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Biological Safety

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I. REASON FOR THIS POLICY

The University of South Dakota strives to maintain a safe living, learning, and working environment. A safe working and learning environment is an expectation of the University, its faculty and staff. The hazard posed by biological materials, plus the risks of infections resulting from exposure to infectious materials dictate the necessity for the development of and adherence to rigorous protocols, laboratory best practices and regulations concerning biological materials.

II. STATEMENT OF POLICY

The intent of this policy is to establish required safe practices for the faculty, staff and students, increase campus-wide safety awareness and reduce institutional liability. This policy shall provide the basis for controlling exposure to biological agents and minimizing the risk of infection to university faculty, staff, students and the community at the highest level possible.

III. DEFINITIONS

Agent – Something that produces or can produce a chemical, physical, or biological effect on the environment or organisms within an environment.

BSL1 – Biosafety Level 1 is suitable for work involving well-characterized agents not known to cause consistently disease in healthy adult humans, and of minimal potential hazard to laboratory personnel and the environment. The laboratory is not necessarily separated from the general traffic patterns in the

building. Work is generally conducted on open bench tops using standard microbiological practices. Special containment equipment or facility design is neither required nor generally used. Laboratory personnel have specific training in the procedures conducted in the laboratory and are supervised by a scientist with general training in microbiology or a related science.

BSL2 – Biosafety Level 2 is like Biosafety Level 1 and is suitable for work involving agents of moderate potential hazard to personnel and the environment. It differs from BSL-1 in that (1) laboratory personnel have specific training in handling pathogenic agents and are directed by competent scientists; (2) access to the laboratory is limited when work is being conducted; (3) extreme precautions are taken with contaminated sharp items; and (4) certain procedures in which infectious aerosols or splashes may be created are conducted in biological safety cabinets or other physical containment equipment.

Biosafety Cabinet – These cabinets use vertical laminar airflow to create a barrier to airborne particles, such as microorganisms. They use High Efficiency Particulate Air (HEPA) filters to clean air going into the work area and out to the environment.

CDC – Center for Disease Control

Fume Hood – Work area that is partially or fully enclosed, and designed to remove chemical fumes and aerosols away from the work area

IACUC – Institutional Animal Care and Use Committee

Hazardous Materials – An element, compound, or mixture that poses a potential health hazard to humans or threatens the integrity of materials, facilities, or the environment

NFPA – National Fire Prevention Association

NIH – National Institutes of Health

Select Agent - pathogens or biological toxins which have been declared by the U.S. Department of Health and Human Services or by the U.S. Department of Agriculture to have the "potential to pose a severe threat to public health and safety". [Select Agents and Toxins List](#)

USDA – United States Department of Agriculture

IV. PROCEDURES

Activity Approval

The Institutional Biosafety Committee (IBC) is charged by the President of The University of South Dakota to formulate policy and procedures related to the use of biohazardous agents and materials. To notify the IBC, request review of proposed activity, or obtain approval of proposed activity Principal Investigators

can contact the university's biological safety officer at the department of Environmental Health and Safety or the chair of the IBC.

The University is not registered to possess any material deemed by the CDC/USDA as a Select Agent. Individuals seeking to acquire any substances identified as a Select Agent must first obtain approval from the Chair of the University Institutional Biosafety Committee and the Director of Environmental Health and Safety.

Individuals intending to include Agents rated BSL2 or higher in any activity shall submit a protocol for approval from the Institutional Biosafety Committee.

Experimentation with any vertebrate animals must have prior approval of the University IACUC. Laboratory animals shall be housed in accredited animal facilities and must not be kept in laboratories for more than 24 hours.

Policies should be adapted to meet the specific needs in the laboratory by adding safety and health policies and procedures in addition to those set forth in this document and the USD Biological and Chemical Safety Manual.

Children under the age of 18 are prohibited from hazardous materials laboratories unless prior approval has been obtained from the department head and EHS. Children must be always supervised by the laboratory supervisor or Principal Investigator.

Training

Individuals working with or around hazardous materials shall be aware of the hazards of all substances and equipment. Department supervisors should post the proper procedures for handling hazardous material and the procedures to follow in the event of a spill or other emergency.

Supervisors and Principal Investigators have the sole responsibility of providing notice of use of biological agents, controlling access to agents in their possession, training personnel who will be working with or in areas where biological agents are used or stored, and providing engineering controls and personnel protective equipment to protect individuals from potential hazards that may be reasonably presumed to exist.

Individuals shall follow basic precautions when occupying a biological laboratory.

Appropriate safety procedures set forth by the CDC/NIH shall be followed for activities involving substances/materials with a biosafety level rating.

Supervisors must discuss the pros and cons of immunization with individuals who work with or around an agent for which a vaccine is available.

It is the responsibility of the individual to notify supervisors of unsafe applications of procedures, damaged equipment and hazardous tasks or materials for which reasonable training or protection have not been provided.

Personal Protective Equipment

Supervisors and Principal Investigators have the sole responsibility of providing engineering controls and personnel protective equipment to protect individuals working with or around hazardous substances from reasonably potential hazards.

Equipment and processes that have the potential to generate an aerosol of liquid or solid particles containing hazardous materials shall be operated inside an appropriate fume hood or biosafety cabinet. Alternatively, when a fume hood or biosafety cabinet is not available for the activity or operation, appropriate PPE must be utilized by the operator(s) and individuals occupying the area of the activity or operation to protect against ingestion, inhalation, or contact with skin and eyes.

Hazardous Material Transfers, Storage, and/or Disposal

All hazardous material must be managed in conjunction with the Department of Environmental Health and Safety to ensure compliance with Federal, state, and local regulation which define hazardous material and restricts treatment, transportation, transfer of ownership, and disposal of these materials.

Supervisors and principal investigators shall communicate inventories, activities, and waste generated by the Department of Environmental Health and Safety. Hazardous shall be stored in appropriate cabinets and clearly labeled with appropriate warning and content information.

V. RELATED DOCUMENTS, FORMS AND TOOLS

[USD Biological and Chemical Safety Manual](#)

[Guidelines for Recombinant DNA Research](#)

[Chemical Safety Policy](#)