GENERAL GUIDELINES FOR LABORATORY SAFETY

BIOSAFETY

In this course we will be working exclusively with standard laboratory strains of *Escherichia coli* from the classic "K12" strain lineage, and with natural isolates of the common soil bacterium *Pseudomonas fluorescens*.

All lab work is conducted under Class I Biocontainment practices. These include:

- No eating, drinking, or smoking are allowed in the laboratory.
- Do not pipette by mouth.
- Notify the TA or the instructor if you have an open cut or burn.
- Notify the TA or instructor of any spilled cultures.
- After each lab period wipe your bench with disinfectant and wash your hands before you leave.
- All cultures and materials contaminated with cultures should be so identified with the approved biohazard warning logo.
- Do not pour liquid cultures down the drain; do not throw agar plates into the ordinary trash.
- Agar plates (only agar plates) are placed in a designated biohazard bag for autoclaving. Flasks and tubes containing cell suspensions are placed in the autoclaving pan provided. Pipettes, swabs, kimwipes and micropipette tips are collected in appropriate biohazard containers for autoclaving. The prep staff will autoclave and discard these materials after each lab.

Anyone who reads the news will be aware that *E. coli* is regularly identified as the causal agent in a variety of serious clinical infections (urinary tract infections, neonatal meningitis, enterohemorrhagic colitis, etc.). The *E. coli* strains associated with this distressing array of syndromes all have multiple genes for specific "pathogenicity factors" that allow them to cause disease in otherwise healthy humans. Strains in the K12 lineage do not have pathogenicity factors, so they are not considered human pathogens.

CHEMICAL SAFETY

- Several of the laboratory exercises involve mildly hazardous chemicals. The nature of the hazards will be identified and the necessary precautions described in the lab handouts and in pre-lab lectures. Read and understand all cautionary notes in the written lab handouts before coming to class. Do not begin work until all questions regarding safe handling and disposal of chemicals have been answered by the TA or the instructor.
- Safety goggles are provided in your lab drawer. Wear them whenever you are directed to do so by the lab handout or the instructor.
• Know the location and use of the eye wash fountain and safety shower.

• Hazardous chemicals are never put down the drain or thrown in the ordinary trash. Appropriate waste containers will be available in the lab.

ADDITIONAL

• The ultraviolet light in the biosafety hood will cause severe burns to exposed skin and damage your eyes if viewed directly. The glass window of the hood offers adequate protection for your eyes. Don’t try to get a midwinter tan by exposing yourself to the UV light. It is more powerful than the UV lamps at your tanning parlor.

• **Bunsen burners are fire hazards. Turn them off whenever you are not using them.** Know the location of the fire extinguisher and know when and how to use it. The extinguisher will be demonstrated in lab.

• Lab Attire: You must wear a lab coat at all times in the lab. Your legs must be covered (no shorts) and you must wear closed-toe shoes.