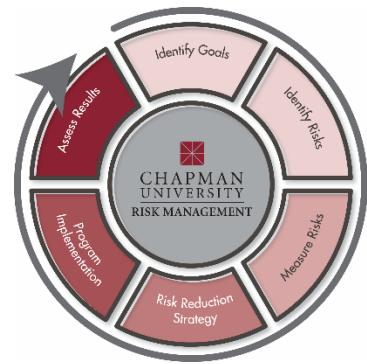




**CHAPMAN UNIVERSITY**  
RISK MANAGEMENT

Environmental Health and Safety



# Laboratory Animal Occupational Health Program

**Administered by:  
Chapman University**

**Environmental Health & Safety Department / Risk  
Management Department**

**Updated January 2022**



# CHAPMAN UNIVERSITY

## RISK MANAGEMENT

### Environmental Health and Safety

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## Laboratory Animal Occupational Health Program (LAOHP)

### Background

The use of animals in biomedical research remains essential to the discovery of the causes, diagnoses, and treatment of disease and suffering in humans and in animals.

Working with animals can present risks to the health and well-being of research personnel and other individuals who have contact with animals.

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 involved in research and teaching. By assessing an individual's risks, recommendations to prevent illness related to laboratory animal research can be made. It can also serve as a teaching and training source for all of these aspects. The Chapman University LAOHP is a component of the overall Chapman University Occupational Health and Safety Program (OHSP). Chapman University EHS collaborates with the Office of Sponsored Research to help assure the health and safety of personnel working in the Chapman University Vivarium, and aviary as well as off campus field work.

Everyone working around or with animals has a responsibility to help assure a safe and healthy work environment. The responsibilities include:

- Reviewing the LAOHP
- Completing required training in LearnUpon and CITI.
- Complying with all work rules including the wearing of appropriate PPE.
- Completing the Lab Animal Occupational Health Questionnaire (LAOHQ)

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## Purpose

The purpose of the Lab Animal Occupational Health Program (LAOHP) is to create a mechanism to help minimize the risk of adverse health effects on the personnel who are exposed to animals in all projects approved by IACUC.

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## Definitions

**Animal Research Facilities** – Any physical facility owned and/or operated by the University in which animal research is conducted, as well as any location, whether owned by University Research Personnel and/or Employee that is used by such personnel in connection with their work, to include field research.

**Employee** – Any individual, to include faculty, staff, students, and research personnel who are employed by the University on a full-time, part-time, or short-term employment status and in a position reporting to a designated supervisor.

**Outside Worker** – Any non-employee of the University who has a university-approved reason for being in any University Animal Research facility.

**Student**- a University student includes any person enrolled in a research or other university course, receiving academic credit for participation in laboratory operations.

**Supervisor**- a University principal investigator (PI), lab manager, senior researcher, administrative officer, or associate in charge of a laboratory, school unit, operation, or clinic where animals research is conducted

**Animal Worker** – Any individual, including Employees or Outside Workers whose work requires that they have physical contact with any research animal. This includes not only work in University run animal facilities but also field work with animals. On a case-by-case basis, EHS may determine that some persons, such as repair and housekeeping personnel, are deemed as animal workers because of exposure risks.

**EHS** – Environmental Health & Safety (EHS) is the discipline that studies and implements practical aspects of both environmental protection and Occupational Health & Safety at work. Responsibilities include but are not limited to developing, implementing, and maintaining University policies adhering to local, state and federal environmental health and safety regulations. EHS supports the needs of the University in occupational safety and health, industrial hygiene, laboratory safety, biological safety, radiation safety, emergency management, and environmental management.

**IACUC** – The Institutional Animal Care and Use Committee is responsible for oversight of the animal care and use program and its components as described in the Public Health Service (PHS) Policy on Humane Care and Use of Laboratory Animals (Policy) and the Guide for the Care and Use of Laboratory Animals (Guide).

**Enrollment** – This is the process of completing and submitting the required paperwork in connection with the LAOHP. All individuals who work in any animal research facility are required to enroll. This confers eligibility for a personal health evaluation.

**Opting out** – means that an individual may decline to have a personal health evaluation, unless EHS has stated it is a requirement for the animal work (e.g., working with mice infected with *M. tuberculosis*).

**Personal health evaluation** – is a visit and consultation with a medical professional; this is not required, and a worker may opt out unless EHS requires it for specific work.

