurrence has been confirmed.

Moderate Impact Incidents - Campus will notify Systemwide Risk Management within 72 hours of occurrence has been confirmed.

Critical Incident Definitions

High Impact Incidents are defined as:

- Fires and explosions that result in serious injuries or partial / full closure of campus buildings

Please note that fires and explosions require additional notification to the State Fire Marshal's Office Duty Chief within 24 hours. The State Fire Marshal's Office is required by law to investigate all fires or explosions in or on state-owned, state-occupied facilities and properties.

- Any deaths, including suicides, that occur on campus or during campus-sponsored events
- Any incident that necessitates the activation of the campus Emergency Operations Center

Moderate Impact incidents include:

- A serious injury or illness to staff or students occurring on campus or during campus sponsored events

Serious injury/ illness is defined as requiring inpatient hospitalization regardless of length of time for any reason other than medical observation or diagnostic testing. Hospitalizations due to alcohol use do not need to be reported.

Please note campuses are required by law to also immediately report any such incident involving employee death or serious injury / illness to Cal OSHA. This is typically reported by the campus Environmental Health & Safety Department.

- A single incident that causes injuries to multiple students or staff
- An incident that causes structural property damage resulting in partial/ full closure of campus buildings
- A significant chemical / hazardous materials release to the environment

Method of Notification

SMS / Voice: 562-951-4900

Email: csuriskmanagement@calstate.edu

These contact methods are available at all hours and will reach a core group at the Chancellor's Office Systemwide Risk Management who will determine next steps.

Each campus leadership team may determine which department is responsible for making the notification depending on their individual organizational structure.

Content of Notification

Notifications must include the following information:

1) Type of incident
2) Campus and building where the incident occurred
3) Date and time of incident
4) To the extent known, any details or information about the incident or the circumstances related to the incident

Name and contact information for follow up

XVIII. Revision Record

Revision	Changes	Date
3.1	Update Format, Links, & Procedures	August 2013
3.2	Minor Revisions & Updates	February 2015
3.3	Minor Revisions & Updates	July 2018
3.4	Minor Revisions	February 2019
3.5	Minor Revisions & Updates	August 2019
3.6	Minor Revisions & Link Updates	June 2021
3.7	Major Update to program, Forms, References, & Procedures	September 2023

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Status **Active** PolicyStat ID **8588538**

Origination	1/1/2009
Effective	11/15/2021
Last Revised	11/15/2021
Next Review	11/15/2022

Owner	Zachary Gifford: Sr Dir, SW Risk Mgmt
Area	Business and Finance
Codes	EO 1039

California State University Environmental Health and Safety Policy

I. Policy

The California State University recognizes Environmental Health and Safety (EH&S) as an integral function and is committed to providing a safe and healthy environment for our students and employees.

The EH&S function incorporates the policies, procedures, support services, oversight, and stewardship necessary for the University to not only provide a safe and healthy environment for students and employees by complying with applicable EH&S laws and regulations, but to foster a culture of safety.

II. Purpose

The purpose of this policy is to establish practices that enhance the safety of the faculty, students, staff and volunteers in the CSU. Furthermore, this policy shall provide a framework for EH&S processes, assessment, accountability and reporting.

III. Responsibility

All employees who assign and/or oversee work are responsible for ensuring that compliant work controls and procedures consistent with Federal, State and local regulations and University policies are implemented and maintained to provide for the protection of individuals and to safeguard the environment. Each individual is expected to comply with applicable EH&S regulations and University policies, programs and procedures. Additionally each individual is expected to: perform work in a safe and reasonable manner, report and address hazards they become aware of (personal observation or via a reporting process) and act to ensure the health and safety of themselves, coworkers, students, and all others at the University without fear of reprisal. Compliance with health and safety regulations is paramount and enforcement and remediation are campuswide responsibilities.

A. Office of Systemwide Risk Management

The chancellor has designated that the Office of Systemwide Risk Management (SRM) has administrative oversight and responsibility for supporting campuses in the development of EH&S programs and resource documents. SRM shall provide guidance on EH&S laws, regulations, policies, and procedures as well as other appropriate support to ensure campus programs are effective.

B. Campus Presidents

Each campus president shall designate a campus EH&S program administrator with the authority to establish and maintain the campus environmental health and safety program. Additionally, the campus president is responsible for promoting a culture of safety by ensuring safety and environmental protection exist at all organizational levels within the Campus.

C. Campus Senior Leadership

Camus senior leadership (e.g. Vice President, Provost) is responsible for ensuring environmental health and safety programs are established, implemented and maintained for operations within their divisions and departments (including self-support and auxiliary organizations).

D.

Campus EH&S program administrators are responsible for establishing, communicating and maintaining campus environmental health and safety programs that meet the requirements of the applicable Federal, State and local regulations. They are further responsible for assisting the campus in identifying health and safety hazards and for providing organizational leadership with information about hazards and appropriate controls.

