



UNIVERSITY *of*  
WEST FLORIDA

# **LABORATORY BIOLOGICAL SAFETY (BSL-1) MANUAL**

**DEPARTMENT OF ENVIRONMENTAL HEALTH AND SAFETY  
11000 University Parkway  
Pensacola, FL 32514**

# Laboratory Biosafety Manual

[Biological Safety Laboratory (BSL) Level\_\_1\_\_]

Building: \_\_\_\_\_ Room: \_\_\_\_\_

Department: \_\_\_\_\_

Revised August 2010; Reviewed January 2013

## Chapter 1 - Introduction

While this manual is not intended to cover every aspect of biosafety, essential basic procedures, precautions and guidelines are discussed. If basic **BSL level 1** laboratory practices are performed carefully, along with the appropriate experimental design and common sense, workers should have few problems working safely in the **BSL level 1** environment. It is essential that laboratory personnel maintain good, sound laboratory work practices and precautions. An awareness and respect for the dangerous nature of certain pathogens should always be maintained. Extensive guidelines for biosafety and agent summary statements can be obtained from HHS publication entitled [\*Biosafety in Microbiological and Biomedical Laboratories\*](#). A copy is available from the laboratory's Principal Investigator (PI) and additional copies can be obtained from the Department of Environmental Health & Safety (EH&S). The publication is also available on EH&S's internet web site. The guidelines should be read before work in the **BSL Level 1** laboratory is initiated. In addition, those who plan to initiate work in the lab must be familiar with the standard practices that apply as well.

## Acknowledgments

This Laboratory Biosafety Manual is the result of assessing the safety-management needs of a variety of laboratories that use biological materials at the University of West Florida. We would like to acknowledge and express our appreciation to all the researchers who contributed to this effort.

## Definitions

*Biohazardous Material* - any material known to harbor organisms or agents capable of infecting or infesting human or animal hosts or causing environmental harm if released.

*Bloodborne Pathogen* - an agent known to be transmissible through contact with human blood, such as the human immunodeficiency virus (HIV) or the hepatitis B virus (HBV).

*Infectious Agent* - a viable micro-organism, or its toxin, which causes or may cause disease in humans or animals, and includes those agents listed in 42 Code of Federal Regulations 72 or any other agent that causes or may cause severe, disabling, or fatal disease.

*Infectious Material or Substance* - any material which is known to contain a causative agent of human or animal disease.

*Nonindigenous Invader Species* - organisms that grow and live in an environment that is not their own (ie. zebra mussels in the great lakes).

*Pathological Waste* - organs, tissues, body parts other than teeth, products of conception, and fluids removed by trauma or during surgery or autopsy or other medical procedure, and not fixed in formaldehyde.

*Potentially Infectious (Biohazardous) Material* - any material, which may or is known to contain a causative agent of human or animal disease. All blood and body fluids fall under this definition since they are assumed to contain bloodborne pathogens and, therefore, potentially infectious.

*Principal Investigator/Lab Director* - the University of West Florida faculty member responsible for the research underway in the laboratory. For the purposes of this protocol, the Principal Investigator is

\_\_\_\_\_.

*Recombinant DNA Molecules* - molecules that are constructed outside living cells by joining natural or synthetic DNA segments to DNA molecules that can replicate in a living cell; or molecules that result from the replication of those described above.

*Sharps* - any metal object that can penetrate the skin including, but not limited to needles, scalpels, razor blades, exposed ends of dental wires, and other medical hardware.

*Universal Precautions* - a method of infection control in which all human blood and other potentially infectious materials are treated as if known to be infectious for HIV, HBV, or other bloodborne pathogens.

## Chapter 2 - General Information and Structure

### General Commitment to Safety

It is the objective of this laboratory, and its management to practice safety in science and to exercise all reasonable and prudent precautions generally accepted as research industry standards. Guidelines recommended by the Center for Disease Control (CDC) and National Institute of Health (NIH) for biosafety at level **BSL level 1** will be strictly observed and enforced by the laboratory director and management. At the conclusion of initial personnel training, each lab employee will sign a "commitment to safety statement" to be retained with the training records.

