Title:	General Lab Safety Policy
Approved :	
Effective Date:	01/01/2015
Responsible Official:	Senior Director EHS
Responsible University Office:	Environmental Health and Safety
Revision History:	7/1/2022
Related Legislation and University Policy:	EPA, OSHA, NFPA, CDC, APHIS, NIOSH, NIH, FDA, ODH, NRC, etc
Review Period:	5 years
Last Review Date:	6/22/2022
Relates to:	All of CWRU Community

Purpose of Policy:

This Policy has been developed to:

Communicate University leadership's commitment to environmental health and safety efforts;

Assign key environmental health and safety responsibilities to the University community; and;

Foster accountability to support continuous improvement

These three factors are critical in supporting the University's commitment to organizational excellence and promoting a culture of safety.

General Statement

University leadership, at all levels, is committed to protecting the health and safety of all employees, students, visitors, and the environment. This is achieved through the continuous improvement of the university's culture of safety and environmental stewardship in support of advancements in the university's teaching, research, and service mission. The University considers no phase of its operations or administration more important than the well-being of our community. Leadership shall ensure that safe and healthy conditions are provided and shall always insist on safe work methods and practices.

All members of the community shall:

- Comply with all training obligations as required by various regulatory requirements and maintain training and retraining current;
- Maintain a positive safety culture and reinforce the importance and roles of safety and security;
- Exercise due diligence and report situations that jeopardize the safety and security of themselves, the community, or any other aspect of the university;
- Safeguard themselves against harm including using Engineering Controls and Personal Protective Equipment as well as utilizing less hazardous materials or procedures whenever possible;
- Safeguard the environment and utilize the chemical, biological, radiological and other disposal programs;
- Report injuries in a timely manner and provide reports.

No member of the research community shall undertake work that could place themselves or other community members in jeopardy.

No unauthorized research shall be conducted.

Hazardous materials shall not be stored or used in non-research buildings or taken home.

Any observed unsafe activities shall be immediately reported to supervisors, faculty, or the Integrity Hotline.

Specific Assigned Responsibility for Laboratory Safety

Environmental Health and Safety

Environmental Health and Safety (EH&S) provides program support to assure a safe research work environment is maintained and regulatory compliance is achieved. **EHS is tasked with assuring that all EHS Federal, State, and Local regulatory obligations are met.** This is accomplished through inspections, training, expert guidance on safety related issues, and analysis of risk and mitigation strategies. EHS is charged with communicating hazards observed and assuring action is taken to resolve the issues found. EH&S also provides services such as hazardous waste disposal, radioactive waste removal, assistance with permits, and in field support for emergency response.

Laboratory Safety Committee

The Laboratory Safety Committee LSC is a faculty led group of advisors to the EHS department. They provide expert advice and guidance regarding laboratory safety and its impact in the laboratories. The Laboratory Safety Committee also reviews major incidents on campus and provides annual program auditing of the EHS programs. The composition of the committee has been expanded to encompass additional safety leaders at the staff level.

1. Establish and maintain a chairperson
2. Each member of the University Safety Council shall attend the regularly scheduled meetings and special meetings of the LSC
3. Review all employee accidents and incidents. Assist in the investigation of serious accidents, and other accidents or process safety incidents.
4. Provide annual auditing of EHS programs

Administrative Units

Vice President of Research

The vice president for research is responsible for directing the university's research mission. Through policies, procedures, and educational programs that support research, the vice president for research develops and implements research initiatives that establishes a culture of compliance.

The vice president for research ensures the compliance of all aspects of the research process, the safety and welfare of employees and research participants, and adherence to all governmental regulations and university and sponsoring agency policies and procedures governing the research process.

The vice chancellor for research works closely with the University Compliance Office, the Office of the General Counsel, Environmental Health and Safety, the Deans, and department heads to maintain accountability and to resolve issues of noncompliance

Provost

The Provost has responsibility for ensuring Schools prioritize safety and assure adequate resources are available to comply with Federal, State, and Local regulations. This includes assuring safety is budgeted for in programs and grants and supporting a positive safety culture. The Provost may be called upon to resolve issues at the PI, School, Dean level.

Deans

The Deans office of each school has responsibility for ensuring adequate resources are available for safety and for establishing protocols to ensure the continuity of research that is compliant with Federal, State, and Local regulations. Further the Dean is responsible for assuring that hazardous research has adequate support structures to handle proposed research such as laboratories that are assigned, designed, and built for the purpose they shall be used for. They are responsible for supporting a positive safety culture and establishing safety as a priority. They may be called upon to resolve issues within a department that require elevation beyond the Chair of a department or that involves multiple departments.

