

Safety Guidelines and Training for Users of the WKU Biotechnology Center

All persons who will use the Biotech Center will be advised of potential hazards in the workplace.

SECTION 1. PPE:

1. LABCOATS AND GLOVES: One should assume that all surfaces, sink handles, door knobs and equipment are contaminated at all times with unseen biological organisms or chemicals. Student employees handling culture plates and tubes, liquid culture vessels, chemicals, stains, and reagents are required to wear gloves and encouraged to wear a lab coat to from exposure to hazardous materials (e.g. when collecting and handling waste). Lab coats and Gloves are provided by the Department at all times.

All laboratory personnel should:

- Change gloves when they become contaminated and when their integrity has been compromised.
- Remove gloves and wash hands when work with hazardous materials has been completed
- Dispose of used gloves in the biohazardous waste.
- Hand washing protocols must be rigorously followed; always wash hands before leaving the laboratory.
- Do not wear gloves when touching door knobs, computers and sink handles.**

2. EYE PROTECTION: An approved eye protection (ANSI Z87.1) must be worn when conducting procedures that have the potential to create splashes of hazardous materials. Eye protection is to be worn at all times when working at the chemical fume hood and handling any liquid solution that is considered flammable, corrosive, toxic or reactive. Eye Protection is available in the google drawer in the biotechnology center.

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SECTION 2. BIOSAFETY:

1. Biotech Center is BSL-1 ONLY:

A. Even if your faculty member's research uses BSL-2 organisms, ONLY BSL-1 organisms are allowed in the biotech center at all times. This is because this is a core facility and BSL-2 facilities cannot be in common use areas.

B. ONLY EBS 3130E is Biosafety Level 2 (BSL-2). Additional training is necessary before working with these organisms and using this room. This room must remained locked while work is being done.

3. Storage and transport of Biohazard waste are to be conducted in a leak-proof secondary container (e.g. autoclavable tubs).

4. **All work surfaces where biohazardous materials are utilized must be decontaminated with spray disinfectant at the completion of work. Even if the counter does not look like anything has been spilled, it must be disinfected.**

5. Biohazard material spills and accidents that result in overt exposures due to aerosols must be immediately reported to the Laboratory Supervisor. All Biohazard materials involved in the accident will be saturated with Disinfectant solution and allowed to stand for 20 minutes after which all sharps (broken tubes) will go in an appropriately marked sharps container and soiled towels into the biohazard bags. Locate all Sharps and Biohazard containers.

6. In the event of an accidental splash or spill all contaminated clothing must be removed and decontaminated before leaving the laboratory. The laboratory will supply sweatshirt and sweatpants while decontamination by autoclaving is being conducted. This clothing is located under the sink located by the Gel Imager.

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SECTION 3. CHEMICAL SAFETY:

1. **Gloves should be always be worn when handling liquid and solid chemical reagents of any kind. Gloves should be changed immediately after the handling of these chemicals. Dispose of gloves in the hazardous waste bags**

2. The chemical fume hood should be used when working with all acids, bases and flammables. Ensure that the sash is at an appropriate and safe level. Never stick one's head into the hood. Do not put unnecessary items into the hood.

3. A mask should be worn when weighing out any and all chemical powders. Masks are provided in the bin beside the Sorvall centrifuge.

4. All reagents must be labeled according to the HazCom 2012 reagent bottle labels in the laboratory: 1. Product Identifier 2. Pictogram 3. Signal Word 4. Hazard Statement 5. Precautionary Statements 6. Supplier Information.

5. Ethidium bromide is commonly used in the biotech center. It is a known carcinogen and can be hazardous to health if not handled properly. Gloves are mandatory when handling ethidium bromide. Any ethidium bromide tubes or bottles should not be taken or used beyond the bench where the gel imager is located. Any solids with ethidium bromide contamination (i.e. paper towels, gloves, used gels, etc.) must be disposed of in the Solid Ethidium Bromide Waste bin. Any liquids contaminated with ethidium bromide (i.e. buffers, etc.) must be disposed of in the Liquid Ethidium Bromide Waste container.