### Chemical Hygiene Plan (CHP)

The Laboratory Safety Standard requires employers to write and implement laboratory-specific [Chemical Hygiene Plans \(CHP\)](#). According to this regulation, a Chemical Hygiene Plan applies to all employers engaged in the laboratory use of hazardous chemicals.

The CHP is located in the lab.

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### Management Structure and Responsibility

Overall supervision of the **BSL level 1** laboratory is the responsibility of \_\_\_\_\_ . Access to the laboratory must be obtained from \_\_\_\_\_ or his designated lab manager.

**Oversight** This plan meets the quality standards for laboratory safety management as required by UWF-EH&S.

## Laboratory Access

1. The Principal Investigator or his/her designee authorizes access to the **BSL level 1** laboratory. Persons requesting to use the laboratory or equipment shall be advised of the potential hazards involved and shall follow all biosafety guidelines as presented in this manual.
2. Access to the **BSL level 1** laboratory is restricted when work with infectious agents is in progress, after hours, or when laboratory personnel are not available.
3. Persons at increased risk of acquiring infection or for whom infection may be unusually hazardous, should not be allowed to work in the **BSL level 1** laboratory. Included in this category are:
  - Children
  - Individuals who are immuno-suppressed, immuno-deficient, or undergoing immunosuppressive therapy.

## Personnel Training

1. Once a year all personnel working in the **BSL level 1** laboratory will be instructed by the Principal Investigator or Laboratory Manager on the special biological safety procedures to be used. Attendance at this session is mandatory. It is the direct responsibility of the Principal Investigator or Lab Manager, to initially instruct new employees of the safety procedures used in the laboratory. This includes a thorough review of the appropriate operating procedures of the laboratory.
2. EH&S conducts generalized Hazard Communication, Laboratory Safety, Personal Protective Equipment, and Bloodborne Pathogen training annually or upon request. All new lab employees and anyone who has not yet attended must attend this training. New employees must read a copy of the Biosafety Manual and associated documents prior to starting work in the laboratory. List this as one of the types of training that must be conducted on the Roster of Approved Personnel and Training Records ([appendix 3](#)).
3. New employees must exhibit competency in the biosafety practices prior to starting work in the laboratory. List this as one of the types of training that must be conducted on the Roster of Approved Personnel and Training Records ([appendix 3](#)).

## Visitors

1. Visitors may be permitted in the **BSL level 1** laboratory when accompanied by an employee approved for access.
2. Visitor admission into the **BSL level 1** laboratory will only be allowed with prior approval of the Principal Investigator.

3. Exposure to infectious agents and materials will be kept to a minimum and will only be allowed after the visitor demonstrates adequate knowledge on working safely with infectious agents and materials and is adequately protected from exposure.

## **Audit Management**

The Principal Investigator and/or Laboratory Manager will maintain the following records:

NOTE: It is recommended that all records are kept in the appendix sections of this manual.

1. Training records (signed/dated) are kept in the following location:

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See [Appendix 3](#) for template.

2. Housekeeping records (signed/dated) are kept in the following location

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See [Appendix 4](#) for template and [Chapter 5](#) for procedures.

- 3 Accident/injury reports (signed/dated) are kept in the following location

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See [Chapter 7](#) for procedures and Appendix 7 for form.

4. Preventative maintenance records on all equipment are kept in the following location

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See [Appendix 10](#) for template and [Chapter 5](#) for procedures.

# Chapter 3 - Laboratory Practices

## General Safety Procedures

1. Persons working in the **BSL Level 1** laboratory must be fully aware of the potential hazards to themselves and their co-workers.
2. Eating, drinking, and applying cosmetics are not permitted in the laboratory.
3. Mouth pipetting is strictly prohibited. All pipettes should have cotton-plugged tops and should be operated using a mechanical pipetting device.
4. Laboratory coats, gloves, and protective eyewear must be worn when working in the laboratory.
5. Non-experimental animals and plants are not permitted in the laboratory.

