The University Laboratory and Field Safety Committee coordinates and monitors laboratory and field safety functions and guidelines associated with research and teaching laboratories. In fulfilling the responsibilities the Committee developed the Safety Manual for Teaching Laboratories/Studios/Shops. This manual provides safety standards for all individuals participating in teaching laboratories including but not limited to area managers, instructors, teaching assistants, course coordinators, staff, and students.

This manual applies to all instructional classroom environments where chemical, biological, or mechanical hazards are present. For the purposes of this manual, all instructional laboratories, studios, and shops will be called teaching laboratories. All teaching laboratory occupants at the University of South Florida have a responsibility to apply safe practices to prevent injuries to themselves and others as well as decrease the potential for damage to equipment, buildings, and the environment. Each teaching laboratory must have a copy of this manual accessible to all occupants.

All faculty, staff, and teaching assistants in teaching laboratories must attend the applicable training courses. These courses include:

- Laboratory Safety Training: All faculty, staff, and teaching assistants must attend training session one time. This training session will explain best laboratory safety practices including personal protective equipment, engineering controls, chemical use and storage procedures, chemical waste procedures, and emergency incident procedures. EH&S will maintain a database of those individuals completing the training and share that information with the Safety Supervisor.

- Hazardous Waste Training: All faculty, staff, and teaching assistants must attend a training session initially and annually if they will manage hazardous waste. This training session will explain chemical waste procedures and emergency incident procedures.

- Biomedical Waste Training: All faculty, staff, and teaching assistants must attend a training session initially and annually if they will manage biomedical waste. This training session will explain biomedical waste procedures and emergency incident procedures.

- Teaching Laboratory Safety Training: The Teaching Assistants or Instructors of laboratory classes must provide a training session to their students during the first class meeting. They should use the guidelines located in Appendix I as the basis for their presentation. Students must sign the guidelines for each class in which they are enrolled. The signed guidelines are to be kept for one year within the Department and be provided to EH&S upon request.

- Biosafety training is required of all personnel working with recombinant DNA, infectious agents, select agents, and biological toxins or who work in a laboratory where these materials are used/stored. The assurance of proper training is the responsibility of the Course Instructor or owner of the facility in which the hazard is used. This biosafety training is

Safety equipment must be available in all instructional laboratories to prevent or reduce exposure to harmful materials. Teaching laboratories using hazardous chemicals, radiation, or biological materials must have safety equipment such as a chemical fume hood, biosafety cabinet, eyewash station, safety shower, fire extinguisher, first aid kit, and spill kit. The Environmental Health and Safety website (www.usf.edu/ehs) provides information on spill kit assembly.

- All teaching laboratory occupants must know where the safety equipment is located and how to use the safety equipment.

- Teaching

Should an injury, damage to equipment, damage to the building, or damage to the environment

- Small spills may be cleaned up by the lab as long as personnel have proper supplies, knowledge, personal protective equipment (PPE) and are comfortable doing so.
    - Secure the area.
    - Consult the SDS of the spilled chemical and put on proper PPE
    - Pick up broken glass using tongs and place in a waste bucket
    - Spread absorbent material around the spill site and over the liquid's surface and wait 15 minutes
    - Collect wet absorbent and transfer to the waste bucket or bag using dustpan and brush.

Many studios, shops, and teaching labs require students to use mechanical equipment. The following section provides information to help reduce the risk of injury due to mechanical equipment use. Injuries such as electric shock, burns, amputation, fractures, lacerations, and crushing can occur while operating equipment. These injuries can result from poorly designed equipment, poorly maintained equipment, using the equipment for unintended purposes, equipment not properly installed, inadequate safeguarding, and objects ejected or discharged or thrown from the machine.

To prevent injuries machine operators should observe the following rules

- Prior to using the equipment students must receive training from the instructor in the operation of the equipment including safety precautions.
- Everyone must follow manufacturer's specifications.
- Do not reach around, under, over or through guards into hazardous areas.
- Do not remove or defeat safety guards.
- Do not reach into equipment to remove stuck or jammed material.
- Do not bypass electrical safety procedures or equipment.
- Wear appropriate personal protective safety equipment.
- Never leave machines unattended with parts still moving unless machine designed for it.
- Do not wear loose clothing or jewelry around moving parts.
- Keep long hair tied back when working around moving parts.
- Immediately report any problems to the area manager/TA/instructor.
- If the equipment is broken, do not use it. Contact the shop supervisor.

A list of guidelines is provided in Appendix IV. Teaching Assistants must go over this list with students and have the students sign it. The document must be kept on record for one year, and must be available to Environmental Health & Safety for review. For more information refer to the USF Shop Safety Guide available on the EH&S website.

