Standard Operating Procedures Guidelines

The purpose of this document is to guide principal investigators in designing standard operating procedures for their laboratory. These procedures should include specific locations and room numbers when referencing such things as autoclaves and spill response kits. The document should be set up to provide to members of the lab with a set of instructions on how to operate safely using the procedure. If your laboratory is functioning under a Biosafety Level 2, you are required to have a Lab Specific Biosafety Manual [Marshall-University-Lab-Specific-Biosafety-Manual-Template.docx](https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.marshall.edu%2Fsafety%2Ffiles%2FMarshall-University-Lab-Specific-Biosafety-Manual-Template.docx&wdOrigin=BROWSELINK) which should have much of the information needed to include in this document.

# Sections

1. Title
2. Introduction and Purpose of Work

Introduce the main risks associated with the techniques and reagents being used, including the routes of transmission.

1. Applicable Regulatory Statutes / Guidelines

There should be a reference to the required CITI training modules to conduct the work described. In addition, the following should be included for BSL2 work (use the first for BSL1):

All laboratory work shall fully comply with biosafety level-2 (BSL-2) containment as described in:

* CDC/NIH Biosafety in the Microbiological and Biomedical Laboratories : <https://www.cdc.gov/labs/pdf/SF__19_308133-A_BMBL6_00-BOOK-WEB-final-3.pdf>
* OSHA Bloodborne Pathogens Standard <http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10051>
* NIH rDNA Guidelines:<https://osp.od.nih.gov/wp-content/uploads/NIH_Guidelines.pdf>
1. Risk Assessment
* The principal investigator (PI) or his/her designated representative is responsible for performing the first risk assessment for biohazards handled in the laboratory. This is important, as those handling biohazards must be aware of the risks involved in the work and also understand why the control measures have been implemented. The assessment process should cover from the initial procurement of a biohazard until it has been securely stored or inactivated upon completion of work. The process also identifies where and how the biohazard will be handled throughout its duration in the lab and by whom. Each step in the work process must be analyzed for potential risk to personnel.
* Medical considerations: upon accidental exposure to viral vectors, lab members will follow the Exposure Protocol in Bloodborne Pathogen Exposure Control Plan and contact Austin Hoffman (304-696-2563 or (304) 412-5788) or Vincent Sollars (304-696-7357). If needed, lab workers should also complete and submit an MU Injury/Illness report.
* A resource for understanding how laboratory-associated infections occur can be found at: Byers, Karen B., and A. Lynn Harding. 2017. “Laboratory-Associated Infections.” In *Biological Safety: Principles and Practices, Fifth Edition*, edited by Dawn P. Wooley and Karen B. Byers, 59-94. Washington, DC: ASM Press.
1. Precautions

Precautions that are specific to this type of work should be delineated, as well as reinforcing standard procedures such as not eating or drinking in the laboratory, avoidance of sharps, and standard microbial techniques. These should include knowledge of signs of infection for any infectious agents used in the lab.

Standard procedures should include:

* Do not eat, drink, or smoke in the laboratory. Do not store food in the laboratory. Keep your hands away from your face (avoid touching your eyes, nose, or mouth with gloved hands).
* Do not pipette liquids by mouth.
* Wear personal protective clothing in the laboratory (such as lab coats, gloves, and face protection when splash or splatter is anticipated).
* Minimize or eliminate (if possible) the use of sharps. If required, work very carefully with sharp instruments.
* Work carefully to minimize the potential for aerosol formation. Confine aerosols as close as possible to their source of generation (in other words, use of a biosafety cabinet).
* Disinfect work surfaces and equipment after use.
* Wash your hands after removing gloves and protective clothing, after contact with contaminated materials, and before leaving the laboratory.
1. Procedural Methods and Materials
* Restricted access
* PPE
* Storage
* Transport
* Cleaning and disinfection
* Waste generation and disposal methods
* Standard microbiological practices
* Personnel Exposure to Biohazards: Lab members will follow the Exposure Protocol in Bloodborne Pathogen Exposure Control Plan and contact Austin Hoffman (304-696-2563 or (304) 412-5788) or Vincent Sollars (304-696-7357).
* Spill and accident response procedure
1. Animal use procedures

Animals must be housed, handled, and used in accordance with the federal Animal Welfare Act (P.L. 89-544, et seq) and the NIH Guide for the Care and Use of Laboratory Animals. All research involving animals must be done under a protocol approved by the Marshall University IACUC. The Director of the Animal Resource Facility is responsible for assuring the safety and wellbeing of the research animals. The Marshall University JCESOM Animal Resource Facility Policy and Procedures Manual outlines many of the procedures: [BBSC Policy and Procedures June 2023 - Adobe cloud storage](https://acrobat.adobe.com/link/track?uri=urn%3Aaaid%3Ascds%3AUS%3Ac86ced36-8a77-4e09-b5bd-5f37c5c956db&viewer%21megaVerb=group-discover) General guidelines include:

* Access to the animal resource facility laboratory is restricted
* Staff will be advised of increased risks for persons who are immunocompromised, pregnant, or for whom infection might be unusually hazardous
* Personnel must wash their hands after handling cultures &/or animals, and before leaving the animal facility.
* Doors to animal rooms within the buildings are kept closed when animals are present.
* Bedding & waste materials from animal cages are removed in such a manner as to minimize the creation of aerosols & disposed of by incineration.
* Cages are washed & decontaminated after use.
* All biohazard waste & animal carcasses from the animal rooms are bagged in red biohazard bags before removal from the building for incineration.
* Spills, which result in exposure to infectious materials, should be reported to the immediate supervisor.
* All personnel entering animal rooms shall wear appropriate protective equipment