### *Potentially Infectious Material and Agents*

All potentially infectious material and agents will be received, stored, handled, and disposed of in accordance with the National Institute of Health (NIH)/Center for Disease Control (CDC) publication entitled [Biosafety in Microbiological and Biomedical Laboratories](#) (current edition). **Recombinant DNA Molecules**

All recombinant DNA molecules and associated host/vector systems will be received, stored, handled and disposed of in accordance with the [NIH Guidelines for Research Involving Recombinant DNA Molecules](#) (current Amendment).

Administrative oversight for compliance with this requirement is provided by the Biological Research Review Committee under the UWF -Office of the Contracts and Grants.

### *Nonindigenous Invader Species*

All nonindigenous invader species (NIS) will be received, housed, and handled in accordance with the Department of Interior (DOI), Fish & Wildlife Service Protocol for Evaluating Research Proposals concerning NIS, under the [Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990](#).

Administrative oversight for compliance with this regulation is provided by the EH&S Safety Officer.



## ***Personal Protective Equipment (PPE)***

Each Standard Operating Procedure (SOP) must list the appropriate PPE that laboratory personnel are required to wear. Refer to the Infectious Biological Agents and Recombinant DNA Guideline for more information on PPE. See [Chapter 4](#) and [Appendix 9](#) of the Laboratory Biosafety Manual for specific information on SOPs.

## ***Laboratory Practices***

1. All procedures are performed carefully to minimize the creation of splashes or aerosols.
2. The work areas should be kept clean and dust free to prevent contamination of samples and laboratory acquired infections.
3. Work surfaces should be decontaminated at least once a day and after any spill of viable material with 1 to 10 dilution of ordinary bleach solution or other appropriate disinfectants. The work surfaces should also be disinfected at least once a month when experiencing infrequent use.
4. All cultures, stocks, and other biohazardous wastes are decontaminated before disposal by an approved decontamination method, such as autoclaving. Materials to be picked up by HazMat are to be placed in a durable, leakproof container labeled with a biohazard sticker.
5. Only needle-locking syringes or disposable syringe-needle units are used for injection or aspiration of potentially infectious materials. Used disposable needles must not be bent, sheared, broken, recapped, removed from disposable syringes, or otherwise manipulated by hand before disposal.
6. Do not handle broken glassware directly by hand. The glassware should be removed by mechanical means such as a brush and dustpan, tongs, or forceps.
7. Place all potentially infectious materials in a container that prevents leakage during collection, handling, processing, storage, transport, or shipping.
8. Spills and accidents should be immediately reported to the Principal Investigator and the EH&S Safety Officer (2525).

## ***Biological Safety Cabinet Use***

The biological safety cabinet is the principal device used to provide containment of potentially infectious splashes or aerosols generated by many microbiological procedures.

1. The air flow markers are checked by lab manager every day, week, or year depending on how often biological safety cabinet is utilized to ensure airflow markers fall within the posted safe ranges before working in the hood. Airflow alarms are present on all cabinets.

- If airflow is incorrect, discontinue work and contact EH&S at 2525. Make sure that all biohazard materials are properly secured, and Notify the Principal Investigator or Laboratory Manager.
2. Before using the hood, disinfect it with 70% denatured ethanol so as to avoid accidental exposure to potentially infectious materials and to avoid contamination of cultures.
  3. All activities involving infectious materials must be conducted in biological safety cabinets. No work with infectious materials in open vessels will be conducted outside the cabinets.
  4. Any infectious agents that are centrifuged must be contained in screw cap tubes and the aerosol-barrier rotor caps must be used. The centrifuge container must be loaded and unloaded in the biological safety cabinet.
  5. Any waste generated in the biological safety cabinet must be decontaminated or autoclaved for disposal.
  6. The biological safety cabinet must be disinfected with 70% denatured ethanol as appropriate after each use.

### ***Treatment and Disposal Methods***

The following are various methods of disposal/treatment for different types of biohazardous waste. Choose those applicable to your job.

#### **Biohazardous Solids, Liquids, Sharps and Pathological Waste**

##### ***Autoclave (Steam Sterilization)***

Check that there are no standing liquids or hazardous chemicals. Place waste in a University standard autoclave bag; autoclave with bag open. After sterilization cycle, close and seal bag and put in biowaste container.