E. Deans and Directors

To ensure employees are aware of and adhere to applicable EH&S requirements, deans, and directors are responsible for establishing, promoting, and maintaining a culture of safety within their respective colleges and departments/units, classrooms, laboratories and for maintaining and monitoring compliance with those EH&S requirements. Areas of responsibility include, but are not limited to, hazard assessment, training, maintenance and use of safety equipment, inspections, and hazardous materials management. They must attend/complete all required EH&S training and follow the procedures described in the training. If a CSU policy or program is in conflict with a Collective Bargaining Agreement (CBA), the CBA shall take precedence unless otherwise proscribed by law or regulation.

F. Department Chairs

To ensure employees are aware of and adhere to applicable EH&S requirements, Department Chairs are responsible for establishing, promoting, and maintaining a culture of safety within their

respective departments/units, classrooms, laboratories and for maintaining and monitoring compliance with those EH&S requirements. Areas of responsibility include, but are not limited to, hazard assessment, training, maintenance and use of safety equipment, inspections, and hazardous materials management. They must attend/complete all required EH&S training and follow the procedures described in the training. If a CSU policy or program is in conflict with a Collective Bargaining Agreement (CBA), the CBA shall take precedence unless otherwise proscribed by law or regulation.

G. Managers and supervisors

CSU managers and supervisors are responsible for identifying hazards associated with their duties/job functions, including any applicable reporting of identified hazards, learning and implementing EH&S requirements that are applicable to employees, areas and operations under their control. They must attend/complete all required EH&S training and follow the procedures described in the training. If a CSU policy or program is in conflict with a Collective Bargaining Agreement (CBA), the CBA shall take precedence unless otherwise proscribed by law or regulation.

Managers and supervisors should consult with employees under their supervision, in the development, planning, implementation, and corrective actions to improve EH&S function and compliance.

H.

Faculty shall identify and report hazards associated with their teaching and research activities. Faculty shall ensure students, employees, and official volunteers who are associated with their teaching and research activities, receive appropriate information, training, and safety equipment. Faculty shall comply with applicable laws, regulations, policies, and programs of which they are reasonably informed. Faculty should work with their department safety coordinator and/or EH&S department to implement applicable EH&S programs and document compliance with applicable EH&S requirements. They must attend/complete all required EH&S training and endeavor to follow the procedures described in the training. If a CSU policy or program is in conflict with a Collective Bargaining Agreement (CBA), the CBA shall take precedence unless otherwise proscribed by law or regulation.

I. Staff

Staff, are responsible for reporting all identified hazards to their appropriate administrator. They must attend/complete all required EH&S training and follow the procedures described in the training. Training must be timely and in advance of the assignment of duties. Training information must be presented in a manner that employees receiving it are capable of understanding. Employee safety and environmental compliance are based on individual responsibility for safety and environmental stewardship. Staff support EH&S compliance by engaging in safe practices while performing activities at the University. Each individual is directly responsible for ensuring his or her own safety and for promoting a safe, healthy, and environmentally-sound workplace. An

employee shall be responsible for other persons within a reasonable expectation of safety. Proper authority, training, appropriate equipment and span of control is necessary for staff to maintain a safe and healthy environment. If a CSU policy or program is in conflict with a Collective Bargaining Agreement (CBA), the CBA shall take precedence unless otherwise proscribed by law or regulation.

J. Student Workers and Official Volunteers

Student Workers and Official Volunteers are responsible for reporting all identified hazards to their appropriate administrator. They must attend/complete all required EH&S training and follow the procedures described in the training. Training must be timely and in advance of the assignment of duties. Training information must be presented in a manner that Student Workers and Official Volunteers receiving it are capable of understanding. Student Worker and Official volunteer safety and environmental compliance are based on individual responsibility for safety and environmental stewardship and they support EH&S compliance by engaging in safe practices while performing activities at the University. Each individual is directly responsible for ensuring his or her own safety and for promoting a safe, healthy, and environmentally-sound workplace. An employee shall be responsible for other persons within a reasonable expectation of safety. Proper authority, training, appropriate equipment and span of control is necessary to maintain a safe and healthy environment. If a CSU policy or program is in conflict with a Collective Bargaining Agreement (CBA), the CBA shall take precedence unless otherwise proscribed by law or regulation.

K. Students

Students shall follow all established EH&S requirements for their campus. They must attend/complete all required EH&S training and follow the procedures described in the training. Students are responsible for ensuring their own safety and reporting identified hazards to their faculty, residential assistant, or campus EH&S departments.

IV. Requirements

Management shall demonstrate leadership and commitment with respect to environmental health and safety, and address safety concerns brought to their attention.

