



Southeast
Missouri State University

BIOSAFETY PLAN

FOR

SOUTHEAST MISSOURI STATE UNIVERSITY
CAPE GIRARDEAU, MISSOURI

Prepared by

SOUTHEAST MISSOURI STATE UNIVERSITY
ENVIRONMENTAL HEALTH AND SAFETY

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APPROVED BY SOUTHEAST MISSOURI STATE UNIVERSITY ENVIRONMENTAL
HEALTH AND SAFETY COMMITTEE – OCTOBER 1, 2013

The Southeast Missouri State University Environmental Health and Safety Committee (EHSC) has established procedures for review of the use of biological material used on Southeast's premises potential exposures to staff, faculty, or students to biohazardous material during laboratory procedures.

Research or other activities that require EHSC review include, but are not limited to the following:

- research involving work with or storage of recombinant or synthetic nucleic acid molecules which are not expressly exempt from NIH Guidelines
- research involving bacterial species above Biosafety Level 1, toxins, human blood, tissue, or cell lines.
- generation of transgenic animals or plants
- material containing Lentiviral or Retroviral systems
- the risks of materials used in their laboratory

Southeast's EHSC has identified five areas of compliance focus regarding research or other activities. These include:

1. appropriate training of investigators
2. investigators should have information on type of sample and hazards associated with its use
3. biosafety inspection
4. database management and upgrade of record keeping
5. generation of transgenic animals or plants

Training personnel

- All investigators must attend an introduction to biosafety training, bloodborne pathogen training (if applicable), or other approved training course(s).
- If hazardous chemicals are used, investigators and users must also attend General Laboratory Safety training, or other approved training course.
- If research involves a radioactive isotope, the Principal Investigator (PI) must contact the Radiation Safety Officer to assure the research facility and equipment may be used for testing material containing radioactive isotopes. In addition, all personnel involved in a project using radioisotopes must have Radiation Safety Training. Use of equipment containing Class II, III or IV lasers must also be approved for use by the Laser Safety Officer and users/operators must have laser safety training..
- Specialized laboratory safety training must be provided and documented by the Principle Investigator. A copy of the Specialized Training Form must be provided to the Environmental Health and Safety Office.

Knowledge of Material/Hazards

- The EHSC will document the intended research or activity with the Principal Investigator planning the activity. The EHSC will gain an understanding of the material that the PI will be using, the type of testing material or assays planned or other pertinent information. Special attention will be given to standard operating procedures and the type of material. This attention will focus on the risk of aerosolization, required PPE, and transportation and storage requirements for the material to be use.

Biosafety Inspection

- Southeast Environmental Health and Safety Office will conduct initial and periodic inspections of the laboratory. The inspection will include a review of the material/hazards in the laboratory, laboratory manipulations, assignment of a biosafety level, and use the *Biosafety in Microbiological and Biomedical Laboratories 5th Edition, Guidelines for Human Embryonic Stem Cell Research and Final Report of the National Academies' Human Embryonic Stem Cell Research Advisory Committee and 2010 Amendments to the National Academies' Guidelines for Human Embryonic Stem Cell Research* to assess laboratory requirements. During these inspections the facility physical barriers, laboratory equipment, laboratory procedures, personal protective equipment, storage, and standard operating procedures for the lab will be assessed.

Database management and record keeping

- The PI must maintain detailed records of all materials received that are used in protocols requiring review and approval according to *NIH Guidelines*.
- The PI must maintain an auditable database of samples received and processed with his/her laboratory. Copies of these records should be maintained by the PI and made available for inspection by Environmental Health and Safety Office Representatives.

Generation of Transgenic Animals (Requires EHSC review)

1. NIH guideline Section III-E-3 “covers experiments involving the generation of rodents in which the animal's genome has been altered by stable introduction of recombinant or synthetic nucleic acid molecules, or nucleic acids derived therefrom, into the germ-line (transgenic rodents). Only experiments that require BL1 containment are covered under this section.”
2. NIH guidelines Section III-D-4-a covers experiments involving the creation of transgenic animals other than rodents “Recombinant or synthetic nucleic acid molecules, or DNA or RNA molecules derived there from, from any source except for greater than two-thirds of eukaryotic viral genome may be transferred to any non-human vertebrate or any invertebrate organism and propagated under

conditions of physical containment comparable to BL1 or BL1-N and appropriate to the organism under study.”

Generation of Transgenic Plants (Requires EHSC review)

- NIH guidelines Section III-E-2 covers “Experiments involving nucleic acid molecule-modified whole plants, and/or experiments involving recombinant or synthetic nucleic acid molecule-modified organisms associated with whole plants, except for those that fall under Section III-A, III-B, III-D, or III-F. It should be emphasized that knowledge of the organisms and judgment based on accepted scientific practices should be used in all cases in selecting the appropriate level of containment.”

Principal Investigators covered by this procedure must submit the Southeast Missouri State University Biosafety Form for review by EHSC. This form will be appropriately and completely filled out by the Principal Investigator.