##### ***Disinfect***

Soak contaminated glassware in 1:10 dilution of household bleach (contains 5% sodium or calcium hypochlorite) to water or other suitable commercial disinfectant. Bleach must be made fresh daily. Following treatment, place the waste in an impervious container and label as uncontaminated glassware.

##### ***Biohazardous Solids***

If it is not feasible to autoclave or disinfect the contaminated glassware, plastics or disposables, place in an impervious container such as a 5-gallon pail. A fluorescent orange or orange-red label that has the biohazardous symbol in a contrasting color must be affixed to the container. Put in bio waste room for pick-up.

### *Biohazardous Regulated Sharps*

Place the sharps in an impervious 5-gallon pail (available from EH&S). A fluorescent orange or orange-red label that has the biohazardous symbol in a contrasting color must be affixed to the container. Be sure to label the container with the word "sharps". Place the pail in the biowaste pick up room. Smaller sharps containers can be accumulated in the same 5-gallon pail.

### *Biohazardous Liquids*

Treat biohazardous liquids (> 1 gallon) with 1:10 dilution of household bleach to waste. Once treated, the liquid can be poured down the sanitary sewer drain with copious amounts of water.

Dispose of biohazardous liquids (< 1 gallon) by pouring down the sanitary sewer drain with copious amounts of water. Chemically-contaminated blood is dealt with on a case by case basis. Contact EH&S at 2525 for more information.

### *Pathological Waste*

Place waste in a 5-gallon bucket and securely seal the lid. A fluorescent orange or orange-red label that has the biohazardous symbol in a contrasting color must be affixed to the container. Place bucket in Bio-waste Room for pick-up.

For further information see the [Laboratory Refuse Collection Poster](#).

## Chapter 4 - Specific Operating Procedures

Specific procedures for individual operations can be found in \_\_\_\_\_'s lab. Safety precautions should be noted for each procedure.

# Chapter 5 - Equipment and Facility Management

## Equipment Care and Use

### Autoclave Quality Control

1. An autoclave must be available for the **BSL Level 1** laboratory and must only be operated by personnel who have been properly trained in its use.
2. Improper sterilization could result in laboratory personnel or the community at large being exposed to potentially infectious agents. Thus tests for sterility should be conducted at least once every six months with spore strips or other biological indicator ampoules. Tests for sterility are conducted by Michael Cochran, Building 58 Laboratory Technician.
3. Each autoclave load should be monitored. Temperature, length of cycle and responsible person should be noted and a quality control log kept. The autoclave cycle must be programmed to provide at least 30 minutes at peak temperature (usually equates to a 1 hour full cycle).
4. Heat resistant gloves must be available and used when unloading autoclave.

### Bench Tops

1. Bench tops should be impervious to water and resistant to acids, alkalis, organic solvents, and moderate heat.

### Centrifuges

1. Tubes should be inspected for cracks, bubbles and chips before use. Follow manufacturer's recommendations for maximum safe operation speeds for tubes and rotors.
2. Aerosol-free (sealed) centrifuge buckets or rotors are required for all centrifuging of infectious specimens and bacteria. Only the correct size tubes should be used in any centrifuge bucket.
3. Buckets should be kept clean and free of broken glass and plastic.
4. Once samples to be centrifuged are prepared, load tubes into buckets inside the biological safety cabinet and seal carefully before moving to centrifuge.
5. After centrifugation, buckets should be opened in a biological safety cabinet to prevent exposure from aerosolized particles. Always visually inspect rotor for signs of tube leakage prior to opening buckets.
6. Decontaminate buckets after use.

## Equipment Maintenance

1. Autoclaves, centrifuges, biological safety cabinets, and fume hoods should undergo regular preventative maintenance by qualified personnel.
2. The airflow must be regularly checked on the biological safety cabinets and filters changed by qualified personnel. If cabinets are not functioning correctly, EH&S must be contacted to perform maintenance operations.
3. Preventative maintenance records should be kept on all other laboratory equipment.
4. Vacuum lines should be protected by a disinfectant trap (an aspirator suction flask containing bleach) and a high efficiency particulate air (HEPA) filter between the vacuum port and the aspiration flask to prevent pathogens from entering the vacuum system.

