

LABORATORY SAFETY GUIDELINES

Biology 220

BIOSAFETY CONCERNS

This laboratory deals with the culture and identification of microorganisms. All microorganisms are classified according to what are called Biosafety Levels (BSL). There are four (4) level outlined in the BSL guidelines (www.CDC.gov).

- BSL-1:** Well-characterized agents not known to consistently cause disease in immunocompetent adult humans, and present minimal hazard in laboratory personnel and/or the environment.
- BSL-2:** Agents that pose moderate risk to laboratory personnel and/or the environment if not properly handled.
- BSL-3:** Indigenous or exotic agents that can cause severe or lethal infections through an airborne exposure route. There are available vaccines or effective therapies for these agents.
- BSL-4:** Dangerous and exotic agents that pose a significant risk of lethal infections through airborne or unknown transmission route. There are no known vaccines for these agents.

Please note that nowhere in the above guidelines does it say that any agent is completely harmless. Individual susceptibilities vary to any given agent and as such only generalizations can be made as to the safety of a microorganism. As a rule of thumb an organism that is classified as BSL-1 typically poses no risk to a healthy individual.

While model organisms can be chosen that are all BSL-1 level organisms, it is still possible for laboratory procedures to lead to the cultivation of BSL-2 level strains. The world surrounding us is full of BSL-2 level organisms, and any culturing activity can lead to individual cultures of these microbes. These colonies are of little consequence or dangers as long as proper laboratory techniques are followed.

Please note that the above discussion pertains to healthy adult individuals. If your immune system is not normal (HIV infection, pregnancy, steroid use are common examples) it is your responsibility to inform me after class and provide documentation, if needed. Any laboratory exercises that pose a risk can be evaluated and alternative activities devised, though only in the case of acknowledged prior concerns.

GENERAL LABORATORY RULES

- RULE #1:** No eating or drinking is permitted in the laboratory. Nor is it permissible to bring opened or unopened beverage or food containers into the laboratory.
- RULE #2:** No loose jewelry (necklaces or bracelets) or loose hair below the shoulders.
- RULE #3:** No open-toed shoes in the laboratory.
- RULE #4:** No blocking of passage between or around workstations with personal possessions (i.e. book bags, purses, or coats).
- RULE #5:** NO Horse-Play!
- RULE #6:** Students must wash their hands with soap and water prior to beginning work and before leaving the laboratory.
- RULE #7:** Students must refrain from touching their faces during experimental work (i.e. applying make-up, scratching and itch, etc.)
- RULE #8:** Gloves are available for your use, though not required, unless informed to the contrary by the instructor.
- RULE #9:** Students must never leave materials unattended (i.e. open flames, culture plates, inoculating loops, etc.)
- RULE #10:** Students are to be aware of the location of the biohazard waste containers, sharps collection container, eyewash station, fire blanket, nearest exit, and all other relevant safety materials; as described by the instructor.
- RULE #11:** Students will properly dispose of all wastes as instructed by the instructor.
- RULE #12:** Students will not attempt to remove ANY material from a waste container.
- RULE #13:** Students will disinfect their lab space prior to commencing work and again before leaving the laboratory.
- RULE #14:** Students will listen to the instructor's directions and follow them as provided, asking for clarification when unclear about any aspect of the procedure.
- RULE #15:** Students will report any spills or problems to the instructor.

The above rules are absolute and will be enforced. Any breaking of the above rules will result in your immediate removal from class and loss of all points available for that day (plus additional loss to the Lab Participation and Techniques grade). Interpretations of the rules are solely at the instructor's discretion and not open to discussion.

These procedures are in place to prevent the accidental infection of microorganisms and to lower the risk of the laboratory to ourselves and our colleagues. As stated earlier, no microbiology lab can be 100% safe and as such it is the responsibility of all involved to help maintain a safe atmosphere in which everyone can learn. It is my sincere wish for everyone to enjoy the laboratory in a safe manner and learn from the experience, but as professionals we must all take responsibility for our own actions.

LABORATORY SAFETY GUIDELINES SIGNOFF FORM

I, _____ (please print), have received a copy of the *Laboratory Safety Guidelines* for the BIO220 laboratory. I have read and had the guidelines explained to me by the instructor for the course and agree to follow all rules outlined in the document.

I understand that there is no way to absolutely guarantee a 100% safe microbiology laboratory class, though the rules and policies outlined above are designed to minimize any risk to myself or my classmates.

I have understood the discussion of Biosafety Levels and their meanings.

I recognize that a copy of the *Laboratory Safety Guidelines* for the BIO220 laboratory is readily available in the laboratory and on the class website (<http://personal.jccmi.edu/irelandjohn/BIO220>).

I recognize that I am responsible for alerting my instructor about any conditions that I may have that could hamper my immune system, thereby increasing my risks in the laboratory.

I recognize that I am responsible for alerting my instructor as to any situations of conditions in the laboratory that may endanger or contaminate myself or others.

I understand that failure to follow the above rules in letter or spirit will result in being removed from the laboratory and could result in failure of the laboratory section of the course.

Signature _____
Date

Name (Please Print)

This document must be returned before the commencement of laboratory activities.