Department Chairs

Department Chairs and Unit Heads have direct responsibility for safety within their departments to assure that Federal, State, and Local regulatory obligations are meet and a positive safety culture is present. They are also responsible for space allocation and security in cooperation with the Deans office. The Chair also holds ultimate responsibility for safety in teaching laboratories. They may delegate authority for implementing sections of the program; however, this does not eliminate direct responsibility for the program.

The Department Chair is responsible to:

1) Appoint a department safety committee comprised of both faculty, staff, and students. This group should conduct annual or more frequent inspections and proactively report issues to the Chair for correction.

2) Support a positive culture of Safety

3) Receive an annual summary of safety inspections from EHS and ensure investigators follow up and complete findings

4) Work with EHS to ensure compliance when issues come up that either are not handled by the Primary Investigator or which require Department level assistance such as funding, notifications, shared spaced, unusual work arrangements, etc.

5) Plan for and establish onboarding and offboarding procedures for faculty, students, visiting scholars, volunteers.

6) Plan for the financial disposition of research materials when faculty retire, move, or leave the university.

7) Direct the cleanout of laboratories and pay for the cleanout of laboratories from PIs retiring, moving, or leaving.

8) Act as the point of contact for emergencies in vacant and shared lab spaces and to ensure they are left in stable safe condition and remain locked.

9) Assure teaching labs have adequate safety procedure in place and personnel to support safety in these spaces

SUPERVISORS

1. All supervisors (department chairs, faculty, and other employees with direct oversight of University activities and employees or students) have specific responsibilities to provide for the health and safety of those supervised. They are in a key position in the organizational structure to carry out the department's safety policies and to prevent injuries to their employees.
2. Be thoroughly informed of appropriate University and Departmental safety policies, rules and procedures and how they specifically apply to their responsibilities and authority.
3. Inform all new and current employees and students that safety and health, and concern for the environment, are priorities at Case Western Reserve University and to inform them about safety and health policies, rules, regulations, and procedures, as well as their specific responsibilities.
4. Ensure that required safety equipment, devices and personal protective equipment and apparel are provided and maintained and are properly used by individuals working in their operations.
5. Provide employees and students with instruction and assistance in the proper operation of equipment, materials, or processes involved in any operation which may be potentially hazardous.
6. Take prompt corrective action when unsafe conditions, practices or equipment are reported or observed.
7. Encourage prompt reporting of health and safety concerns.
8. Promptly conduct a thorough investigation in all work-related injuries, illnesses, accidents, and process safety incidents, submit appropriate recommendations on all accident reports, as appropriate, and follow through to ensure corrective measures have been implemented.
9. Coordinate or conduct inspections to maintain safe and healthful conditions and address any deficiencies that are identified.
10. Provide for health and safety training both through EHS and locally.
11. Provide financial support for health and safety improvements, or request assistance from the next higher level of supervision regarding these requests.

Primary Investigator Responsibilities

The primary investigator is the head director of each laboratory group and is responsible for the formation and support of a safe work environment in the laboratory. This section offers more detailed guidance.

Safety Culture

The head of the laboratory sets the tone for the laboratory. Providing a positive safety culture is a prime job of the PI.

1) Ensure workers have a free open line of communication with the PI
2) Ensure that the PI is present and available to all workers
3) Hold regular meetings that include safety as a topic section
4) Enforce safety rules and correct bad behaviors observed
5) Establish a system of reward for maintaining the workspace
6) Appoint a safety leader in the group to look after day-to-day operations
7) Conduct self-inspection of the laboratory and correct items found
8) Ensure proper protective measures and equipment are in place

Personnel Protective Equipment

1) The PI shall select proper protective equipment in cooperation with CWRU EHS
2) Ensure workers are trained to use it and detail its use I the CHP/ECP plans.
3) Ensure appropriate PPE is always present and that it is provided free of charge.
4) Ensure that workers do not reuse disposable PPE.

Safety Plans Chemical Hygiene Plan (CHP)/Exposure Control Plan (ECP)

Every laboratory must have a Chemical Hygiene Plan and or Exposure Control Plan that describes the safety requirements of the laboratory, equipment, PPE, engineering controls, and other safety requirements to keep the laboratory workers safe.

If this the laboratory also works with Biohazards, an Exposure Control Plan is also required that covers Biohazard work separately. Both Plans must:

1) Cover all work done in the laboratory or at remote field locations
2) Detail all safety requirements for the work to be done in clear concise manner that the worker can use to stay safe
3) Be communicated to workers through formal documented laboratory specific training given by the PI.
4) Plans and communication must be updated if a change occurs or annually whichever is shorter.
5) The laboratory specific training in the CHP/ECP must be documented with a sign in sheet and an outline of the training given
6) The CHP/ECP and laboratory specific training must be immediately available to all workers and EHS inspectors.
7) Must include clear instructions in the event of an injury or emergency

Training/Retraining

Safety Training is the primary method used to communicate hazards to the worker and explain how they are expected to work and what means and methods they are to use to remain safe.