## Cleaning and Decontamination

### Housekeeping

1. General Laboratory Procedures
  - All areas of the **BSL Level 1** laboratory must be kept clean and orderly.
  - Dirt, dust and clutter are safety hazards and are not consistent with acceptable biological research.
  - Stock solutions of disinfectants should be maintained at each bench top and biological safety cabinet work area:
    1. Bleach, Fresh, 10% sodium hypochlorite
    2. Ethanol, 70% solution
    3. Other appropriate disinfectants
  - The Lab Manager or other laboratory personnel should conduct periodic inspections of the **BSL Level 1** Laboratory. A copy of a BL1 Recombinant / Infectious Agent Laboratory Audit Checklist can be found on EH&S's homepage for the laboratory's use. EH&S recommends that inspections be performed and recorded every three months. Records of these inspections should be kept in [Appendix 4](#).

# Chapter 6 - Radiation Management

## Use of Radioactive Isotopes

All personnel working with radioactive materials should be instructed in the use of necessary safeguards and procedures and all visitors should be informed of pertinent precautions to be taken.

- All personnel and visitors working with radioisotopes should use appropriate radiological safety devices and protective clothing. This includes devices such as:
  1. Lead or Plexiglas© / Acrylic Shielding
  2. Radiation monitoring devices (whole body badge and finger rings)
  3. Radioactive spill decontamination supplies (spill kit)
  4. Lab coat and disposable gloves
- The radiation safety coordinator should ensure that every visitor has proper authorization and should recommend that no unnecessary visit to areas involved with radioactive use be made.
- Radioactive material should be prevented from leaving the jurisdiction of the radiation safety coordinator under circumstances that may subject other personnel to radiation in excess of the limits prescribed by the EH&S Radiation Safety Service.
- All areas that are to be used for radioactive work must be clearly labeled with the appropriate radiation hazard signs. Contact EH&S, Radiation Safety Service at 2525 for further information.
- Measures should be taken to ensure that no modification of equipment or installations that might lead to unforeseen radiation hazards is made without provision of the appropriate safeguards.
- Measures should be taken to ensure that no radioactive material is used by unauthorized personnel who do not have the required training to use the radioisotopes.
- The radiation safety coordinator must keep concise and up-to-date records of usage, inventory, and disposal of radioisotopes.
- Any accident, radioactive material spill, personnel or area contamination, unusual incident, or personal injury, must be reported to the radiation safety coordinator, and the Authorized User or Lab Manager.
- Whenever personnel are working with radioactive isotopes, the area must be monitored with a Geiger counter and the person should wear a radiation badge or ring. **Note: A Geiger counter will not detect H-3 should it be in use.**
- Areas where radioactive isotopes are used should be routinely monitored by systematic swipe sampling and sample analysis via a scintillation counter.
- Shielding
  1. Radiation emitted from isotopes must be shielded away from the user.
  2. When working with  $^{32}\text{P}$ , the radiation may be shielded behind > 3/8 inch Plexiglas© or acrylic shield.

3. When working with  $^{125}\text{I}$ , lead foil or sheets must be used to shield the worker from radiation.
4. Contact EH&S at 2525 for any questions regarding shielding.

### **Disposal of Isotopes after Usage**

When working with potentially infectious agents, any radioactive reagents coming in contact with the biohazard must first be immersed in bleach prior to being discarded into a radioactive waste bag or container. **Note: Do Not Use bleach with  $^{125}\text{I}$  as it produces a volatile form of the isotope. Use a lysol detergent.**

**It is imperative that all potentially infectious waste be disinfected prior to disposal.**



## Chapter 7 - Emergency Management

(On-site emergency assistance can be obtained by dialing 911.)

### Accidental Exposure to an Infectious Agent or Material

**BSL Level 1** laboratory personnel who are accidentally exposed to a potentially infectious agent or material should report the incident as soon as possible to the Principal Investigator and the EH&S Biological Safety Officer. The three routes of occupational exposure are percutaneous (e.g., a needle stick or cut with a sharp object), ingestion (e.g., aerosols) and absorption (contact of mucous membranes or skin). Absorption will occur by skin contact especially when the exposed skin is chapped, abraded, or afflicted with dermatitis or the contact is prolonged or involving an extensive area. The Principal Investigator will see that necessary treatment or health monitoring is obtained without delay. The Risk Management 101A Form (Employee Accident or Illness Report) must be completed for all workplace injuries and illnesses. See the [Supervisors Guideline for Workplace Health](#).

