

Cal Poly Animal Handler

Occupational Health & Safety Program

The primary goal of the Cal Poly Animal Handler Occupational Health and Safety Program is to evaluate and, if necessary, address potential risks that may be associated with the use of animals in University operations. Enrollment in this program is mandatory for all Cal Poly personnel who have substantial animal contact, including faculty, staff, graduate students, undergraduate students, visiting faculty, and others involved with animals.

The Animal Handler Occupational Health and Safety Program is an important part of the overall animal care and use program and focuses on maintaining a safe and healthy workplace. The program is based on risk assessment, risk management, training, preventive medicine, and medical treatment.

All persons involved in animal research, care, and handling (including animal fluids and unfixed tissues) as defined herein, shall participate in the university animal handler occupational health and safety program. Supervisors (department chairs, faculty and other campus employees who have oversight of University employees, students, or other individuals) are responsible for ensuring the participation of individuals under their supervision.

General

- A risk-based assessment of all persons involved in animal contact is performed to determine the level of participation in the program. This assessment is initiated by a review of information provided on the completed **Animal Contact Review and Initial Health Surveillance Questionnaire** (ACRIHSQ). This assessment considers hazards:
 - posed by the animals;
 - from biological, chemical, or physical agents used in the animal activity;
 - arising from susceptibility of personnel.

Definitions

- **Animal:** Any live, vertebrate animal.
- **Animal Facility:** Any and all buildings, rooms, areas, enclosures, or vehicles including satellite facilities, used for animal confinement, transport, maintenance, breeding, or experiments inclusive of surgical manipulation. A satellite facility is any containment outside of a core facility or centrally designated or managed area in which animals are housed for more than 24 hours.
- **Risk Assessment:** The process by which risks associated with working with animals (such as hazardous biological, chemical, or physical agents; allergens; or zoonoses) are identified.
- **Risk Management:** The process by which identified risks are managed through such actions as education, training, personal protective equipment, zoonoses surveillance, or immunization.
- **Risk Training and Education:** A program of training and education about areas of risk when working with animals in general or with specific species.
- **Supervisors:** Department chairs, faculty, staff and other Cal Poly employees who have oversight of University employees, students, or other individuals who are involved with animals.

Preventive Medicine

- Participants must be enrolled in the program prior to contact with animals. Each participant completes an ACRIHSQ, which requires input from both the participant and their supervisor. The completed form is sent to the University's contract medical provider for risk assessment. A copy of the first section of the form, which outlines safety training and use of hazardous biological, chemical and physical agents, is forwarded to Environmental Health & Safety (EH&S). No medical information is included in the first section of the questionnaire.
- If screening identifies potential health risks, the medical provider will further evaluate participants, provide immunizations, order titers, give occupational medicine recommendations, and refer as appropriate. Individuals who decline participation in the **medical** evaluation portion of the program may do so by signing appropriate waivers acknowledging their awareness of risks.
- Medical care of Cal Poly personnel for work-related injuries or illness will be provided via the normal campus Worker's Compensation process.

Allergies

- Employees will be asked about allergies associated with animal handling. Employees with a history of preexisting animal allergies or asthma will be provided with information and training as appropriate, and if needed will be referred to other medical providers.

Immunizations

- All participants will have the following vaccinations documented through their ACRIHSQ:
 - Immunization with tetanus and diphtheria toxoids adsorbed (Td) will be updated according to recommendations of the Immunization Practices Advisory Committee (ACIP) of the Center for Disease Control. Booster doses will be recommended as needed.
 - Other vaccination recommendations will be determined on an individual basis after the risk assessment that reviews animal species, risk exposure, and personal health issues. The medical provider, with added consultation as needed from the Biosafety Officer, IACUC or the Principal Investigator of the project, will make this determination.

Animal-Related Illness, Injury, or Unsafe Condition

- Individuals must notify their supervisor of suspected zoonoses or suspected work-related illness or work-related injury.
- Supervisors must report work-related illness or injury as defined in the campus Worker's Compensation program administered by Human Resources for the appropriate employer (Cal Poly or Cal Poly Corporation).
- Bites and scratches should be flushed immediately with water and then scrubbed with soap and water prior to reporting for treatment. Injured personnel should report for medical attention unless the injury is very minor.
- During clinic hours, it is highly recommended that students go to the campus Health Center for treatment or referral.
- Employees (faculty and staff) should report to Med Stop, 283 Madonna Road, Suite B, San Luis Obispo, for treatment or referral during business hours.
- In the event of medical provider closure, all injured personnel should go to Sierra Vista Regional Medical Center emergency department, 1010 Murray Avenue, San Luis Obispo.
- Employees, students, volunteers, and visitors should report all unsafe conditions, practices, or equipment to the supervisor, instructor, or EH&S whenever deficiencies are noted.

