EXERCISE 1 INTRODUCTION TO THE MICROBIOLOGY LABORATORY Part I Your Microbiology Lab Area

Student Learning Objectives

- 1. Identify the location of specific structures and instruments in the lab.
- 2. Demonstrate knowledge of safety procedures in lab.
- 3. Identify the proper function of lab instruments and equipment.

Familiarize yourself with your surroundings in the lab.

Draw a map and identify where all the following below are located. Identify the function of each as applicable.

- 1. Entrance and Exits
- 2. Fire Extinguishers
- 3. Refrigerators (media, cultures, and reagents)
- 4. Incubators
- 5. Sinks
- 6. Paper towels
- 7. Trash for non-infectious waste
- 8. Biohazard Bins for infectious waste
- 9. Sharps, broken glass waste boxes
- 10. Trays and baskets for used media culture tubes
- 11. Disinfectant bottle
- 12. Deionized/distilled water carboy (container)
- 13. Water baths to keep media warm
- 14. Bunsen burners and strikers/lighters
- 15. Tube racks in desk cabinet
- 16. Slide rack and stainless steel staining bowl
- 17. Forceps or staining tongs, bibulous paper
- 18. Water wash bottle
- 19. Inoculating needle and loop
- 20. Immersion oil bottle
- 21. Digital electronic scale and weighing boats/paper
- 22. Hot plates, magnetic stirrers, and stir bar retrievers
- 23. Spatulas, test tubes, closures, coffee cans
- 24. Sterile toothpicks
- 25. Sterile Swabs
- 26. Labeling Tape (color coded)
- 27. Cabinets: Media, graduated cylinders, Funnels, beakers
- 28. Microscopes and slides, lense cleaning paper

29. Petri Dishes 30. Autoclave

Fill in the table below with the necessary information

Structure/Instrument	Function

Identification of Equipment Use and Function

Structure/Instrument	Function

Identification of Equipment Use and Function (continued)

Part II Safety in the Microbiology Laboratory

Microbiology laboratories are unique environments in that the personnel routinely work with infectious agents. The two areas of safety concern are Biohazards (infectious agents) and Environmental hazards (such as fire, caustic chemicals, etc.)

Cultures of Infectious Agents

In these laboratory exercises, you will work with potential pathogenic bacteria (see lab book safety section for detail). None of the organisms used are highly virulent. However, any organism that is ingested or injected into the body has the potential to be pathogenic. This is especially true in immunocompromised individuals, including pregnancy. To prevent the spread of infection to yourself, coworkers, or family, the following rules must be adhered to:

- 1. Wipe down your work space with a bactericidal disinfectant or 10% bleach when you first enter the laboratory before you begin work and again after you complete the exercise before you leave the room. Clean the entire lab bench, removing all dust and thus any dust-borne microorganisms.
- 2. Periodically wipe down the other counters and around sinks with bleach also. This is your lab, so take responsibility for its cleanliness and neatness.
- 3. Wash your hands thoroughly before leaving the laboratory and anytime during lab deemed necessary.
- 4. Wear gloves if there are any cuts or breaks in the skin or if the procedure is likely to result in spillage. If you do wear gloves you still must wash your hands after they are removed and before leaving the lab.
- 5. Do not eat or drink in the laboratory. No food, gum, or drink are allowed in the laboratory. Do not lick labels, chew pencils, or put any objects in your mouth.
- If you spill a culture (including small drips), cover the contaminated area with a paper towel, pour disinfectant or (10%) bleach on top, and wait for at least 5 minutes before wiping up. This will help to prevent aerosols.
- 7. Long hair must be pulled back and tied to prevent contact with bacterial cultures.
- 8. A laboratory coat must be worn while in the laboratory. It must not be worn outside the laboratory in public areas. Remove the laboratory coat when you leave the laboratory. When removing the lab coat, turn it inside out, fold it over, and store it in a plastic bag to wear for the next lab period. Wash this in hot water using detergent as needed, or at least once a week.
- 9. Infectious waste (discarded Petri dishes, media, etc.) will be autoclaved. Place in the appropriate place as directed by the instructor. Non-glass items, such as the petri dishes, go in the biohazard containers with the orange bags. All contaminated culture tubes that are to be reused go in the plastic baskets/tubs that are then autoclaved. <u>Please remove any tape and/or writing before placing in the tubs</u>. Do not put these reusable glass items in the sharps containers. Please place all old cultures in these receptacles as soon as you have completed the work. Do not let old cultures stack up in the incubators or refrigerators.

- 10. All disposable contaminated glass items such as test tubes and glass slides go in the sharps container. When syringes and needles are used, do not recap the needles. Let your instructor know about it.
- 11. Please do not put noninfectious waste such as paper towels that you have used to dry your hands and other papers into the infectious waste containers. The disposal of infectious waste requires special handling such as autoclaving.
- 12. Although some papers and pencils are necessary to record laboratory observations, keep the workstation as free of personal items as possible. Do not lay a petri dish or test tube on your notebook and risk contaminating your notebook. Replace any reagents or equipment used during the lab to the proper place. It is important to avoid clutter and possible laboratory accidents.

Bunsen Burners

- 1. Watch out for the flames. Keep your hair and clothing out of the flames.
- 2. Do not look into the mouth of the burner as you are lighting it.
- 3. Make sure the gas supply is turned completely off when you leave your station.
- 4. Do not EVER leave your Bunsen burner on unattended.

Dress Code

No open-toed footwear (no flip-flops, sandals, etc.) allowed in lab. You may not attend lab if you do so. Avoid wearing loose clothing which can become a flammable hazard. <u>Dress</u> comfortably and professionally, with safety in mind.

Note the location of the following and what to do in case of fire or emergency:

- 1. Fire Alarm
- 2. Fire Extinguishers
- 3. Emergency Exits
- 4. Eye Wash Station

Lab Activity:

- 1. Take the lab safety quiz
- 2. Sign the lab safety contract
- 3. Get to know your lab partners at your table (name, and something unique)