

**BSB 653 Biosafety Level I (BSLI) Standard Operating Procedures**  
**W. Scott Argraves, Ph.D., Professor**

**These operating procedures are not intended as a substitute for the MUSC OSHA Guidelines.**

Biosafety Level 1 is suitable for work involving well-characterized agents not known to consistently cause disease in healthy adult humans, and of minimal potential hazard to laboratory personnel and the environment.

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1. Eating, drinking, smoking, and the application of cosmetics including lip balm (Chapstik, Blistex, Vaseline, etc.) are not permitted in the laboratory. Avoid touching fingers to eyes (including contact lenses) or mouth to decrease risk of accidental mucosal exposure.
2. Disposable lab coats are required when working with BSLI agents. Lab coats must be removed before leaving the laboratory and are to remain in the laboratory until discarded in the red biohazard bin located within the laboratory. Lab coats must not be stored in direct contact with street clothes or other personal items used in the laboratory (i.e., notebooks).
3. Gloves, safety glasses, and masks (PPE) are not required for working under BSLI conditions, however, gloves are recommended if the skin on the hands is broken, if there is a rash present, when handling experimental animals, and when skin contact with the agent is unavoidable. Safety glasses are required when conducting procedures that might generate splashes of microorganisms or other hazardous materials (sonicators, homogenizers etc.). Persons who wear contact lenses are required to wear safety glasses. PPE must be removed before leaving the laboratory. Reusable PPE (safety glasses) must not be stored in direct contact with street clothes or other personal items (i.e., notebooks). Disposable PPE (gloves, masks) must be disposed of in the red biohazard bin located within the laboratory. Hands must be washed with soap and water at the hand-washing sink located in the laboratory after removing gloves, handling contaminated or potentially contaminated materials, and before leaving the laboratory. Maintain an alternative set of clothing at the work place in the event street clothes become soiled or contaminated.
4. Use pipetting devices; mouth pipetting is prohibited.
5. Avoid creating aerosols or allow them to settle before opening tubes or containers. Vigorous shaking, blending, mixing, or vortexing creates aerosols.
6. Perform all work on absorbent bench paper. When work is completed discard paper in the red biohazard bin located within the laboratory.
7. Discard all sharps (glass pipettes, tips, needles, blades etc) in a sharps disposal bin located within the work area.

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8. Bacterial cultures, cleared media, and cell lysates must be decontaminated prior to disposal by exposure to household bleach (1 part bleach to 9 parts contaminated solution) for a minimum of 15 minutes. In the event the vessel is not compatible with bleach (i.e. polystyrene), place the vessel in a closable, leak-proof container that is identified as containing biohazards, and autoclave for 30 minutes. Decontaminated liquid waste may then be disposed of down the toilet and the vessel washed according to standard lab practices for washing glassware (soap and hot water!!).

9. Discard all other contaminated and potentially contaminated materials (including bacterial stabs and culture plates) in the red biohazard bin (orange bag) located within laboratory.

10. **When a red biohazard bin (orange bag) or sharps container is full:** Tape the orange bag or sharps container closed and place in a leak-proof autoclavable container. Label with autoclave indicator tape and autoclave for 30 minutes. Place the autoclaved orange bag in a red biohazard bag before placing it in **the large red biohazard transport bin located in the lab (the autoclaved sharps container can go directly into the bin) for transport to the Biohazard Waste Storage Room located downstairs in the Basic Science Building. Use the east-most service elevator of BSB to get to this room. This room is accessible by card key (activated employee ID).** If the orange autoclave bag "disappears" before autoclaving, page Lisa Steed 2-0590, pager 14463, since the missing bag must be located and disposed of properly.

11. Fire extinguishers are located just outside the door of the main laboratory entrance and just inside the door of the rear laboratory entrance.

12. An eye wash station, hand-washing sink and first aid kit are located on the left side (relative to the main laboratory entrance) of the main laboratory (BSB 653).

13. **In case of a spill or accident,** identify the area of contamination. Take precautions to prevent spreading the contamination: are your lab coat and/or gloves contaminated, how about clothing not covered by PPE (shoes and the soles of your shoes in particular)? Do you need to disinfect the bottom of your shoes using 70% ethanol?

14. Procedure for clean up:

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- Never touch broken glassware with your fingers. Place absorbent material AROUND the perimeter of the spill/broken glassware to absorb contaminated solution.
- Pour 1 part household bleach for every 9 parts contaminated solution over the contaminated area. Allow to sit for a minimum of 15 minutes.
- Use the brush and dustpan located next to the rear entrance of the lab to collect the now decontaminated broken glass and absorbent material.
- Dispose of the decontaminated broken glass and absorbent material in regular laboratory glass trash.
- Wait! Do you need to change into the alternate set of clothing kept in the lab for this purpose? If so, disinfect contaminated clothing by exposure to 70% ethanol for a minimum of 15 minutes. Once decontaminated, clothing can be washed with regular laundry.
- Immediately** notify Dr Argraves of any exposure or contamination (843-697-5328). Dr. Argraves will confirm the status of the exposure. An exposure incident report will be opened and the individual will be taken to either Employee Health (57 Bee Street, 792-2991) or Student Health, (30A Bee Street, 792-3664). Dr. Argraves will also inform the MUSC University Biosafety Office (Dr. Dan Eisenman, 792-3055), and ultimately the NIH Office of Biotechnology Activities (301-496-9838).

Training will occur as needed, as is the case with new employees, or when procedural or policy changes occur. Additional training sessions will take place at least annually to ensure lab personnel are adequately trained regarding duties, potential hazards, safety procedures, and exposure evaluation procedures. Attendance at these training sessions is mandatory. Employee signatures will be required to document attendance. It is the employee's responsibility to notify Dr. Argraves at any time of any change in his or her health risk status.

Please direct questions or concerns to one or all of the following:

Scott Argraves, [Argraves@musc.edu](mailto:Argraves@musc.edu), 843-792-5482 (ofc), 843-697-5328 (cell), 843-557-0539 (home).

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