[NOTE: Occupational exposure to an infectious agent or material can be avoided or minimized through the use of controls. Training and other work practice controls such as standard operating procedures are important to minimize the risk of a percutaneous exposure. To avoid ingesting the material, all work that may create an aerosol must be done in a biological safety cabinet. Personal protective equipment such as gloves and safety goggles must be worn to avoid contact of the infectious agent or material with your skin or eyes.]

### First Aid

In the event that a substance enters the mouth, eyes, lungs, or penetrates/comes in contact with the skin follow the instructions below and seek immediate medical attention.

1. Remove all contaminated clothing and place it in the biological safety cabinet.
2. Warn others of the biohazard.
3. Take a shower or rinse the exposed area with disinfectant.
4. Report the spill to the Principal Investigator or Lab Manager.
5. Go to the UWF Health Services Building (67) to obtain emergency care.

**Persons requiring immediate emergency care should seek it. Preparation of paperwork will be secondary to obtaining prompt medical attention.**

6. Post accident serum samples for diagnosis of possible laboratory acquired infection will be coordinated by the Principal Investigator or Lab Manager.
  - The Principal Investigator or Lab Manager will accompany injured personnel to receive a medical evaluation and complete an incident form.
  - The healthcare provider will make an initial assessment of risk.
  - UWF will provide follow-up and counseling on risk of infection and its consequences.
7. Personnel working in the **BSL Level 1** laboratory, or who have performed duties in the past 6 months in an area containing infectious materials, will attempt to notify their supervisors before seeking medical attention if they:
  - Develop a fever greater than 100°F; or
  - Display initial onset symptoms consistent with contraction of the infectious agent used in the laboratory.

### **Spills inside biological safety cabinet**

The occurrence of a spill in a biological safety cabinet poses less of a problem than a spill in an open laboratory as long as the spilled materials are contained in the biological safety cabinet. Decontamination of the work zone can usually be effected by direct application of concentrated liquid disinfectants along with a thorough wipe down procedure. **Contact EH&S after a major spill to determine the necessary decontamination methods.**

1. Alert people in immediate area of spill.
2. Chemical decontamination procedures should be initiated immediately while the biological safety cabinet continues to operate.
3. Wear protective gloves, cover spill with paper towels or other absorbent materials.
4. Wearing protective gloves, spray or wipe walls, work surfaces, and equipment with an appropriate decontaminating solution such as 10% bleach solution or 70% ethanol.
5. Allow a 20-minute contact period.

6. Wearing protective gloves use paper towels to wipe up the spill, working from the edges into the center.
7. Dispose of spill clean up material as you would other biohazardous waste.

### **Spills outside biological safety cabinet**

Biological spills outside biological safety cabinets will generate aerosols that can be dispersed in the air throughout the laboratory. Appropriate protective equipment is particularly important in decontaminating spills involving microorganisms that require **BSL Level 1** containment. This equipment includes lab coat with long sleeves, back-fastening gown or coveralls, disposable gloves, disposable shoe covers, and safety goggles and mask or full-face shield. Use of this equipment will prevent contact with contaminated surfaces and protect eyes and mucous membranes from exposure to splattered materials.

#### **Minor Spills (less than 10 ml and generating little aerosol) on equipment, laboratory benches, walls, or floors:**

1. Close laboratory doors and post warning signs to prevent others from entering the laboratory.
2. Thoroughly wash hands and other apparently contaminated areas with soap and water. Put on clean disposable gloves.
3. Cover the spill area with paper towels soaked in appropriate decontamination solution such as 10 % bleach solution or 70% ethanol solution.
4. Wipe up the spill with the soaked paper towels and place the used towels in an autoclave pan and autoclave.
5. Pour decontaminating solution around and on the area of the spill. Let stand for 20 minutes then wipe up with paper towels. Place gloves and paper towels in autoclave pan and autoclave.
6. Wash hands and other apparently contaminated areas again with soap and water.
7. Remove all PPE immediately upon leaving the work area and as soon as possible if overtly contaminated. Contaminated PPE will be **DISPOSED** of as biohazardous waste or decontaminated.

