



CHAPMAN UNIVERSITY

RISK MANAGEMENT

Environmental Health and Safety

Laboratory Animal Occupational Health Program (LAOHP)

Background

Working with laboratory animals can present risks to the health and well-being of research personnel and other individuals who may have animal contact or even casual exposure.

Examples of health risks may include:

- Zoonotic diseases (infectious agents shared by humans and animals)
- Allergies to laboratory animals, particularly rodents
- Bites, scratches and other injuries
- Manipulation of hazardous materials in animals.

The purpose of the Laboratory Animal Occupational Health Program (LAOHP) is to identify, evaluate, manage and reduce potential health risks associated with the care and use of animals. By assessing an individual's risks, recommendations to prevent illness related to laboratory animal research can be made. The Chapman University LAOHP is a component of the overall Chapman University Occupational Health and Safety Program (OHSP). Chapman University EH&S collaborates with the Office of Sponsored Research to help assure the health and safety of personnel working in the Chapman University Vivarium.

Control and Prevention Strategies

Chapman University EH&S provides and maintains an occupational health and safety program (OHSP) as an essential part of the overall program of animal care and use, consistent with the requirements of CFR 1984a, b, c; DHHS 2009; PHS 2002 as well as consistent with federal, state, and local regulations and with a focus on maintaining a safe and healthy workplace. The Chapman University OHSP provides for coordination between the research program (as represented by the investigator), the animal care and use Program (as represented by the AV, IO, and IACUC), the environmental health and safety program, occupational health services, and administration (e.g., human resources, finance, and facility maintenance personnel). Chapman University operates a university-wide General Campus Safety committee as well as a Science Safety Committee that helps facilitate communication and promote ongoing evaluation of health and safety in the workplace. Other committees include Biosafety, Bloodborne Pathogen Safety, and AED/First Aid Committees. These committees are supported by the University Biosafety Officer, Chemical Hygiene Officer, and Radiation Safety Officer. In addition, the University has an Emergency Preparedness Plan and Committee to coordinate general elements of overall campus safety.

Chapman University Environmental Health & Safety (EH&S) is a functional area within the Risk Management Department which includes a comprehensive hierarchy of control and prevention

strategies that begins with the identification of hazards and the assessment of risk associated with those hazards. Managing risk involves the following steps: first, the appropriate design and operation of facilities and use of appropriate safety equipment (engineering controls); second, the development of processes and standard operating procedures (SOPs; administrative controls); and finally, the provision of appropriate personal protective equipment (PPE) for employees/participants. Special safety equipment is used in combination with appropriate management and safety practices. The University subscribes to the approach of managing risk using these strategies that requires that personnel be trained, maintain good personal hygiene, be knowledgeable about the hazards in their work environment, understand the proper selection and use of equipment, follow established procedures, and use the PPE provided. The University community subscribes to the theory and business approach that operational and day-to-day responsibility for safety in the workplace resides with the laboratory or facility supervisor (e.g., principal investigator, facility director, or a staff veterinarian) and depends on safe work practices by all employees/participants.

Hazard Identification and Risk Assessment

The institutional OHSP works to identify potential hazards in the work environment and conduct a critical assessment of the associated risks, ensuring that the risks associated with the experimental use of animals are identified and reduced to minimal and acceptable levels. Hazard identification and risk assessment are ongoing processes that involve individuals qualified to assess dangers associated with the Program and implement commensurate safeguards. Health and safety specialists with knowledge in relevant disciplines are involved in risk assessment and the development of procedures to manage such risks.

Potential hazards include experimental hazards such as biologic agents (e.g., infectious agents or toxins), chemical agents (e.g., carcinogens and mutagens), radiation (e.g., radionuclides, X-rays, lasers), and physical hazards (e.g., needles and syringes). The risks associated with unusual experimental conditions such as those encountered in field studies or wildlife research are also addressed. Other potential hazards—such as animal bites, exposure to allergens, chemical cleaning agents, wet floors, cage washers and other equipment, lifting, ladder use, and zoonoses—that are inherent in or intrinsic to animal use and University EH&S personnel work to insure that they are identified and evaluated. Once potential hazards have been identified, a critical ongoing assessment of the associated risks is conducted to determine appropriate strategies to minimize or manage the risks.