Training

- Training will include personal hygiene, occupational hazards (including injuries that might be incurred while working with specific species and allergies), zoonoses, and other safety/health risks related to animal contact. Initial training is documented on the ACRIHSQ and signed by both the supervisor and the participant. Training topics presented will include, but not be limited to:
 - Description of the Cal Poly animal handler occupational health and safety program
 - General safety procedures in use/handling of animals
 - Animal Biosafety Levels
 - Facility entry/exit procedures and general safety features
 - Specific safety topics, including:
 - Zoonoses of animals
 - Animal-induced allergies and their prevention or control.
 - How to handle and report injuries, illness, or exposures, including medical assistance and health care providers
 - Points of contact for additional information.
- Specialized training will be provided as needed based on evaluation of the ACRIHSQ (e.g. training on respirator fitting and use, or Hantavirus protection for rodent field studies). Continuing occupational health and safety education will be provided as needed based on risk assessment.

Personal Hygiene

- For Animal Biosafety Level II or higher, the department will provide animal handlers with suitable clothing, laundry arrangements and storage for street clothing as determined by the supervisor. Eating, drinking, and smoking are prohibited in all animal rooms.

Serum Banking

- The University Biosafety Officer will assess which program participants, if any, should submit a serum sample for storage based on risk assessment. Storage and maintenance of sera will be the responsibility of the campus contract medical provider.

Individuals Covered Under This Program

Cal Poly Employees

- Enrollment in this program is mandatory for all University employees who have substantial animal contact. This includes but is not limited to faculty, staff, faculty research assistants, research associates, technicians, graduate students, post-doctoral fellows, student employees, visiting faculty, professional degree students, and any others involved with animals as defined under this policy. Volunteers or visiting clients should be apprised of health and safety issues by the appropriate contact person at the animal site.

Cal Poly Corporation Employees

- Enrollment in this program is mandatory for all Corporation employees who have substantial animal contact. This includes but is not limited to faculty, staff, faculty research assistants, research associates, technicians, graduate students, post-doctoral fellows, student employees, visiting faculty, professional degree students, and any others involved with animals as defined under this policy. Volunteers or visiting clients should be apprised of health and safety issues by the appropriate contact person at the animal site.

Students

- Cal Poly students will not normally be required to enroll in the animal occupational health and safety program if their only exposure to animals is limited to structured or centrally scheduled credit-courses. However, the class instructor should provide them with information about any health considerations relative to the species with which they will be working.

Enrollment Process

- Participants will be formally enrolled using the Cal Poly ACRIHSQ for **each individual** who is listed on an IACUC Protocol for Animal Use and Care form or employee position description as working directly with animals. The questionnaire is completed at the time a new Protocol is submitted for review, when new personnel are added to the Protocol, or when requested during the hiring or employee review process. The principal investigator and the participant must complete this form.
- The IACUC will enroll animal care personnel covered by the scope of this policy.
- Instructors of classes using animals will be responsible for providing the class students with information about
 - species specific information
 - personal hygiene information
 - risk issues to humans

Responsibility for Program Components

The following persons / entities have responsibilities as delineated below for implementation of this procedure:

Environmental Health and Safety

It is the responsibility of the Office of Environmental Health and safety to:

- a) Maintain and update this Procedure as necessary.
- b) Provide consultation to Deans, Directors, Chairpersons, coordinators, Principal Investigators, managers, and supervisors regarding program compliance. E.H.&S. can provide consultation on such issues as: hazard identification and evaluation; procedures for correcting unsafe conditions; systems for communicating with employees; employee training programs; compliance strategies; and record keeping.

Institutional Animal Care and Use Committee (IACUC)

It is the responsibility of the campus IACUC to:

- a) Review submitted Animal Contact Review and Initial Health Surveillance Questionnaire forms (ACRIHSQ).

- b) Determine necessity for enrollment of identified persons in the Cal Poly Animal Handler Occupational Health & Safety Program.
- c) Make recommendations to the Dean of Research and Graduate Programs related to the suspension or termination of research or teaching activities which involve individuals who are not enrolled in the occupational health and safety program, but are working with animals.

Deans, Directors, Department Chairs, Department Heads

Please see the Cal Poly Injury and Illness Prevention Program, section 7.4 for a detailed description of responsibilities. For the specific requirements of this Procedure, it is the responsibility of Deans, Directors, Department Chairs, and Department Heads to:

- a) Develop and maintain written departmental procedures as necessary and ensure that each supervisor adheres to adopted procedures.
- b) Develop and implement an education and training program designed to instruct employees in safe work practices related to preventing injuries and illnesses.
- c) Provide necessary safety equipment, including personal protective equipment designed to prevent injuries and illnesses to employees, at no cost to the employee.