**Risk assessment** – means an evaluation of the hazards and dangers presented when working with animals; it is a review – by EHS and the IACUC – of the risks of the work.

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## Responsibilities

**EHS** is a functional area within the Risk Management Department involved in the identification of hazards and the assessment of risk associated with those hazards. EHS is responsible to:

- Update the LAOHP as needed.
- Together with the IACUC, review animal use protocols to determine occupational health risks, evaluate and recommend proper protective measures, and identify any need for special medical monitoring.
- Assist in developing standard operating procedures (SOPs) for safe and compliant work.
- Provide respiratory protection evaluation and fit testing for individuals assigned to work in areas where the risk evaluation determined the need.
- Provide periodic inspections with the IACUC of areas where animal work occurs to evaluate risks and determine the need for protective equipment or engineering controls.
- Provide training and technical assistance to supervisors and employees upon request, and to maintain records of EHS-provided training.

**IACUC** – Identify to EHS animal handler personnel as they join and leave active list so their risk assessment requirement can be met, and ensure they understand the importance of accomplishing the occupational health requirements of this program.

## Supervisors and/or Principal Investigators

- Ensure, in collaboration with EHS, that all individuals with direct contact with animals are enrolled in the LAOHP.
- Ensure that adequate facilities, ventilation, and equipment are provided based on the hazards associated with the work being conducted.
- Ensure employees are instructed on, and follow, proper procedures and utilize protective equipment provided during their work as detailed in written SOPs.
- Implement procedures in accordance with this program, including the disclosure of hazardous materials in animal protocols for EHS review.
- Ensure all individuals are trained in proper safety procedures specific to their laboratory and provided with equipment and methods to control hazards.
- Ensure individuals have completed all required training on both LearnUpon and CITI.
- Implement corrective measures to eliminate hazards including but not limited to notifying the appropriate person to submit work orders to repair facility deficiencies, acquiring proper protective equipment, and re-educating staff on proper procedures when deficiencies are identified.
- Report all work related injuries and illnesses with the online form.  
<https://web.chapman.edu/incidentreporting/Login.aspx?ReturnUrl=%2fincidentreporting%2fincidentForm.aspx>
- Submit the Chapman Field Safety Plan if the work involves field work.
- Contact EHS to evaluate health and safety concerns.

## **Control and Prevention Strategies**

Chapman University provides and maintains an occupational health and safety program (OHSP) as an essential part of the EHS 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 principal investigator), the animal care and use Program (as represented by the Institutional official, and IACUC), the environmental health and safety program, occupational health services, and administration (e.g., human resources, finance, and facility maintenance personnel).

Chapman University Environmental Health & Safety (EHS) is a functional area within the Risk Management Department which includes a comprehensive hierarchy of control and prevention strategies that begin 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 (SOP); administrative controls; and finally, the provision of appropriate personal protective equipment (PPE) for personnel. 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 safety 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 required. 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., X-rays, lasers), and physical hazards (e.g., needles and scalpels). 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 EHS personnel work to ensure 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 potentially hazardous conditions or “near miss” incidents.

For purposes of assessing risk, EHS distinguishes between two key risk classification categories. The higher classification included people who handle or work with animals. The lower classification is for people who enter animal facilities but have no physical contact with animals.

All personnel in the higher risk classification must enroll in the Laboratory Animal Occupational Health Program via submission of the LAOHP questionnaire (LAOHQ). This is not required for those in the lower risk classification. Instead the hazards of being around animals are reviewed with the Risk Assessment Screening Questionnaire (RASQ).

### ***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 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 2020) is 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, 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 Safety 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 where animals are used. Soiled attire is disposed of, laundered, or decontaminated by 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. Personnel are not permitted to eat, drink, apply cosmetics, or handle contact lenses in rooms and laboratories where animals are housed or used.

### ***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. When 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. 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.

Because wearing respiratory equipment places a physical burden on the user, laboratory workers must be medically evaluated prior to wearing respiratory equipment. Certain individuals (e.g., persons with severe asthma, heart conditions, or claustrophobia) may not be medically qualified to wear a respirator. Because there are numerous types of respirators available, and each has specific limitations and applications, respirator selection and use require pre-approval by EHS.

### ***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 EHS. Training materials are developed and or selected by University EHS 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 chemicals. 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 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 is scavenged to limit exposure.