The extent and level of participation of personnel in the OHSP is based on the hazards posed by the animals and materials used (the severity or seriousness of the hazard); the exposure intensity, duration, and frequency (prevalence of the hazard); to some extent, the susceptibility (e.g., immune status) of the personnel; and the history of occupational illness and injury in the particular workplace. Ongoing identification and evaluation of hazards call for periodic inspections and reporting of potential hazardous conditions or “near miss” incidents.

Facilities, Equipment, and Monitoring

The facilities required to support the OHSP are determined consistent with current needs and will be adjusted as necessary to accommodate any changes therein. This includes the use of engineering controls and equipment to minimize exposure to anticipated hazards.

Where biologic agents are used, the Centers for Disease Control and Prevention (CDC) and National Institutes of Health (NIH) publication *Biosafety in Microbiological and Biomedical Laboratories* (BMBL; DHHS 2009) and the USDA standards (USDA 2002) are consulted for appropriate facility design and safety procedures. These design and safety features are based on the level of risk posed by the agents used.

Efforts are always made to provide for facilities, equipment, and procedures designed, selected, and developed to reduce the possibility of physical injury or health risk to personnel. Safety equipment is maintained and its function periodically validated. Appropriate methods are used for assessing and monitoring exposure to potentially hazardous biologic, chemical, and physical agents where required or where the possibility of exceeding permissible exposure limits exists.

Personnel Training

Safety depends on trained personnel who rigorously follow safe practices. Personnel at risk are provided with clearly defined procedures and, in specific situations, personal protective equipment to safely conduct their duties, understand the hazards involved, and be proficient in implementing the required safeguards. As appropriate, personnel are trained regarding zoonoses, chemical, biologic, and physical hazards (e.g., radiation and allergies), unusual conditions or agents that might be part of experimental procedures (e.g., the use of human tissue in immunocompromised animals), handling of waste materials, personal hygiene, the appropriate use of PPE, and other considerations (e.g., precautions to be taken during pregnancy, illness, or immunosuppression) as appropriate to the risk imposed by their workplace.

Personnel Hygiene

The University policies and procedures with regard to the use of good personal hygiene will often reduce the possibility of occupational injury and cross contamination. These policies address the use of suitable attire and PPE (e.g., gloves, masks, face shields, head covers, coats, coveralls, shoes or shoe covers) for use in the animal facility and laboratories in which animals are used. Soiled attire is disposed of, laundered, or decontaminated by the institution as appropriate. Personnel are instructed to wash and/or disinfect their hands and change clothing as often as necessary to maintain good personal hygiene. Personnel are advised that outer garments worn in the animal rooms should not be worn outside the animal facility unless covered. Personnel are not permitted to eat, drink, use tobacco products, apply cosmetics, or handle or apply contact lenses in rooms and laboratories where animals are housed or used.

Animal Experimentation

When selecting specific safeguards for animal experimentation with hazardous agents, careful attention is always given to procedures for animal care and housing, storage and distribution of the agents, dose preparation and administration, body fluid and tissue handling, waste and carcass disposal, items that might be used temporarily and removed from the site (e.g., written records, experimental devices, sample vials), and personal protection.

Chapman University maintains written policies and procedures governing experimentation with hazardous biologic, chemical, and physical agents. Safety education and training programs are administered by EH&S, and the University Science Safety Committee supports this process as a requirement of the University. Training materials are developed and or selected by University EH&S professionals who are knowledgeable in the evaluation and safe use of hazardous materials or procedures. Lab inspections are conducted to review the procedures and facilities to identify specific safety concerns. These inspections and related formal safety programs are used to assess hazards, determine the safeguards needed for their control, and ensure that staff have the necessary training and skills and that facilities are adequate for the safe conduct of the research. Technical support is provided to monitor and ensure compliance with institutional safety policies. A collaborative approach is used, involving the investigator and research team, attending veterinarian, animal care technician, and occupational health and safety professionals.

The University follows industry recommend practices and procedures, safety equipment, and facility requirements for working with hazardous biologic agents and materials. In the event the institution is required to handle agents of unknown risk, the procedure is to consult with appropriate CDC personnel about hazard control and medical surveillance. The University acknowledges that the use of highly pathogenic “select agents and toxins” in research requires the development of a program and procedures for procuring, maintaining, and disposing of these agents. The University further acknowledges that the use of immunodeficient or genetically modified animals (GMAs) susceptible to or shedding human pathogens, the use of human tissues and cell lines, or any infectious disease model can lead to an increased risk to the health and safety of personnel working with the animals and that hazardous agents should be contained in the study environment, for example through the use of airflow control during the handling and administering of hazardous agents, necropsies on contaminated animals, and work with chemical hazards. Waste anesthetic gases should be scavenged to limit exposure.