Principal Investigators and Supervisors

Please see the Cal Poly Injury and Illness Prevention Program, section 7.6 for a detailed description of responsibilities. For the specific requirements of this Procedure, it is the responsibility of Principal Investigators and Supervisors to:

- a) Develop workplace procedures to ensure effective compliance with this and other Safety Procedures.
- b) Ensure that each employee adheres to adopted procedures.
- c) Instruct employees in the recognition and avoidance of unsafe conditions. Ensure that newly hired, newly assigned or reassigned employees are properly trained in all safety procedures associated with their new duties.

Employees & Students

Please see the Cal Poly Injury and Illness Prevention Program, section 7.7 for a detailed description of responsibilities. For the specific requirements of this Procedure, it is the responsibility of all employees, including student employees, to:

- a) Read and comply with procedures and guidelines provided by their supervisors.
- b) Inform their supervisors of workplace hazards without fear of reprisal.

- c) Attend established education and training sessions; understand and comply with all applicable safety requirements. Failure to comply with established safety rules may be reflected in performance evaluations and may lead to disciplinary action consistent with procedures described in respective collective bargaining contracts, where applicable.
- d) Ask questions of their supervisors when there is concern about an unknown or potentially hazardous situation.

Appendix A

Animal Contact Review and Initial Health Surveillance Questionnaire

Animal Contact Review and Initial Health Surveillance Questionnaire (ACRIHSQ).

Part I—Sections A-C are to be completed by Supervisor/Principal Investigator (PI); **section D** by employee. Supervisor/PI only needs to complete this form one time for each individual under their supervision unless one or more of the following has changed: the duration of animal contact, the type of activity, and/or the type of animal. A faculty PI should complete this form for him/herself.

Part II—Sections A-D are confidential and are to be completed by employee. All information must be completed and returned to the University contract medical provider (a pre-addressed envelope will be provided).

Information in Parts I and II is forwarded to different groups, so participant information is needed twice.

Part I: Animal Contact Review Questionnaire

Section A: Participant Information	
Participant Name:	Date:
Empl ID:	Job Title:
Participant campus e-mail address:	
Department:	
Project name:	
PI name and phone#:	
PI e-mail address:	
Supervisor name (if different) and phone#:	
Supervisor e-mail address:	

Section B: Must be completed by supervisor of participant									
1. Species Contact. Directions: Identify the level of exposure for each species for the participant named above and checkmark the appropriate column.									
Species	Level of Exposure				Species	Level of Exposure			
	I	II	III	IV		I	II	III	IV
Amphibian	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Marine Mammal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Birds/Poultry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Mice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Horse	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cattle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Primates	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Camelid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Rabbit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dog	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Rat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reptile	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gerbil	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sheep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Guinea Pig	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Swine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hamster	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Level I No direct contact, but enters animal facility. Level II Does not conduct procedures on live animals but handles "unfixed" animal tissues and fluids. Level III Minor exposures (handles, restrains, collection of specimens or administer substances to live animals). Level IV Major exposures (performs invasive procedures such as surgery, necropsy).									

2. Education: List a basic outline of material covered in training and briefly describe training provided (e.g., discussion, presentation, reading). Training topic should include personal hygiene, zoonotic agents, animal-related illness/injury procedures, and procedures for handling animals. Also list specific zoonotic agents discussed:

Animal –related illness/injury discussed Yes No

Personal hygiene discussed Yes No

Allergies and diseases communicable from animals discussed Yes No

Species specific guides discussed Yes No

List each species specific guide given to participant named on page 1:

3. For live animals indicated under section B.1, identify any animals that are involved with or receive any of the following:

- A) Recombinant DNA No Yes
- B) Infectious Agents No Yes → specific agent: _____
- C) Bloodborne Pathogens No Yes
- D) Human Cell Lines No Yes
- E) Extremely Hazardous Agents No Yes → specific agent: _____
- F) Radiation/Radioisotopes No Yes → specific agent: _____
- G) Lasers No Yes → specific agent: _____
- H) Toxins No Yes → specific agent: _____

Specific training for all items identified in this section has been completed. No Yes

SECTION C: Supervisor Certification

By signature, I certify that the information provided is accurate, that I have provided the participant named in Section A with a copy of the Cal Poly Animal Handler Occupational Health and Safety Program, and that I have provided necessary training on the items detailed in that policy and as specified on this form. I have provided the appropriate personal protective equipment to the participant at no charge. The participant has read the relevant species-specific guides.

