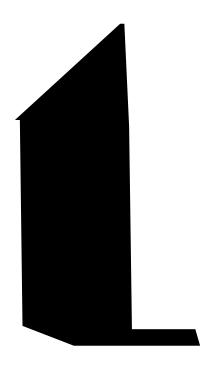
Procedure:



- environmental or agricultural impact, and toxins derived from such organisms. Research projects are not covered by this manual. Please see your division director or EH&S department if you are doing research at WNC facilities. It may be necessary to augment this manual depending on the biological agents used.
- In some cases, WNC faculty and students may work with biological agents off-campus. In such instances, WNC personnel should use the manual for guidance; but they must comply with the Biosafety Program of the off campus facility.

B. Applicable Regulations and Guidelines

- 1. Centers for Disease Controls and Prevention (CDC) and the National Institutes of Health (NIH): Biosaftey in Microbiological and Biomedical Laboratories (BMBL).
- 2. Occupational Safety and Health Administration (OSHA): Bloodborne Pathogens.
- 3. Title 42 CFR, Part 73. (Biological select agents and toxins)
- 4. Title 9 CFR. Part 121.
- 5. Title 7 CFR, Part 131. (Biological select agents and toxins)
- 6. U.S. Patriot Act

Section 2: Responsibilities

The responsibility for biosafety at WNC is a team effort requiring the direct involvement of the WNC EH&S Advisory Committee (EH&SAC), the Environmental Health and Safety Department (EH&S), the Nursing and Allied Health Division, the Liberal Arts Division, laboratory supervisors, other faculty and staff and laboratory workers including students.

A. WNC EH&S Advisory Committee:

- 1. Develop biosafety policies applicable to WNC activities, including work practices, biohazardous waste, and medical surveillance of personnel.
- 2. Review and approve new research proposals in accordance with CDC/ NIH guidelines.
- 3. Investigate significant violations of WNC biosafety procedures or policies, and significant

2.	Ensuring that all laboratory personnel receive general biosafety training conducted by EH&S or their division as well as specific training on the hazards, procedures, and

environment external to the laboratory from exposure to infectious materials, is provided by a combination of facility design and operational practices. The purpose of containment is to reduce exposure of laboratory workers and other persons, and to prevent escape int

An example of an enclosed container is the safety centrifuge cup, which is designed to prevent aerosols from being released during centrifugation.

Safety equipment also includes items for personal protection such as gloves, coats, gowns, shoe covers, boots, respirators, face shields, and safety glasses. These personal protective devices are often used in combination with biological safety cabinets and other devices which contain the agents, animals, or materials being examined. In some situations in which it is impractical to work in biological safety cabinets, personal protective devices may form the primary barrier between

D. Housekeeping

The work site shall be maintained in a clean and sanitary condition. All equipment, environmental enclosures and working surfaces shall be properly cleaned and disinfected after contact with blood or other potentially infectious materials.

1.

- The following requirements address waste disposal of a sterile, non-hazardous nature
 in the Biology and Chemistry labs by Facilities' personnel, it may have useful
 applications within the Nursing and Allied Health Division. While unlikely, as
 Nursing has its own waste disposal service, if Nursing wishes to adopt any, all or
 none of this policy, they are welcome to climb aboard and do so.
 - Biology and Chemistry Faculty Responsibilities
 - i. Standard viable microbiological specimens, e.g., streaked microbiological material on slants, butts, agar plates, et al, that are to be steam-sterilized to render them non-hazardous and that contain no appreciable amounts of hazardous materials should be steam-sterilized in clearly marked red, orange or otherwise colored biohazard bags for no less than 30 minutes (and preferably for 60 minutes).
 - ii. Inside the red, orange or otherwise colored biohazard bag should be a disposable test tube with autoclave tape wrapped around it containing the following inked information: type of waste, load number (from sterilizer log that matches up with bio-indicator, e.g., 2015-03-01, year (2015), semester old style (01 = Spring; 02 = Summer and 03 = Fall) and load number), room (e.g., 201 ASP), date of sterilization, and "WNC" with the faculty person's name.
 - a. Suitable alternatives to using the test tube with autoclave tape include the use of either:
 - i. an indelible marker to write the same information on the outside of the bag or
 - ii. an appropriate WNC EH&S-approved (and provided) tag or adhesive label that contains identical information
 - iii. Upon removal from the sterilizer, the red, orange or otherwise colored biohazard bags are to be

