



OP 79.02: BIOSAFETY

PURPOSE

Biological safety is the discipline that addresses the safe handling and containment of biohazardous material in order to protect humans, animals, plants and the environment. The Biosafety policy describes the University's stance on the regulation, handling, containment and disposal of biohazardous materials used in research and teaching.

POLICY

Mississippi State University follows the *NIH Guidelines for Research Involving Recombinant and Synthetic Nucleic Acid Molecules*. The institution adheres to other current federal, state and local regulations and guidelines related to the use of biohazards. This policy applies to all faculty, students, staff, visitors and contractors at Mississippi State University including the regional campuses, research stations and university field sites.

Definitions

- A. Biohazardous materials: any material of biologic origin that is potentially hazardous to humans, animals, plants and/or the environment including but not limited to:
 - 1. Known pathogenic agents: bacteria, viruses, fungi, parasites, prions
 - 2. Recombinant nucleic acids
 - 3. Synthetic nucleic acids
 - 4. Cell lines including human and nonhuman primate derived; lines of any species deliberately infected with a pathogen or exposed to a toxin of biologic origin
 - 5. Human materials including blood, blood components, body fluids, tissues and organs
 - 6. Animals including research and wild animals that are known or are suspected to harbor pathogenic organisms
 - 7. Transgenic animals
 - 8. Animal material including blood, blood components, body fluids, tissues or organs from animals known or suspected to harbor pathogenic organisms
 - 9. Toxins of biologic origin
 - 10. Transgenic plants
 - 11. Plant materials including those that are known or suspected to harbor plant pathogens or plant pests; and exotic plants
 - 12. Vectors including arthropods that are known or suspected to harbor pathogenic organisms
 - 13. Select agents: these are agents that have been determined by the federal government of being capable, if released, of causing a serious public health crisis or are high consequence agricultural pathogens.
- B. Containment refers to the safe work practices, equipment and facility design used to reduce or eliminate exposure to laboratory personnel, other persons, and the outside

environment to potentially hazardous material. Four biosafety levels (BSL/BL) that describe increasing levels of containment are defined in both the Centers for Disease Control and Prevention's *Biosafety in Microbiological and Biomedical Laboratories* and the *NIH Guidelines*.

- C. Dual Use Research of Concern is life sciences research that, based on current understanding, can be reasonably anticipated to provide knowledge, information, products, or technologies that could be directly misapplied to pose a significant threat with broad potential consequences to public health and safety, agricultural crops and other plants, animals, the environment, materiel, or national security.
- D. Oversight refers to watchful care of an activity through periodic reviews, facility inspections, unannounced facility site-visits, training, risk assessments, biosafety, biosecurity and/or incident response plan development and biosafety consultation.
- E. Approval refers to the process of development, submission, and concurrence of a Principal Investigator developed research protocol, that is then subject to Institutional, State, and/or Federal regulations and guidelines.

Procedure

The safe conduct of experiments involving biohazardous material depends upon the individual conducting the activities. However, the institution is responsible for ensuring that all research is conducted in compliance with federal, state and local regulations/guidelines. This is accomplished through the Institutional Biosafety Committee (IBC). The IBC is a standing committee that reports to the Vice President for Research and Economic Development.

I. The IBC

- A. Reviews research involving biohazardous materials including
 - 1. Assesses containment levels for proposed research (laboratory, animal, and field studies);
 - 2. Assesses the facilities, procedures, practices and training/expertise of personnel involved in the research;
- B. Adopts emergency plans covering accidental spills and personnel contamination resulting from biohazardous materials research;
- C. Investigates incidents;
- D. Reports any significant problems or violations to the appropriate federal and state agencies;
- E. Establishes procedures for the handling of biohazardous waste;
- F. Reviews/advises with regard to situations that represent potential biological hazards including dual use research of concern.

The IBC is the only entity with the authority to review all proposed research involving biohazardous material performed under the auspices of Mississippi State University. The IBC is authorized to create specific procedures that relate to the operation of the program. The IBC's authority is granted by the Institutional Official – the Vice President for Research and Economic Development. The IBC has the authority to act independently to bind all activities falling under its purview.

II. The Biological Safety Officer (BSO)

- A. Performs periodic inspections of laboratories to ensure adherence to standards;
- B. Reports any significant problems or violations to the IBC and the institution;
- C. Develops emergency plans for accidental spills and personnel contamination resulting from biohazardous materials research;
- D. Implements policies and procedures set forth by the IBC;
- E. Investigates incidents;
- F. Assists research and teaching laboratories in training of personnel;
- G. Provides technical guidance on biosafety and biosecurity matters.

III. IBC Oversight and/or Approval

IBC oversight and approval must be obtained for the following research activities:

- A. Experiments using biohazardous materials for which biosafety level 1 or greater containment is required and/or;
- B. Experiments involving nucleic acids covered by the *NIH Guidelines*.

IBC oversight for the following teaching activities:

- A. Experiments and/or hands on training using biohazardous materials for which biosafety level 1 or greater containment is required and/or;
- B. Experiments and/or hands on training involving nucleic acids covered by the *NIH Guidelines*.

IV. Noncompliance

Strict adherence to current biosafety policies and practices ensures the safety of faculty, staff and students, as well as, compliance with government regulations and guidelines. Noncompliance may jeopardize the ability of the institution to obtain federal funding or result in suspension of work of all federally funded research. Grantees and contractors must be prepared to demonstrate that proper practices and procedures have been put in place.

Review

The Institutional Biosafety Committee will review this OP every four years or whenever circumstances require immediate review.

REVIEWED BY:

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