Printed Supervisor Name: _____

Signature: _____

Date: _____

SECTION D: Participant Certification

By signature, I certify that I have received the training documented on this form, and have reviewed a copy of the species-specific guides itemized in Section B.2. I have received the appropriate personal protective equipment, and have reviewed the Cal Poly Animal Handler Occupational Health and Safety Program.

Printed Participant Name: _____

Signature: _____

Date: _____

SUPERVISOR/PI STOP HERE; EMPLOYEE FILLS OUT PART II.

Part II: Initial Health Surveillance Questionnaire

Information in this part is confidential and should be completed by employee / student only.

You are being asked to complete this questionnaire to help us evaluate risks to your health from exposure to animals while at work. After reviewing your responses to this questionnaire, you may be contacted to discuss further medical evaluation and diagnostic procedures. If you decide to **decline** participation in this program, complete Section A and Section D only.

Section A: Participant Information			
Participant name			
Work address:			Date:
Empl ID:	Date of Birth:		M <input type="checkbox"/> F <input type="checkbox"/>
Work phone:		Campus e-mail address:	
Participants status (Check all that apply)	<input type="checkbox"/> Faculty <input type="checkbox"/> Research Assistant	<input type="checkbox"/> Student Asst. <input type="checkbox"/> Technician	<input type="checkbox"/> Student <input type="checkbox"/> Staff <input type="checkbox"/> Other:

Section B: Medical History

Immunizations

Have you ever had any of the following immunizations?

Tetanus:	yes <input type="checkbox"/>	no <input type="checkbox"/>	Don't know <input type="checkbox"/>	Year (most recent)	_____
Hepatitis B (series of 3)	yes <input type="checkbox"/>	no <input type="checkbox"/>	Don't know <input type="checkbox"/>	#1 _____ #2 _____ #3 _____	
Rabies (series of 3)	yes <input type="checkbox"/>	no <input type="checkbox"/>	Don't know <input type="checkbox"/>	#1 _____ #2 _____ #3 _____	
Rabies Titer	yes <input type="checkbox"/>	no <input type="checkbox"/>	Don't know <input type="checkbox"/>	Year (most recent)	_____

Personal Health History		Yes	No
1. Have you ever contracted an illness from animals, or experienced an animal related injury?		<input type="checkbox"/>	<input type="checkbox"/>
If yes, explain:			
Illness/injury symptoms well managed in work environment?		<input type="checkbox"/>	<input type="checkbox"/>
If no, explain:			
2. Have you been told by a physician that you have an immune compromising medical condition or are you taking medications that impair your immune system(steroids, immunosuppressive drugs, or chemotherapy)		<input type="checkbox"/>	<input type="checkbox"/>
If yes, explain			
3. Are you currently taking any medications?		<input type="checkbox"/>	<input type="checkbox"/>
If yes, please list			
4. For women: Because some animal-borne infections can affect fetal outcome, are you pregnant, or planning to become pregnant in the next year? I choose not to answer <input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
5. For individuals working with sheep:			
a. Do you have a history of known valvular disease (heart murmurs) or congenital heart disease?		<input type="checkbox"/>	<input type="checkbox"/>
If yes, date of diagnosis:			
Type of disease:			
Treatment:			
b. Do you now have or have you ever had Q-fever?		<input type="checkbox"/>	<input type="checkbox"/>
If yes, date of diagnosis:			
Environmental Allergies/Asthma		Yes	No
1. Are you allergic to any animal(s)?		<input type="checkbox"/>	<input type="checkbox"/>
If yes, list animals:			
2. Do you have any other known allergies?(e.g., Latex, animal feed, or substances/chemicals used)		<input type="checkbox"/>	<input type="checkbox"/>
3. List symptoms that occur when you are suffering from your allergies:			
Severity of Symptoms: <input type="checkbox"/> Mild <input type="checkbox"/> Moderate <input type="checkbox"/> Severe <input type="checkbox"/> N/A			
4. List treatment that you receive to relieve your allergies:			
5. Do you have asthma?		<input type="checkbox"/>	<input type="checkbox"/>
If yes, list cause(s) of asthma (if you do not know, write unknown):			
6. Do you have allergy symptoms or asthma specifically related to animals that you currently work with?		<input type="checkbox"/>	<input type="checkbox"/>
If yes, list symptoms:			
Severity of Symptoms: <input type="checkbox"/> Mild <input type="checkbox"/> Moderate <input type="checkbox"/> Severe <input type="checkbox"/> N/A		Yes	No

7. Do you have any skin problems related to work?	<input type="checkbox"/>	<input type="checkbox"/>
If yes , describe:		
8. Do you experience shortness of breath at work?	<input type="checkbox"/>	<input type="checkbox"/>
If yes , explain:		
9. Do you wear a respirator/mask to perform any activities at work?	<input type="checkbox"/>	<input type="checkbox"/>
If yes, what kind?		
Were you fit tested by EH&S staff?	<input type="checkbox"/>	<input type="checkbox"/>
Additional personal health concerns		
Do you have any health or workplace concerns not covered by the questionnaire that you feel may affect your occupational health and would like to confidentially discuss with the campus medical provider or your personal care physician?	<input type="checkbox"/>	<input type="checkbox"/>
If yes , explain:		

Section C: Signature of participant in program (Complete section A, B, C)

The above information is true and complete to the best of my knowledge and I am aware that deliberate misrepresentation may jeopardize my health. I understand that this information is confidential and will not be released without my knowledge and written permission.