Personal Protection

Appropriate PPE for the protection of personnel, appropriate for the work environment, including clean institution-issued protective clothing, is provided as often as necessary. Chapman University policy is that protective clothing and equipment shall not be worn beyond the boundary of the hazardous agent work area or the animal facility. If appropriate, personnel should shower when they leave the animal care, procedure, or dose preparation areas. Personnel with potential exposure to hazardous agents or certain species shall be provided with PPE appropriate to the situation; for example, personnel exposed to nonhuman primates should have PPE such as gloves, arm protectors, suitable face masks, face shields, and goggles. Personnel working in areas where they might be exposed to contaminated airborne particulate material or vapors shall have suitable respiratory protection with respirator fit testing and training in the proper use and maintenance of the respirator.

Medical Evaluation and Preventive Medicine for Personnel

The Chapman University program of medical evaluation and preventive medicine was developed with input from trained health professionals, such as occupational health physicians and nurses. Medical determinations are made by the UCI Center for Occupational and Environmental Health Services. Confidentiality and other medical and legal factors were considered in the context of appropriate federal, state, and local regulations. A pre-employment health history and/or evaluation and/or a health history evaluation as appropriate is required before work assignment. Medical professionals determine the appropriate immunization schedule, i.e. necessity for tetanus and preexposure immunization for people at risk of infection or exposure to specific agents such as rabies virus (e.g., if working with species at risk for infection) or hepatitis B virus (e.g., if working with human blood or human tissues, cell lines, or stocks).

Vaccination is recommended if research is to be conducted on infectious diseases for which effective vaccines are available. Pre-employment or preexposure serum collection is advisable only in specific circumstances as determined by an occupational health and safety professional. In such cases, identification, traceability, retention, and storage conditions of samples shall be considered, and the purpose for which the serum samples will be used must be consistent with applicable federal and state laws.

Laboratory animal allergy has become a significant issue for individuals in contact with laboratory animals. The Chapman University medical surveillance program emphasizes the early diagnosis of allergies and include evaluation of an individual’s medical history for preexisting allergies. Personnel training includes information about laboratory animal allergies, preventive control measures, early

recognition and reporting of allergy symptoms, and proper techniques for working with animals PPE should be used to supplement, not replace, engineering or process controls. If PPE for respiratory protection is necessary, appropriate fit testing and training is provided.

Enrollment in the Program

All personnel with contact or exposure to laboratory animals must enroll in the Laboratory Animal Occupational Health Program via submission of the LAOHP questionnaire. Submission of the form is mandatory; however, for those that prefer not to participate in the program, there is a formal “opt-out” option on the questionnaire*. All completed LAOHP questionnaires are delivered by applicant personnel to the UCI Occupational & Environmental Health Services office, or the Office of Sponsored Research will either hand-carry or attach a mailing label and send your sealed envelope to the Center for Occupational and Environmental Health at UCI.

The Center for Occupational and Environmental Health will evaluate the questionnaire, make follow up arrangements with you if necessary (provide accurate contact information in Part A), and then return only Part D of this packet to the Chapman University Offices of Research and Environmental Health & Safety. As appropriate, recommendations are offered to help prevent illness and/or recommend referrals for additional medical care based on the information provided.

All individuals working with animals or listed on IACUC protocols must enroll* in the Laboratory Animal Occupational Health Program. This includes:

- Anyone listed on an IACUC protocol as research personnel;
- Anyone working with animals for research, testing, teaching, or training purposes;
- Anyone not identified above who may be entering Vivarium facilities, including but not limited to persons having contact or exposure to laboratory animals (including casual exposure), to include facility maintenance personnel, housekeeping personnel, public safety/security personnel, visiting faculty/researchers/students/guests.

*NOTE: Enrollment consists of annual submission of the LAOHP questionnaire, but you do not have to provide personal health information if you do not wish to do so.

Everyone involved with laboratory animals must submit a new LAOHP form:

- Before being added to or listed on an IACUC protocol;
- Before first contact with laboratory animals;
- Whenever there is a change in health status (e.g., worsening allergies, pregnancy, diagnosis of an immune disorder, etc.);
- Whenever exposure information changes (e.g., a new animal model is introduced in the lab);
- At least once per year.

How to Enroll

To enroll in the Laboratory Animal Occupational Health Program, complete the [LAOHP questionnaire](#).