#### **Major Spills (more than 10 ml or with considerable aerosol):**

1. Close laboratory doors and post warning signs to prevent others from entering the laboratory.
2. Leave the biological safety cabinet operating and cultures inside cabinet.
3. Wash hands and other apparently contaminated areas with soap and water.
4. Report the accident to the Principal Investigator and to the Biosafety Officer at 2525.

5. If personal clothing is contaminated, remove all outer clothing and place it in the autoclave or container for autoclaving. Put on clean garments.
6. Leave the laboratory for 20 minutes to allow dissipation of aerosols created by the spill.
7. Upon returning to the laboratory to start decontamination, check to see if laboratory doors are closed and appropriate signs are displayed. Put on gloves and other protective equipment as previously mentioned above.
8. Pour a decontamination solution around the spill and allow this solution to flow into the spill. Paper towels soaked with decontamination solution may be used to cover the area. Do not pour decontamination solution directly onto the spill in order to avoid additional release of aerosols.
9. Let decontamination solution - microorganism mixture stand for 20 minutes or longer to allow adequate contact time.
10. Transfer all contaminated materials to autoclave pan, cover with suitable cover, and autoclave according to standard directions.
11. Remove gloves and other contaminated garments and place them in an autoclave container for autoclaving.
12. Thoroughly wash hands, face, and other apparently contaminated areas.

**Special care in decontamination may be necessary. The Principal Investigator and/or the Biosafety Officer may require the collection of sample cultures to determine that the area has been effectively decontaminated.**

## **Fire Fighting Procedures**

**Personal safety is each worker's primary concern in the event of fire**

1. Upon learning of the threat of fire within the building, laboratory personnel will, to the extent possible:
  - Turn off all gas burners, biological safety cabinets, electric motors, and other electrical equipment.
  - Place containers of infectious materials into autoclaves, incubators, refrigerators, freezers or other storage areas.
  - Leave the laboratory as quickly as possible using designated fire evacuation routes.
2. Personnel should be trained by EH&S in the operation of fire extinguishers.

## **Reporting and Recordkeeping**

Accidents and spills occurring outside the biological safety cabinets will be reported and accident report forms will be filed under [Appendix 7](#).