Signature of Participant

Date

Section D: Signature of participant declining to participate in program (Complete sections A, D)

The completion of the Health Questionnaire is mandatory for all Cal Poly employees who qualify under the Cal Poly Animal Handler Occupational Health and Safety Program. If you have decided not to complete this questionnaire and not to participate in this aspect of the program, please date and sign. This will have no effect on your continued employment. At any time that you decide to participate in the animal handler occupational health and safety program, you may do so.

Occupational Health Questionnaire Waiver

I decline participation in the Occupational Health and Safety Program for animal handlers at this time.

- I have reviewed the Animal Handler Occupational Health and Safety Program
- I understand the occupational health risks of working with animals
- I have completed Section A and D of Part II.

Print Name of Participant

Signature of Participant

Date

Send completed and signed Questionnaire to:

Appendix B

Animal Biosafety Levels (ABL 1-3)

The following three combinations of practices, safety equipment, and facilities are used for experiments on animals infected with agents which produce, or may produce, human infection. They provide increasing levels of protection to personnel and to the environment, and are recommended as minimal standards for activities involving infected laboratory animals. These practices and procedures apply to animal projects **not** involving recombinant DNA molecules.

These three combinations, designated Animal Biosafety Levels (ABL) 1 to 3, describe animal facilities and practices applicable to work on animals infected with agents assigned to the corresponding Risk Groups 1-3.

Animal Biosafety Level 1

Standard Practices (ABL-1)

- Access to the animal facility is limited or restricted at the discretion of the laboratory or animal facility director/PI.
- Personnel wash their hands after handling cultures and animals, after removing gloves, and before leaving the animal facility.
- Eating, drinking, smoking, handling contact lenses, applying cosmetics, and storing food for human use are not permitted in animal rooms. Persons who wear contact lenses in animal rooms should also wear goggles or a face shield.
- All procedures are carefully performed to minimize the creation of aerosols. Work surfaces are decontaminated after use or after any spill of viable materials.
- Doors to animal rooms open inward, are self-closing and are kept closed when experimental animals are present.
- All wastes from the animal room are appropriately decontaminated, preferably by autoclaving, before disposal. Infected animal carcasses are incinerated after being transported from the animal room in leakproof, covered containers.
- An insect and rodent control program is in effect. Contact Facility Services at extension 6-5555 for more information.

Special Practices (ABL-1)

- The laboratory or animal facility director in coordination with the PI limits access to the animal room to personnel who have been advised of the potential hazard and who need to enter the room for program or service purposes when work is in progress. In general, persons who may be at increased risk of acquiring infection, or for whom infection might be unusually hazardous, are not allowed in the animal room.
- The laboratory or animal facility director in coordination with the PI establishes policies and procedures whereby only persons who have been advised of the potential hazard and meet any specific requirements (e.g., immunization) may enter the animal room.

- Bedding materials from animal cages are removed in such a manner as to minimize the creation of aerosols, and are disposed of in compliance with applicable institutional or local requirements.
- Cages are washed manually or in the cage washer. Temperature of final rinse water in a mechanical washer should be 180° F.
- The wearing of laboratory coats, gowns, or uniforms in the animal facility is recommended. It is further recommended that laboratory coats worn in the animal facility not be worn in other areas.
- Written Biosafety Procedures for the project are prepared or adopted. Personnel are advised of special hazards, and are required to read and to follow instructions on practices and procedures outlined in the written program.

Safety Equipment (Primary Barriers, ABL-1)

- Special containment equipment is not required for animals infected with agents assigned to Biosafety level 1.

Animal Facilities (Secondary Barriers, ABL-1)

- The animal facility is designed and constructed to facilitate cleaning and housekeeping.
- A hand washing sink is available in the room where infected animals are housed.
- If the animal facility has windows that open, they are fitted with fly screens.
- Exhaust air is discharged to the outside without being recirculated to other rooms, and it is recommended, but not required, that the direction of airflow in the animal facility is inward.
- An autoclave which can be used for decontaminating infectious laboratory waste is available in the building with the animal facility.