Incidents/Accidents/Illness/Injuries including bites and/or scratches

In the event of an incident on campus that involves personal injury or illness, for which prompt emergency response might be indicated, a request for assistance is as follows:

ORANGE CAMPUS: IMMEDIATELY report the incident to Chapman University Public Safety by calling 911 from any campus phone, or if using any other phone by dialing the dispatch desk at (714) 997-6763. Public Safety is open 24 hours a day, year- round. Public Safety will provide a prompt response, and will notify the Orange Fire and/or Police Department as indicated. Chapman University Public Safety officers are experienced in proper technique for investigation and can assist and/or provide further direction with regard to an investigation.

RINKER IRVINE CAMPUS: IMMEDIATELY report any life-threatening incident to the Irvine Police Communications Bureau by calling 911 from any phone. Then, report the incident to Chapman University Public Safety by calling the dispatch desk at (714) 997-6763. Public Safety is open 24 hours a day, year- round. Chapman University Public Safety officers are experienced in proper technique for investigation and can assist and/or provide further direction with regard to an investigation.

For urgent, but non-emergency care, US HealthWorks, our Laboratory Animal Occupational Health provider has a number of clinics near our campus locations:

Rinker Campus: 15751 Rockfield Blvd., Irvine, CA 92618, Phone: (949) 206-9100 and 22741 Lambert St., Suite 1608, Lake Forest, CA 92630, Phone: (949) 581-3011

Orange Campus: 1045 North Tustin Street, Orange, CA 92867, Phone: (714) 288-8303 and 800 N Tustin Ave. Suite A, Santa Ana, CA 92705, Phone: (714) 245-0800

Accident/incident investigations

Accident/incident investigations are necessary to identify causation and to help identify deficiencies in the environment and implement corrective actions that might be indicated.

Staff, faculty and students who are assigned responsibility for an activity shall immediately investigate and report all occurrences (incidents, near miss, accidents, and illnesses).

To facilitate this process, Chapman University uses an electronic reporting format that can be accessed by all members of the university community. This way your report will be properly filed with Risk Management, and someone will be back in contact with you for further information if necessary.

The Supervisor, in collaboration with any injured parties should complete the online Incident/Accident Investigation Report. This form is found at <https://webfarm.chapman.edu/incidentreporting/Login.aspx?ReturnUrl=%2fIncidentReporting%2fIncidentForm.aspx> and should be used to report an incident and document the findings of your preliminary investigation. An incident is defined to include any event that results in injury to a person or damage to property. Complete this electronic form as soon as possible but within 24 hours of the event. Your online report will be filed with the Chapman University Risk Manager.

General Information

- **Immunocompromised:** If you are immunocompromised due to treatment of certain diseases, e.g., cancer, lupus, rheumatoid arthritis, asthma, or as a result of chronic viral illness, special considerations may need to be made for your safety. You are encouraged to confidentially discuss your condition with the Occupational Medicine Consultant or your personal care physician.
- **Female personnel:** If you are (or suspect that you are) pregnant or intend to become pregnant while a student or working at Chapman University, certain precautions may need to be taken during your pregnancy if you work with animals, biohazardous materials, radiological agents, or chemical agents. For more guidance, contact EH&S for consultation at 714-628-2888.
- **Bites and scratches:** It is important to report to your supervisor all bite wounds and scratches. Wounds must be cleansed immediately in your work area. Instructions for proper cleaning of wounds will be given to you by your supervisor. After you have cleansed the wound, go immediately to the nearest Urgent Care Facility. See <http://www.chapman.edu/faculty-staff/risk-management/reporting.aspx>
- **Ergonomics:** If you would like general information about working safely and effectively (e.g., how to lift heavy objects, manipulations with excessive repetitive motion, etc.), visit [Injury and Illness Prevention](#) at the Ergonomics at Chapman Web page or contact Environmental Health & Safety at 714-628-2888 for more information.
- If you have any concerns about other potential environmental hazards in your work area, contact Environmental Health & Safety at 714-628-2888 for follow up.

Additional Information

For more information about the risks associated with exposure to laboratory animals, contact David Lopez, the Chapman University Vivarium Manager at 714-516-5422 or by email at dlopez@chapman.edu or the Environmental Health & Safety Office at 714-516-5660 or by email at EHS@chapman.edu . The EH&S website is located at <http://www.chapman.edu/faculty-staff/environmental/index.aspx>