1) All workers and PIs must complete general EHS safety training annually and prior to starting work.
   A) There is an initial class required prior to the start of work that is given in person or over zoom
   B) There is an annual retraining required given on canvas.case.edu
2) All PIs must deliver laboratory specific training detailing the CHP/ECP as described under plans and document this training with an outline of the training and a sign in sheet. This must be done prior to starting any work and renewed annually. This is critical to compliance.

Inventories

Every laboratory must have a complete Chemical, Biological, and Radiological inventory. The inventory must be a part of the CHP/ECP. The inventory should be kept in an electronic spreadsheet.

Hazardous Waste removal

PIs shall assure that chemical, biological, and radiological waste is disposed of through the EHS Hazardous Waste system regularly and consistently. Materials no longer in use at the end of project should be disposed of within one year of the conclusion of a project. Failure to do so shall mean that the cost for disposal of these materials shall shift from the Hazardous Waste program to the PI, Department, and School. The CWRU Hazardous Waste program only covers materials from active research. See the Hazardous Waste section of the EHS website for more detail.

Purchasing Chemicals, Biologicals, Radiologicals, Drugs

All research materials must be purchased with a PO/REQ. Credit cards are not allowed.

Emergency Information

Every laboratory must have an up-to-date emergency contact sign on the entrances to the laboratory. The PI is the primary contact

1) A reachable number is required. Do not list your office or Dispatch.
2) The information must be immediately updated if there is a change
3) The person answering must be fully familiar with the operations of the laboratory and be able to aid responders in understanding the status of the laboratory and any work being done. They must also be available to come to the laboratory if required.
4) All experiments must be clearly marked with what is going on

Equipment

All laboratories should ensure that all equipment including safety equipment is in good repair.

1) Check all safety devices such as fume hoods, eyewashes, safety showers, fire extinguishers to make sure they are in good shape. Each device should have a current test tag from EHS or Facilities.
2) Make sure that safety devices are not blocked or otherwise obstructed
3) Ensure all safety equipment has been test with in the last year.
4) Report broken or inoperative equipment and have it repaired. Take it out of service and tag it so it is clear not to use it.
5) Ensure that all gas cylinders are properly secured, capped/regulated, and plumbed correctly.
6) Do not purchase or allow the use of devices such as refrigerators, microwaves, blow dryers or other non-laboratory equipment.
7) Assure all Refrigerators storing chemicals are rated for the intended use. Home refrigerators are not designed for flammable materials and could be a fire hazard in a laboratory as they may have sparking devices that are not shielded. This may be as simple as the door light.
8) All Biosafety Cabinets and other containment devices must be tested annually
9) Modifications to equipment or the design of DIY equipment must be approved by EHS, Facilities, the manufacturer, and if applicable General Consul. The use of DIY power delivery devices such as extension cords is prohibited. Buy commercial units.
10) Attaching to building systems such as HVAC or electrical systems other than a standard outlet is prohibited without Facilities design and implementation.

Housekeeping

Every laboratory must maintain a safe work environment. Part of this is ensuring that the materials, equipment, and workspaces are free from hazards:

1) At least annually, all chemicals, biologicals, and radiological materials should be examined to make sure:
    A) All labels and containers are in good shape
    B) All materials are within their expiration dates
    C) All materials are properly stored and segregated by compatibility
    D) All chemical, biological, and radiological waste is disposed of regularly and that materials no longer required are disposed of at the end of a project.
2) All general waste such as boxes, cans, sharps, and other refuse must be removed regularly
3) All workspaces should remain free of items and materials not in direct use for the experiment being conducted.
4) All materials should be properly stored at the end of each day.
5) Do not store chemicals, biologicals, or radiological materials on the floor or above eye level.
6) Ensure that all waste containers remain shut when materials are not being added or removed
7) Ensure egress is maintained and safety devices such as sprinklers, eyewashes, safety showers, extinguishers, exits and electrical panels, hallways and isles remain unobstructed

EHS Laboratory Inspection Compliance

EHS conducts annual inspection of laboratories and provides feedback on areas that require attention.

1) The investigator must review and address all issues found
2) The investigator must respond within 2 weeks of the receipt of the inspection with a plan to address issues or request more time
3) The investigator shall communicate the findings of the inspection with the laboratory staff and seek advice to prevent reoccurrence
4) The investigator shall conduct self-inspection at least annually of all laboratory spaces in person.