Animal Biosafety Level 2

Standard Practices (ABL-2)

- Access to the animal facility is limited or restricted at the discretion of the laboratory or animal facility director/PI.
- Personnel wash their hands after handling cultures and animals, after removing gloves, and before leaving the animal facility.
- Eating, drinking, smoking, handling contact lenses, applying cosmetics, and storing food for human use are not permitted in animal rooms. Persons who wear contact lenses in animal rooms should also wear goggles or a face shield.
- All procedures are carefully performed to minimize the creation of aerosols. Work surfaces are decontaminated after use or after any spill of viable materials.
- Doors to animal rooms open inward, are self-closing and are kept closed when experimental animals are present.
- All wastes from the animal room are appropriately decontaminated, preferably by autoclaving, before disposal. Infected animal carcasses are incinerated after being transported from the animal room in leakproof, covered containers.
- An insect and rodent control program is in effect. Contact Facility Services at extension 6-5555 for more information.

Special Practices (ABL-2)

- The animal facility manager in coordination with the PI limits access to the animal room to personnel who have been advised of the potential hazard and who need to enter the room for program or service purposes when work is in progress. In general, persons who may be at increased risk of acquiring infection, or for whom infection might be unusually hazardous, are not allowed in the animal room.
- The animal facility manager in coordination with the PI establishes policies and procedures whereby only persons who have been advised of the potential hazard and meet any specific requirements (e.g., immunization) may enter the animal room.
- All areas operating at ABL-2 need to have the universal biohazard symbol attached to the main entrance door(s). When the infectious agent(s) in use in the animal room requires special entry provisions (e.g., the need for immunizations and respirators) an IACUC approved Animal Use Form is posted on the access door to the animal room. This form identifies the infectious agent(s) in use, lists the name and telephone number of the project supervisor or other responsible person(s), and indicates the special requirement(s) for entering the animal room as well as any other necessary procedures and practices.
- Laboratory personnel receive appropriate immunizations or tests for the agents handled or potentially present in the laboratory (e.g., hepatitis B vaccine or TB skin testing).
- When appropriate, considering the agents handled, baseline serum samples from animal care and other at-risk personnel may be collected and stored. Additional serum samples may be collected periodically depending on the agents handled or the function of the facility. The decision to establish a serologic surveillance program must take into account the availability of methods for the assessment of antibody to the agent(s) of concern. The program should provide for the testing of serum samples at each collection interval and the communication of results to the participants.
- Laboratory personnel receive appropriate training through the PI on the potential hazards associated with the work involved, the necessary precautions to prevent exposures, and the exposure evaluation procedures. Personnel receive annual updates, or additional training as necessary for procedural or policy changes.
- A high degree of precaution must always be taken with any contaminated sharp items, including needles and syringes, slides, pipettes, capillary tubes, and scalpels. Needles and syringes or other sharp instruments are restricted in the animal facility for use only when there is no alternative, such as for parenteral injection, blood collection, or aspiration of fluids from laboratory animals and diaphragm bottles. Plasticware should be substituted for glassware whenever possible.
- Only needle-locking syringes or disposable syringe-needle units (i.e., needle is integral to the syringe) are used for injection or aspiration of infectious materials. Used disposable needles must not be bent, sheared, broken, recapped, removed from disposable syringes, or otherwise manipulated by hand before disposal; rather, they must be carefully placed in "Sharps" containers.
- Syringes which re-sheath the needle, needle-less systems, and other safe devices should be used when appropriate.
- Broken glassware must not be handled directly by hand, but must be removed by mechanical means such as a brush and dustpan, tongs, or forceps and disposed of in Sharps containers. Sharps containers filled 2/3 need to be disposed of in a campus Biohazardous Waste pickup location.
- Cultures, tissues, or specimens of body fluids are placed in a container that prevents leakage during collection, handling, processing, storage, transport, or shipping.
- Cages are appropriately decontaminated before they are cleaned and washed. Equipment and work surfaces should be decontaminated with an appropriate disinfectant on a routine basis, after work with infectious materials is finished, and especially after overt spills, splashes, or other contamination by infectious materials. Contaminated equipment must be decontaminated according to any local, state, or federal regulations before it is sent for repair or maintenance or packaged for transport in accordance with applicable local, state, or federal regulations, before removal from the facility.

- Spills and accidents which result in overt exposures to infectious materials are immediately reported to the laboratory director or PI. Medical evaluation, surveillance, and treatment are provided as appropriate and written records are maintained.
- Animals not involved in the work being performed are not permitted in the lab.