4. **Clean the working area thoroughly with plain water and wipe dry before leaving the lab. Leaving chemical residues on counters can result in your dismissal from the lab area. Do not use disinfectants when cleaning up chemical wastes as they can react violently with the chemical you are cleaning up, even in small quantity.**

5. Right to Know Law: You have the right to know what you are working with and what hazards it poses to you. Please take time to look up SDS sheets at least once for every chemical you work with.

6. Storage and transport of Hazardous Chemical waste must be conducted in a leak-proof secondary container (e.g. autoclavable tubs). Locate the Hazardous Waste Satellite Accumulation Area (SAA) and the Biohazard Waste Containers. Any employee or other researcher utilizing the center should tag and place waste into the SAA secondary container.

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SECTION 4. DANGEROUS EQUIPMENT NOTICE:

1. Some pieces of equipment in EBS 3130 can be very dangerous if issues are not reported. These machines may cause serious harm or even death.

A.) Autoclave and boiler system: If the autoclave or boiler is emitting unusual smells or excessive steam, evacuate the area of all persons IMMEDIATELY. Notify Naomi Rowland IMMEDIATELY by email at naomi.rowland@wku.edu or by phone at (270) 779-1842 or notify the Biology Office at (270) 745-3696.

B.) Sorvall Centrifuge: The centrifuge must be balanced and cleaned after each use. If the centrifuge begins rocking or making excessive unusual noises, STOP the cycle and evacuate the area of all persons immediately.

2. Before using any biotechnology center equipment, you MUST be trained. Do NOT use these machines if not properly trained by biotech personnel.

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SECTION 5. GENERAL RULES:

1. Eating, drinking, handling contact lenses, applying cosmetics, and storing food for human consumption are not permitted in laboratory areas. Food must be stored outside the laboratory area in cabinets or refrigerators designated and used for this purpose only.

2. **Cell phones should not be out in the biotech center. Cell phones should never be handled with gloves on and should not be used as laboratory timer, calculator etc.**

2. All personnel must know the location of the nearest safety shower and eyewash station and must ensure that the area under the shower is kept free of obstructions. When a safety shower or eyewash is initiated the wash must be conducted for a minimum of 15 minutes according to ANSI regulations.

3. All personnel must know the location of the SDS files. SDS files will be kept in a binder on the wall at the entrance to the Freezer Room and Biotech Center.

4. Equipment: Do not leave laboratory equipment on, soiled, or running when unattended (e.g. Balance, Centrifuge, pH meter). Do not leave the lab unattended with equipment running.

5. Always wash and dry your hands after using the biotech center.

6. Do not leave the laboratory in disarray (i.e. pick up your papers, towels, tubes, caps, autoclave gloves, spray bottles, sponges, step ladder, lab coats, books, and return them to the proper location.) **Always clean every single area you have used regardless if it “looks” dirty or not.** The areas to take special note of are: e.g. 1.) Carts used to transport waste or reagents and chemicals. 2.) Autoclave station. 3.) Biosafety Cabinet. 4.) Bench areas used for gel electrophoresis and ethidium bromide handling 5.) Gel imaging station, including computer mouse and surface where gel is placed for imaging 6.) Weigh Station.

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SECTION 6: HEALTH

If you are pregnant or planning on becoming pregnant, if you suffer from any disability such as epilepsy, diabetes or a heart condition, if you have serious allergies, a known infection or are being treated with immunosuppressive drugs such as corticosteroids, or if you are color-blind, please tell your supervisor. The information will be kept entirely confidential but is imperative to your safety. It is your responsibility to alert your supervisor or other applicable staff.

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SECTION 7: QUESTIONS AND SIGNATURE

By signing this document, I agree that the laboratory director thoroughly reviewed each of the Safety Procedures and Precautions listed above. I understand that it is my responsibility to ensure the safety of myself and other laboratory participants by adhering to these safety guidelines. I understand that my failure to abide by the safety guidelines can result in my dismissal.

I understand that I am under 24 hour video surveillance upon entrance to the facility and that the Biotechnology Center reserves the right to utilize such surveillance.

Sign Name _____

Print Name _____

Date _____