- a. An acceptable variation is to place one or two red, orange or otherwise colored biohazard bags suitably sterilized into the trash bag, twist the neck of the bag and flip it back over the biohazard bags to double the thickness of material and tie the new neck off.
- b. While the knot is the preferred method of securing the red, orange or otherwise colored biohazard bag, "twist-ties" or plastic ties of a substantial nature may be used, as well.
- v. The trash-bag-secured red, orange or otherwise colored biohazard bag may be safely disposed of in the non-hazardous trash. If need be, the trash receptacles may be [re-]labeled "soft trash" for ease of identification.
- vi. If the autoclaved material contains glass it shall be placed in a sealed labeled plastic 5 gallon container (e.g., Home Depot Homer bucket) or the like to minimize injury to custodial/ waste management personnel.

vii.

iv. The responsible Faculty Lab Safety Supervisor will examine the bag[s] in question to confirm or reject safeness of/for disposal of the items as quickly as is reasonable, e.g., during summer, many faculty are not on campus or in the immediate vicinity for a quick inspection of the item[s], so it may take several days for the inspection to occur.

F. Biosafety Levels

- There four bio-safety levels, which consist of combinations of laboratory practices and techniques, safety equipment, laboratory facilities appropriate for the operations performed and the hazard posed by the infectious agents, and for the laboratory function or activity.
 - a Biosafety Level 1: Practices, safety equipment, and facilities are appropriate for facilities in which work is done with defined and characterized strains of viable microorganisms not known to cause disease in healthy adult humans. Bacillus subtilis, Nægleria gruberi, and infectious canine hepatitis virus are representative of those microorganisms meeting these criteria. Many agents not ordinarily associated with disease processes in humans are, however, opportunistic pathogens and may cause infection in the young, the aged, immunodeficient or immunosuppressed individuals. Vaccine strains which have undergone multiple in-vivo passages should not be considered virulent simply because they are vaccine strains:
 - b. Biosafety Level 2: Practices, equipment, and facilities are applicable to clinical facilities in which work is done with the broad spectrum of indigenous moderate-risk agents present in the community and associated with human disease of varying severity. With good microbiological techniques, these agents can be used safely in activities conducted on the open bench, provided the potential for producing aerosols is low. Hepatitis B virus, the Salmonellae, and Toxoplasma spp. are representative of microorganism assignment to this containment level. Primary hazards to personnel working with these agents may include accidental autoinnoculation, ingestion, and skin or mucous membrane exposure to infectious mat

Proper handling and disposal of biohazardous waste is necessary to prevent infection of personnel (laboratory workers, custodians, laboratory visitors, etc.) and release to the environment. OSHA and county regulations require that biohazardous waste be properly labeled, stored, and disposed.

A. Labeling of Biohazardous Waste

- At a minimum, all biohazardous waste must be labeled with the universal biohazard symbol. Additional information such as the type of waste (such as "sharps", or "liquid waste") and origin of the waste is recommended.
- 2. All biological or chemical waste including <u>every</u> container or bag must be tagged with a completed orange WNC chemical waste tag prior to being collected by WNC EH&S.

a. Liquid biohazardous waste includes all blood and liquid waste from humans or

- b. Safety goggles face shield is strongly recommended to avoid splashes to the nose and mouth
- c. Lab coat or smock to protect clothing and body
- d. Absorbent pads
- e. Disinfectant appropriate for the agents used in the laboratory

f

- 6. Place absorbent pads over the spill (to absorb liquid), then place a second layer of disinfectant soaked absorbent pads over the spill.
- 7. Pour additional disinfectant around the spill, being careful to minimize ærosolization, and work from the periphery toward the center, ensuring thorough contact of the spill with the disinfectant. Disinfect all items in the spill area.
- 8. Allow a minimum of 20 minutes contact time (or as directed by manufacturer's directions) with the disinfectant.
- 9. Wipe down all equipment, tools, etc. with disinfectant.
- 10. Place contaminated items in an appropriate container (biohazard waste bag, sharps container, or autodayable pan with lid for reusable items) for autodaying.
- 11. Remove protective dothing and place in a biohazard waste bag for autodaving.
- 12. Thoroughly wash hands, forearms, and face with soap and water. It is recommended that deanup personnel shower as soon as possible.

D. Biohazardous Spills inside a Centrifuge

1. Clear the area of all personnel and allow aerosol to settle (usually a minimum of 30 minutes) before re-