Safety Equipment (Primary Barriers, ABL-2)

- Biological safety cabinets, other physical containment devices, and/or personal protective equipment (e.g., respirators, face shields) are used whenever procedures with a high potential for creating aerosols are conducted. These include necropsy of infected animals, harvesting of tissues or fluids from infected animals or eggs, intranasal inoculation of animals, and manipulations of high concentrations or large volumes of infectious materials.
- Appropriate face/eye and respiratory protection is worn by all personnel entering animal rooms housing non-human primates.
- Laboratory coats, gowns, or uniforms are worn while in the animal room. This protective clothing is removed before leaving the animal facility.
- Special care is taken to avoid skin contamination with infectious materials. Gloves are worn when handling infected animals and when skin contact with infectious materials is unavoidable.

Animal Facilities (Secondary Barriers, ABL-2)

- The animal facility is designed and constructed to facilitate cleaning and housekeeping.
- A hand washing sink is available in the room where infected animals are housed.
- If the animal facility has windows that open, they are fitted with fly screens.
- If floor drains are provided, the drain traps are always filled with water or a suitable disinfectant.
- Exhaust air is discharged to the outside without being recirculated to other rooms, and it is recommended, but not required, that the direction of airflow in the animal facility is inward.
- An autoclave which can be used for decontaminating infectious laboratory waste is available in the building with the animal facility.

Animal Biosafety Level 3

Standard Practices (ABL-3)

- Access to the animal facility is limited or restricted at the discretion of the laboratory or animal facility manager or director/PI.
- Personnel wash their hands after handling cultures and animals, after removing gloves, and before leaving the animal facility.
- Eating, drinking, smoking, handling contact lenses, applying cosmetics, and storing food for human use are not permitted in animal rooms. Persons who wear contact lenses in animal rooms should also wear goggles or a face shield.
- All procedures are carefully performed to minimize the creation of aerosols.
- Work surfaces are decontaminated after use or after any spill of viable materials.
- Doors to animal rooms open inward, are self-closing and are kept closed when experimental animals are present.
- All wastes from the animal room are appropriately decontaminated, preferably by autoclaving, before disposal. Infected animal carcasses are incinerated after being transported from the animal room in leakproof, covered containers.

- An insect and rodent control program is in effect. Contact Facility Services at extension 6-5555 for more information.

Special Practices (ABL-3)

- The facility manager in coordination with the PI or other responsible person restricts access to the animal room to personnel who have been advised of the potential hazard and who need to enter the room for program or service purposes when infected animals are present. Persons who are at increased risk of acquiring infection, or for whom infection might be unusually hazardous, are not allowed in the animal room. Persons at increased risk may include children, pregnant women, and persons who are immunodeficient or immunosuppressed. The facility manager has the final responsibility for assessing each circumstance and determining who may enter or work in the facility.
- The facility manager in coordination with the PI establishes policies and procedures whereby only persons who have been advised of the potential hazard and meet any specific requirements (e.g., immunization) may enter the animal room.
- All areas operating at ABL-3 need to have the universal biohazard symbol (Figure 1) attached to the main entrance door(s). When the infectious agent(s) in use in the animal room requires special entry provisions (e.g., the need for immunizations and respirators) an IACUC approved Animal Use Form is posted on the access door to the animal room. This form identifies the infectious agent(s) in use, lists the name and telephone number of the project supervisor or other responsible person(s), and indicates the special requirement(s) for entering the animal room as well as any other necessary procedures and practices.
- Laboratory personnel receive appropriate immunizations or tests for the agents handled or potentially present in the laboratory (e.g., hepatitis B vaccine or TB skin testing).
- Baseline serum samples from all personnel working in the facility and other at-risk personnel may be collected and stored. Additional serum samples may be collected periodically and stored. If initiated, the serum surveillance program must take into account the availability of methods for the assessment of antibody to the agent(s) of concern. The program should provide for the testing of serum samples at each collection interval and the communication of results to the participants.
- Cal Poly's biosafety manual is adopted (manual not yet completed). Personnel are advised of special hazards, and are required to read and to follow instructions on practices and procedures outlined in the biosafety manual.
- Laboratory personnel receive appropriate training through the PI and the facility manager on the potential hazards associated with the work involved, the necessary precautions to prevent exposures, exposure evaluation procedures and emergency procedures. Personnel receive annual updates, or additional training as necessary for procedural or policy changes.
- A high degree of precaution must always be taken with any contaminated sharp items, including needles and syringes, slides, pipettes, capillary tubes, and scalpels. Needles and syringes or other sharp instruments are restricted in the animal facility for use only when there is no alternative, such as for parenteral injection, blood collection, or aspiration of fluids from laboratory animals and diaphragm bottles. Plasticware should be substituted for glassware whenever possible.
- Only needle-locking syringes or disposable syringe-needle units (i.e., needle is integral to the syringe) are used for injection or aspiration of infectious materials. Used disposable needles must not be bent, sheared, broken, recapped, removed from disposable syringes, or otherwise manipulated by hand before disposal; rather, they must be carefully placed in conveniently located "Sharps" containers. Non-disposable sharps must be placed in a hard-walled container for transport to a processing area for decontamination, preferably by autoclaving.
- Syringes which re-sheath the needle, needle-less systems, and other safe devices should be used when appropriate.
- Broken glassware must not be handled directly by hand, but must be removed by mechanical means such as a brush and dustpan, tongs, or forceps and disposed of in Sharps containers.