## Appendix 1

### Emergency Call List

Name	Work Phone	Home Phone
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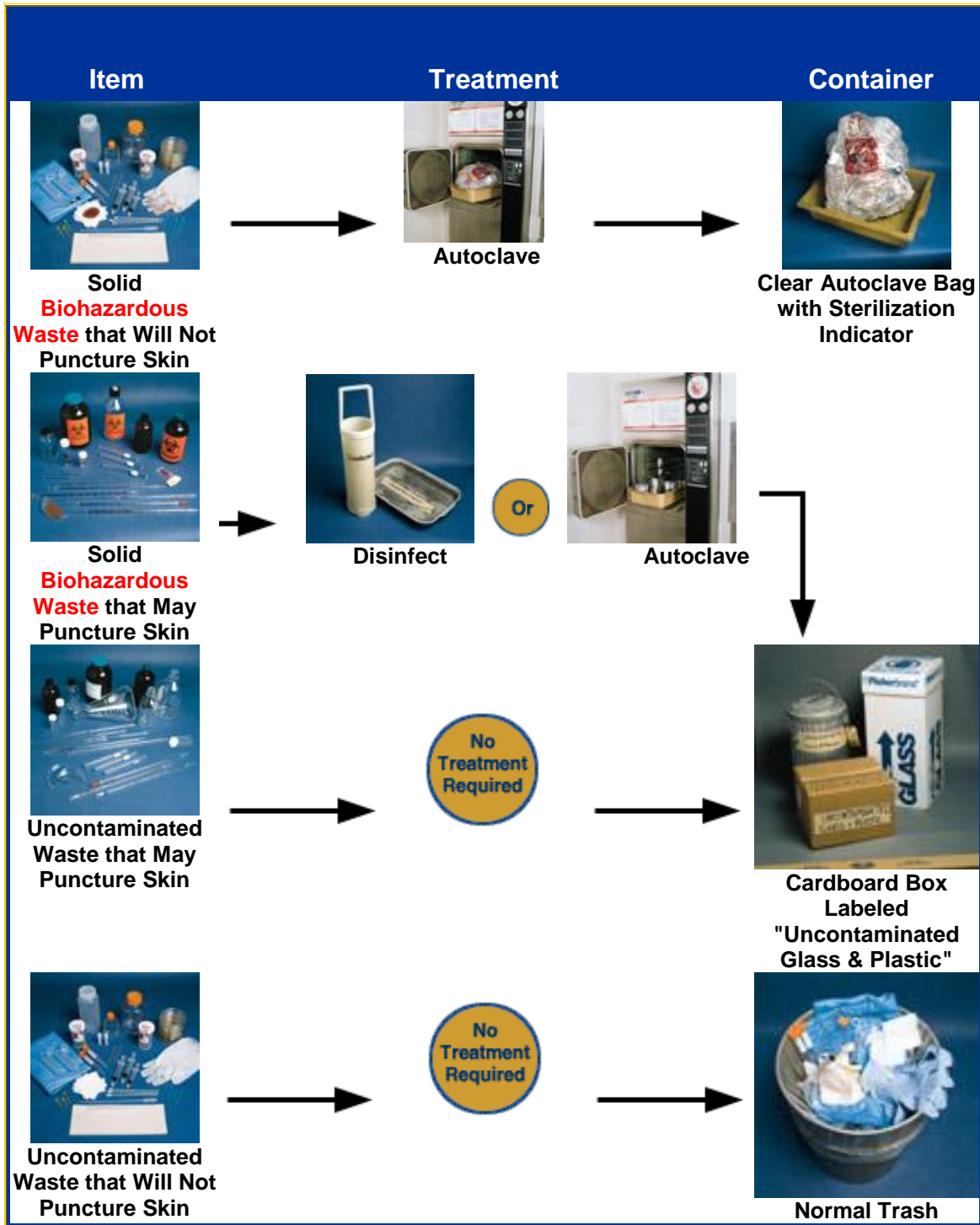
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### Lab personnel

Name	Work Phone	Home Phone
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# Laboratory Refuse Collection



**HAZMAT Staff Pick-up – EH&S 474-2525**

**Item**

**Container**



**Biohazardous Sharps**  
(Syringe with Needle, Scalpel, etc.)



Labeled White 5 Gallon Pail or Red Sharps Container\*



**Biohazardous Waste** that Will Not Puncture Skin

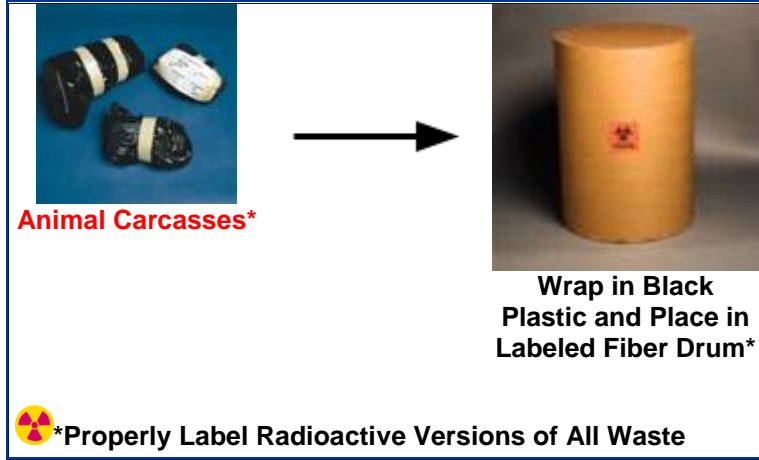


Labeled White 5 Gallon Pail or Biohazard Box with Red Bag\*

**Pathological Waste**  
(Human Organs and Tissues, etc.)



Labeled White 5 Gallon Pail\*



Contact EH&S at 474-2525 for copies of this poster or information