WASHINGTON STATE UNIVERSITY

BIOSAFETY POLICY

I. INTRODUCTION

A biosafety policy has been developed to provide faculty, staff and students at Washington State University and the surrounding community with guidelines for enhanced protection against possible risks associated with the use of biohazardous agents, recombinant DNA molecules and known carcinogens. Appended to this document are the guidelines from the Federal and State Government to establish the responsibilities for controls, practices and procedures to be utilized when working with carcinogens, infectious agents and recombinant DNA. These guidelines are subject to continual revision and consequently are not cited in this policy statement. Any principal investigator contemplating research involving biohazardous agents can review these references. A complete file is maintained in the Office of Grant and Research Development and the Environmental Health Services Department. These policies are intended to help the institution, the Institutional Biosafety Committee, and the principal investigator determine the appropriate safeguards that should be implemented. These policies will never be complete or final, since all conceivable experiments involving biohazardous material cannot be foreseen. Therefore, it is the responsibility of the institution and those associated with it to adhere to the purpose of these policies as well as to their specifics. By implementing these procedures and controls, the degree of safety offered researchers, support personnel and the surrounding community can be increased.

II. General Policy for Control of Biohazardous Agents

A. Responsibility

Each institution conducting or sponsoring research involving carcinogens, infectious agents and/or recombinant DNA is responsible for ensuring that the research is carried out in full conformity with the guidelines as established by Federal and State Government. In the discharge of their responsibilities, the following roles, responsibility, and administrative framework are defined.

1. Vice Provost for Research. The Vice Provost for Research is responsible for the implementation and administration of these policies. It is the responsibility of the Vice Provost for Research or his designated representative to review these policies at least once a year and to provide Federal and State agencies any required information in order for the University to be in compliance with these agencies. Additional procedures may be established in order to ensure that these policies are followed.

2. Institutional Biosafety Committee (IBC). This committee is responsible for advising the Vice Provost for Research on University compliance with Federal and State regulations, University biosafety needs, reviewing research proposals for compliances with standards, and recommending training and education programs for laboratory personnel. Conflicts which arise with interpretation of these policies will be reviewed by the Institutional Biosafety
Committee and a resolution will be sought.

3. **Safety Division - Environmental Health Services Department.** The Environmental Health Services Department is responsible for reviewing facilities and containment equipment, providing general guidance about safety standards, and assisting the Institutional Biosafety Committee.

4. **Department Chairpersons and Unit Directors.** They are responsible for all employees, students and visitors in their areas of control. They must be aware of the risks involved and approve control methods. All laboratory accident reports must be reviewed by the chairperson and appropriate steps taken to ensure prevention of further accidents.

5. **Principal Investigator and Supervisor.** The primary responsibility for establishing, following and enforcing rules and procedures for the proper control of biohazardous agents rests with the principal investigators, research leaders and laboratory supervisors. The principal investigator is responsible for the training of employees in safety practices, correcting work errors, identifying defective working conditions and developing a positive attitude among employees toward accident prevention. The principal investigator is responsible for the initiation of the institutional review process including a safety plan for any research under his/her direction that involves any biohazardous material. This safety plan must be included in the Laboratory Safety Manual discussed in Section C and include a description of the potential risk to laboratory personnel and emergency procedures to be followed. Each principal or co-principal investigator is responsible for investigation and reporting of each accident, initiation of corrective action and recommendation of improvements that will ensure maximum safety for his/her employees. Any accident or incident which results in exposure to biohazardous agents and carcinogens that could or do cause injury or illness must be reported to the principal investigator, the chairperson of the department and to the Environmental Health Services Department.

6. **Laboratory Workers.** Each laboratory worker assigned to work with biohazardous agents or materials, is responsible for complying with safety rules and procedures. The laboratory worker must report to the principal investigator or co-investigator all facts pertaining to every accident or spill resulting in human exposure or breach of containment or any action or condition which may cause such a breach. The laboratory worker is responsible for reporting any relevant changes in his/her medical profiles to be included in the medical surveillance records, and for maintaining proficiency, safe working techniques and containment procedures. When training sessions are provided, it is the responsibility of the laboratory worker to attend.

**B. Containment**

Primary physical containment is achieved through good laboratory practices. Secondary physical containment is achieved through special laboratory design.