A. EH&S Programs

Campuses shall establish, implement and maintain written environmental health and safety programs as required by applicable laws, regulations, policies, and recognized needs that should include, but are not limited to, the following elements:

- Person(s) with the authority and responsibility for implementing and maintaining the EH&S program.
- Programs shall address the applicable laws, regulations, policies, and recognized needs for EH&S programs, and provide guidance to establish compliance, eliminate or minimize hazards, and mitigate risk.

- Programs should include processes for hazard identification. Hazard assessment should consider conditions and activities to take place and methods/measures to eliminate or minimize hazardous conditions and mitigate risk.
    - Changes in processes/conditions require a reassessment of hazards.
- Written programs should be reviewed and/or updated as required by regulation, when circumstances change, or a minimum of every three years.

B. Communication and Implementation

- The EH&S program administrator shall communicate recognized program requirements to the campus community.
- Communication may consist of new or revised written EH&S programs, training, webpage content, and safety committee meetings and minutes.
- The EH&S program administrator shall collaborate with the appropriate faculty and staff to implement applicable programs. This includes but is not limited to conducting regular meetings with campus safety committees. All meetings held between EH&S program administrators and campus safety committees shall be recorded and the minutes distributed.

C. Employee Training

- EH&S training requirements shall be identified and assigned by the EH&S program administrator or the faculty/staff in charge of the activity process as proscribed in the Responsibilities section of this document. Training will be assigned to affected faculty, staff, student workers and official volunteers.
- The written program will define the training content, training timeliness and frequency of refresher training.
- Laboratory safety training shall include initial laboratory safety training, as well as refresher training a minimum of every three years or more frequently should laboratory hazards change.
- Completion of employee training should be documented and training records shall be maintained in accordance with Executive Order 1031: *Systemwide Records/Information Retention and Disposition Schedules Implementation*.

D. Student Training

Faculty/Staff will ensure a hazard assessment is conducted for student activities in their classes, labs, shops, field experience, and like learning environments. Hazards to be considered include potential for exposure to biological, chemical and/or physical hazards (e.g. in chemistry, biology, physics, engineering, or art labs). The program will include:

- Developing and implementing student training programs that inform students of the potential hazards and the safe educational practices/procedures that must be utilized to avoid injury or illness.
- Completion of student training should be documented and training records should be maintained in accordance with EO 1031. *Systemwide Records/Information Retention and Disposition Schedules Implementation*.

- Upon request, EH&S staff shall collaborate with academic departments on hazard identification and assessment to help determine and develop student training needs.

E. Program Monitoring and Maintenance

- Inspections and Program Reviews
    - Departments with identified hazards (e.g. laboratories) shall conduct self-inspections for applicable EH&S programs to ensure compliance with the requirements. The results of these self-inspections shall be sent to the department chair or administrator in charge.
    - In addition to departmental self-inspections, the campus EH&S program administrator or designee shall conduct inspections and program reviews of each department with identified hazards. EH&S shall provide the department chair or administrator in charge with written report on the status of their compliance, including observations and recommendations.
    - Based on the results of inspections and program reviews, the EH&S program administer or designee will evaluate the effectiveness of the campus EH&S program(s), make appropriate changes and communicate them to affected department chairs, administrators, safety coordinators and others as applicable.
- Monitoring, Measurement and Reporting
    - Upon request and/or when identified, EH&S shall provide assistance to departments to ensure they have the necessary information and support to comply with the requirements.
    - Deans, directors and department administrators and/or chairs shall ensure appropriate actions are taken within their departments to correct any identified EH&S program deficiencies.
- The CSU endeavors to maximize the safety of its employees, students and volunteers. Nevertheless, when accidents occur, the CSU will endeavor to correct deficiencies that led to that occurrence. Campus responses to accidents should generally be remedial as opposed to punitive.

V. Annual Report

The Campus EH&S Program Administrator shall provide an annual Environmental Health and Safety report to the Campus president with a copy to the Systemwide Office of Risk Management. The purpose of these reports is to evaluate environmental health and safety for effectiveness and regulatory compliance and to communicate and document the results of that evaluation.

The annual report may be of a design established by each campus; however, certain Key Performance Indicators (KPI) must be included in all annual reports. These KPIs and a template for an annual report can be found in Attachment A. This template may be reevaluated and updated as necessary.

Annual reports are due on November 1st for the preceding academic year.

VI. Authority

This policy is issued pursuant to Section II of the Standing Orders of the Board of Trustees of the California State University, and as further delegated by the Standing Delegations of Administrative Authority.

All Revision Dates

11/15/2021, 1/1/2009

Attachments

Systemwide EHS Annual Report Template

Approval Signatures

Step Description	Approver	Date
EVC	Steven Relyea: Executive Vice Chan & CFO	11/15/2021
Area Manager/Owner	Bradley Wells: Assoc VC, Business & Finance	11/15/2021
Area Manager/Owner	Zachary Gifford: Sr Dir, SW Risk Mgmt	11/10/2021