Injuries and reporting

Injury reporting is a critical part of the mitigation cycle. All injuries must be properly reported. More serious injuries shall require an after-action root cause investigation between EHS and the labs. All injuries involving death, amputation, or hospitalization must be reported to EHS, General Consul, the Chair, and the Dean within 8 hours of occurrence. Agencies such as OSHA require notification within this time frame.

Working Alone policy

While never preferred, a formal policy covering working alone exists and is found on the EHS website. A detailed list of prohibited work is also described. Refer to this policy for questions regarding working alone. The Primary Investigator must initiate the working alone plan and submit it to EHS for approval prior to the start of working alone.

Minors and Volunteers Policy

Minors are prohibited from working in laboratories except as described in the Minors and Volunteers Policy

Departing Students and other workers

When a worker or student leaves, the PI must assure that all samples have been properly labeled and stored prior to departure. All waste materials must be properly removed, and all safety documents updated. This included notification to EHS of the departure of the individual so that records can be updated and removed.

Laboratory Worker Responsibilities

Laboratory workers must not continue an experiment if they feel unsafe or unsure of the work or outcome (STOP!) Laboratory workers have the right to stop work if they feel unsafe.

Laboratory workers must not modify or scale up experiments without prior authorization from the PI

Laboratory workers must not conduct unauthorized experiments or personal projects

Laboratory Workers must follow safety protocols listed in the CHP and ECP plans as written. Consult the PI before making changes.

1. All University employees and students have specific responsibilities to comply with established health and safety policies, standards, rules, procedures, and regulations. Compliance with these is essential to create and maintain a healthy and safe environment at all University locations.
2. Comply with applicable environmental health and safety policies, standards, rules, regulations, and procedures. These include safety-related signs, posters, warnings, and written/oral directions when performing tasks.
3. Do not perform any function or operation which is considered hazardous or is known to be hazardous without proper instructions and authorization.
4. Only use equipment and materials approved or provided by the supervisor or instructor and for which instruction has been provided by this or other experience.
5. Become thoroughly knowledgeable about potential hazards associated with the work area; knowing where information on these hazards is maintained and how to use this information when needed.
6. Wear or use prescribed protective equipment.
7. Report all unsafe conditions, practices, or equipment to the supervisor, instructor, or safety officer whenever deficiencies are observed.
8. Inform the supervisor or instructor immediately of all work-related injuries, accidents or process safety incidents and obtain prompt medical attention when necessary.
9. Provide information necessary for the supervisor or safety officer to adequately and thoroughly complete the associated accident/illness/process safety reports.

10. All laboratory workers must complete initial OSHA Lab Standard training plus specialty classes as required such as Biohazard, Radiation, Laser, shipping, or other specialty courses. This must be completed prior to starting work. An annual retraining is required. Further lab specific training in the CHP/ECP plans must be completed prior to starting work. This training is provided by the PI. Annual retraining is required for all courses.

11. All Clinical workers such as the Dental School clinic workers and University Health Services must complete Hazard Communication training and Biohazard training prior to work. There is an annual retraining required for each of these classes

12. Medical, Dental, and Nursing students receive initial training through their orientation. Annually retraining is on canvas. The course covers Lab Standard, Hazard Communication, Biosafety//BBP, and Ancillary Radiation. Other specialty courses may be required. Annual retraining is required and covered on canvas.

13. Laboratory workers must utilize appropriate PPE and clothing and must not reuse disposable PPE

14. FOOD, DRINK, COSMENTIC are prohibited. Refer to the CHP/ECP and Lab Safety Manuals for additional details.

REFERENCES:

EHS Website
www.case.edu/EHS

EHS Contact Information
Biological/Chemical 216 368 2907
Radiological 216 368 2906

Safety Culture
https://www.osha.gov/laboratories

Index of General Industry Standards
https://www.osha.gov/laws-regs/regulations/standardnumber/1910
https://www.osha.gov/a-z

Basic Standards

Biohazards
https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1030
Laboratory Safety
https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1450
Chemical Hygiene Plans
https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1450AppA
Hazard Communication
https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1200

Definitions:

Ethical Behavior- Acting in a manner consistent with society's expectations and laws

Positive Safety Culture-A social culture where the safety of the worker, the environment, and the community are central to all activities.

Regulatory Agency- A city state or federal agency that regulates activities in specific areas and promulgates or enforces laws, regulations, statues, or other forms of requirements that reflect the agencies stated objectives. E.g. Fire, Police, Ohio Department of Health, EPA, CDC

Responsible Person-In general terms this means everyone. Everyone is responsible for the safety and security of their sphere of influence. This can further refer to more specific sections of responsibility for specific actions or authorities required by regulation. For example, the Chemical Hygiene Officer of a laboratory.

Unauthorized research-Conducting experiments that are not part of a sanctioned research effort or extending research past agreed limits