## ***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 as appropriate is required before work assignment (The lab animal occupational health questionnaire – LAOHQ). 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 can be 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 are provided.

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## **Enrollment in the Program**

### **Process**

Enrollment in the LAOHP, which includes completion and submission of the Lab Animal Occupational Health Questionnaire (LAOHQ) is mandatory. The LAOHQ does not ask for any personal health information. Personnel may opt out, subject to EHS approval, of the evaluation by a medical provider. Personnel who may work around animals but have no physical contact with them may instead be required to submit the Risk Assessment Screening Questionnaire (RASQ). This is determined by EHS.

Everyone directly involved with research animals must submit the LAOHQ:

- Before being added to or listed on an IACUC protocol;
- Before first contact with research/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.

The Center for Occupational and Environmental Health, University of California, Irvine, Occupational and Environmental Medicine Clinic is used by Chapman for Personal health evaluation when necessary. As



appropriate, recommendations are offered to help prevent illness and/or recommend referrals for additional medical care.

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## How to Enroll

To enroll in the Laboratory Animal Occupational Health Program, complete the Lab Animal Health Program questionnaire (LAOHQ). This is submitted via the online learning system LearnUpon. Registration for this process can be done by sending a request to EHS.

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## 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 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, Concentra, 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). The Supervisor, in collaboration with any injured parties should complete the online Incident/Accident Investigation Report.

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.

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 EHS 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. After the wound has been cleaned, go immediately to the nearest Urgent Care Facility. To report the incident 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 plans and programs

[Bloodborne Pathogen Exposure Control Plan](#) describes procedures to reduce the potential for occupation exposures to bloodborne infectious diseases. With respect to animal work this applies when any bloodborne pathogen such as human cell lines, HIV, hepatitis B virus or hepatitis C virus are used with animals. The plan lists exposure controls which includes:

- Universal/Standard precautions require that all blood and body fluids be treated as if they are infected with HBV, HCV, HIV or other pathogens.
- Used needles and other sharps are not to be sheared, bent, broken, recapped, or resheathed by hand unless absolutely required.
- All sharps contaminated or not, shall be disposed of in a puncture-resistant hard sided, labeled sharps container.

[Biological Safety Manual](#) describes procedures to reduce the risk of exposure to potentially biohazardous material, guidelines regulating the use of recombinant and synthetic nucleic acids molecules and to prevent environmental contamination. Any animal project that involves the use of

infectious agents, toxin or recombinant and/or synthetic nucleic acid molecules must be reviewed by the Institutional Biosafety Committee (IBC) before this work can be started.

[Chemical Hygiene Plan](#) provides procedural guidelines for prudent work practices in the handling, storage, and use of chemicals in the laboratory and to protect laboratory workers from the potential health hazards of the chemicals they encounter in the workplace. Any animal work involving hazardous must be reviewed by the Chemical Hygiene Officer. The use of hazardous chemicals such as isoflurane requires specific training. Contact EHS for details.

[Controlled Substance Plan](#) describes procedures and training required to use controlled substances in animal work. The only location approved for controlled substance work with animals is the vivarium and includes schedule 3 - 5. The use of controlled substances requires specific training. Contact EHS for details.

[Radiation and Laser Safety](#) The Chapman University EH&S department provides technical assistance, support and oversight of radiation safety, including guidelines for prudent work practices in the (a) handling, storage, and use of radioactive materials and (b) use of radiation-producing instruments in accordance with University policies and California regulations. The use of radiation producing equipment requires specific training. Contact EHS for details.

#### **Additional Information**

For more information about the risks associated with exposure to laboratory animals, contact

Kimberly Suh	Vivarium manager	<a href="mailto:ksuh@chapman.edu">ksuh@chapman.edu</a>	(714) 516-5504
Brian Henriquez	IACUC administrator	<a href="mailto:bhenriquez@chapman.edu">bhenriquez@chapman.edu</a>	(714) 628-2844
Chuck Sohaskey	Biosafety officer	<a href="mailto:sohaskey@chapman.edu">sohaskey@chapman.edu</a>	(714) 516-7199
Environmental Health & Safety Office		<a href="mailto:EHS@chapman.edu">EHS@chapman.edu</a>	(714) 516-5660

The EHS website is located at <http://www.chapman.edu/faculty-staff/environmental/index.aspx>