The kinds of physical containment facilities required depends upon the type of materials utilized, the scope of research planned, and the risks to the environment. For containment facilities housing recombinant DNA research, BL1, BL2, BL3, and BL4 designations are used (where a BL1 facility provides the least amount of physical containment and a BL4 facility the most). Research with microbial organisms utilizes the C1, C2, C3, C4 and C5 rating system (where C1 indicates organisms least hazardous and C4 the most hazardous to human health). Class 5 organisms pertain to foreign animal pathogens that are excluded from the U.S. by law. Oncogenic virus are classified as low-risk, moderate-risk, and high-risk oncogenic virus (where low-risk correlates to C2 and high risk to C4). Those chemicals which have been classified as carcinogens by regulatory agencies must have appropriate containment. Prior approval of the containment equipment and procedures must be
obtained from the Institutional Biosafety Committee before the initiation of any research involving biohazardous materials. The containment of carcinogens is currently the responsibility of the principal investigator with the approval of the Institutional Biosafety Committee. Some containment requirements for carcinogens can be found in the reference listed in the appendix. A general description of containment classifications for recombinant DNA and microbes follows. For detailed specifications and actual design requirements for BL2, BL3, or BL4 levels, the National Institutes of Health (NIH) guidelines should be consulted. Assistance can be provided by the Environmental Health Services Department.

1. BL1 and C1 laboratories require no special design. Research with C1 agents and/or recombinant DNA requiring BL1 physical containment can be conducted in conventional laboratories (i.e., on open benchtops) by workers utilizing good laboratory procedures and techniques. The laboratory is not separated from the general traffic pattern of the building and public access is permitted. No special laboratory design approval is required.

2. BL2, C2, or low-risk oncogenic virus laboratories require that an autoclave for sterilization of waste and contaminated materials shall be available in the same building. Although these laboratories are not separated from the general traffic patterns of the building, access to them is limited at the time when such experiments are being conducted within the laboratory. Certified biological safety cabinets shall be used to contain hazardous aerosol. The Environmental Health Services Department certifies biological safety cabinets and must examine these laboratories prior to the initiation of research by the principal investigator.

3. BL2, C3, or moderate-risk oncogenic virus research laboratories require specific engineering design features and physical containment equipment as noted in the Department of Health and Human Services guidelines. The laboratory must be separated from areas that are open to the general public. Access to these laboratories must be controlled. Biological safety cabinets must be available within the controlled laboratory area. An autoclave must be available within the building, preferably within the controlled lab area. Facilities must be examined by the Environmental Health Services Department prior to initiation of any BL3 or C3 level research and on a regular basis. The Environmental Health Services Department will then advise the Biosafety Committee.

4. BL4, C4, C5 or high-risk oncogenic virus laboratories have very rigid and specific requirements. Actual laboratory design requirements and policies are noted in the DHHS and USDA guidelines.

C. Laboratory Safety Manual

For Class 2 and higher risk experiments, the safety and containment procedures adopted and followed by the laboratory must be documented in a Laboratory Safety Manual (LSM) which must be approved by the Institutional Biosafety Committee prior to the initiation of research. To ensure continuing safety-education of every laboratory worker, a copy of the LSM should be kept readily accessible in the laboratory and used to instruct new employees. In addition, if extremely hazardous agents (class 3 or 4) are involved, a copy of the LSM must also be filed with the Environmental Health Services Department. It is suggested that the Laboratory Safety Manual include but is not limited to the following general topics: a description of general laboratory policies; instructions about safe operations of laboratory equipment; signs and policies used to ensure containment of biohazardous agents, a description of the hazardous materials and techniques for safe handling, sorting, and decontamination; a description of the medical surveillance program and the risk of human infection; a description of emergency measures to be followed in breach of containment or laboratory accidents.
To simplify the process of developing generally accepted laboratory procedures, it is suggested that the principal investigator or laboratory supervisor consult with the Environmental Health Services Department or the Institutional Biosafety Committee and peruse the references listed in the appendix.

**D. Health Surveillance**

To provide maximum protection of the health of laboratory and other personnel at risk, good preventive medical practices will be followed. These practices should include a medical history and medical examination for all personnel involved with biohazardous materials, an updating of all appropriate immunizations, periodic medical examinations during the course and at the termination of the project. In addition, appropriate records and serum samples must be maintained. The extent of any medical surveillance program will vary depending on the nature of the project and the risk of exposure. The costs of health surveillance shall be included in the budget of an extramural supported project. The appropriate academic unit will be financially responsible for intramural sponsored projects.

In connection with each project that involves biohazardous materials, it is the responsibility of the Institutional Biosafety Committee to determine the necessity for health surveillance, to specify the requirements and the extent of the surveillance. General guidelines are in the references in the appendix.

**APPENDIX** (Available in OGRD)


10. Laboratory Safety at the Center for Disease Control, DHEW, CDC 79-8118, March 1979.