Teaching laboratories may produce chemical and biological waste. No waste must ever be put down the drain or in the trash.

- Waste containers must be located at or near the point of generation.
- All waste containers must be closed except when adding materials.
- Chemical waste containers must be labeled with the words "Hazardous Waste" and the contents.
- Biomedical waste containers must display the words "Biomedical Waste" and the international biomedical waste symbol. Only red biohazard waste bags are used.
- All needles and biomedical waste sharps must be disposed of in red plastic sharps containers. For more information on chemical and biological waste refer to the Environmental Health and Safety web site (www.usf.edu/ehs).

In some circumstances students participating in instructional laboratories may be exposed to blood

: An Emergency Release of a large quantity and/or high hazard chemical (according to NIOSH pocket guide and/or SDS) that EH&S staff cannot safely and effectively remediate. An outside public agency such as Tampa Fire Rescue Hazardous Materials Response Team will be contacted. A Category III Release is a chemical release in which:

- Remediation requires specialized equipment and/or instrumentation.
- EH&S staff member is unfamiliar with the material and/or is not trained in the clean up procedure.
- EH&S staff does not have access to appropriate PPE and/or cleanup tools.
- Ventilation is inadequate.
- EH&S will execute the following:
    - Activation of the fire alarm for immediate evacuation of the building.
    - Call 911 for public emergency response services.
    - Recommend that University Police notify neighboring buildings of chemical release.
    - Take other appropriate measure necessary to remediate the situation.

Rules Concerning Housekeeping

- Keep floors free of oil, grease or any other liquid. Clean up spilled liquids immediately.
- Aisles should be kept clear at all times to prevent tripping or other accidents. Backpacks should be placed in the designated area provided.
- Store materials in such a way that they cannot become tripping hazards. Return all excess material to the appropriate storage place.
- Place all metal waste in containers designated for recycling and disposal.

Biological Spill Response

The guidelines are intended to assist the principal investigator, laboratory supervisor, and other responsible individuals who may be involved in the cleanup of biological spills. This guide outlines the basic procedures for dealing with some of the biological spills that may be encountered in a research laboratory. All lab personnel should refer to the specific spill response procedures before starting.

Biosafety Level 1 (B SL1) Spill

- Notify others and secure the area.
- When BSL1 spills occur outside the lab (e.g. hallways, common rooms & corridors) report these BSL-1 spills to: (1) Lab Director (2) USF Biosafety Officer 974 -5110
- Remove any contaminated clothing and wash exposed skin with soap and water.

Clean-up of B SL1 Spill

- Wearing gloves and lab coat, cover spill with paper towels, pour disinfectant around the spill allowing it to mix with spilled material. Allow suitable contact time, at least 15 min.
- Pick up any pieces of broken glass with forceps and place in a sharps container.
- Discard all disposable materials used to clean up the spill into a biohazard bag.
- Wash hands with soap and water.

Biosafety Level 2 (B SL2) Spil l

- Notify others and secure the area.
- Close door, and post with a warning sign.
- Remove contaminated clothing, turning exposed areas inward, and place in a biohazard bag.
- Wash all exposed skin with soap and water.
- Inform Supervisor and/or Lab director and USF Biosafety Officer (974 -5110)

Clean-up of B SL2 Spill

- Allow aerosols to disperse and or settle for at least 30 minutes before reentering the laboratory (if spill outside cabinet). Assemble clean-up materials (disinfectant, paper towels, biohazard bags, and forceps).
- Put on protective clothing (lab coat, facemasks/face protection, utility gloves, and booties if necessary).
- Cover the area with disinfectant-soaked towels, and then carefully pour disinfectant around the spill. Avoid enlarging the contaminated area. Use more concentrated disinfectant as it is diluted by the spill. Allow at least a 20 minute contact time.
- Pick up any sharp objects with forceps and discard in a sharps container.
- Soak up the disinfectant and spill using mechanical means, such as an autoclavable broom and dustpan, since there may be sharps under the paper towels, and place the materials into a sharps container.
- Smaller pieces of glass may be collected with cotton or paper towels held with forceps. If no sharps were involved in the spill discard the materials into an autoclave bag.
- Wipe surrounding areas (where the spill may have splashed) with disinfectant.
- Spray the area with 10% household bleach solution and allow to air-dry (or wipe down with disinfectant-soaked towels after a 20-minute contact time).
- Place all contaminated paper towels and any contaminated protective clothing into a biohazard bag and autoclave.
- Wash hands and exposed skin areas with soap and water.