Sharps containers filled 2/3 need to be disposed of and should be take to a campus biohazardous waste collection area.

- Cultures, tissues, or specimens of body fluids are placed in a container that prevents leakage during collection, handling, processing, storage, transport, or shipping.
- Cages are appropriately decontaminated, preferably by autoclaving, before they are cleaned and washed. Equipment and work surfaces should be decontaminated with an appropriate disinfectant on a routine basis, after work with infectious materials is finished, and especially after overt spills, splashes, or other contamination by infectious materials. Contaminated equipment must be decontaminated and cleared by the EH&S Office before it is sent for repair or maintenance or packaged for transport in accordance with applicable local, state, or federal regulations, before removal from the facility.
- Spills and accidents which result in overt exposures to infectious materials are immediately reported to the laboratory director, facility manger (if applicable) and EH&S. Medical evaluation, surveillance, and treatment are provided as appropriate and written records are maintained.
- All wastes from the animal room are autoclaved before disposal. All animal carcasses are sent for incineration at an approved facility.
- Animals not involved in the work being performed are not permitted in the lab.

Safety Equipment (Primary Barriers, ABL-3)

- Personal protective equipment is used for all activities involving manipulations of infectious materials or infected animals.
- Wrap-around or solid-front gowns or uniforms are worn by personnel entering the animal room. Front-button laboratory coats are unsuitable. Protective gowns should be appropriately contained until decontamination or disposal.
- Personnel wear gloves when handling infected animals. Gloves are removed aseptically and autoclaved with other animal room wastes before disposal.
- Appropriate face/eye and respiratory protection is worn by all personnel entering animal rooms housing non-human primates.
- Boots, shoe covers, or other protective footwear, and disinfectant footbaths are available and used when indicated.
- Physical containment devices and equipment appropriate for the animal species are used for all procedures and manipulations of infectious materials or infected animals.
- The risk of infectious aerosols from infected animals or their bedding also can be reduced if animals are housed in partial containment caging systems, such as open cages placed in ventilated enclosures (e.g., laminar flow cabinets), solid wall and bottom cages covered with filter bonnets, or other equivalent primary containment systems.

Animal Facilities (Secondary Barriers, ABL-3)

- The animal facility is designed and constructed to facilitate cleaning and housekeeping, and is separated from areas which are open to unrestricted personnel traffic within the building. Passage through two sets of doors is the basic requirement for entry into the animal room from access corridors or other contiguous areas. Physical separation of the animal room from access corridors or other activities may also be provided by a double-doored clothes change room (showers may be included), airlock, or other access facility which requires passage through two sets of doors before entering the animal room.
- The interior surfaces of walls, floors, and ceilings are water resistant so that they may be easily cleaned. Penetrations in these surfaces are sealed or capable of being sealed to facilitate fumigation or space decontamination.

- A foot, elbow, or automatically operated hand washing sink is provided in each animal room near the exit door.
- If vacuum service (i.e., central or local) is provided, each service connection should be fitted with liquid disinfectant traps and a HEPA filter.
- If floor drains are provided, they are protected with liquid traps that are always filled with water or disinfectant.
- Windows in the animal room are non-operating and sealed.
- Animal room doors are self-closing and are kept closed when infected animals are present.
- An autoclave for decontaminating wastes is available, preferably within the animal facility. Materials are transferred to the autoclave in a covered leakproof container whose outer surface has been decontaminated.
- A non-recirculating ventilation system is provided. The supply and exhaust components of the system are balanced to provide for directional flow of air into the animal room. The exhaust air is discharged directly to the outside and clear of occupied areas and air intakes. Exhaust air from the room can be discharged without filtration or other treatment. Personnel must periodically validate that proper directional airflow is maintained.
- The HEPA filtered exhaust air from Class I or Class II biological safety cabinets or other primary containment devices is discharged directly to the outside or through the building exhaust system. Exhaust air from these primary containment devices may be recirculated within the animal room if the device is tested and certified at least every 12 months. If the HEPA filtered exhaust air from Class I or Class II biological safety cabinets is discharged to the outside through the building exhaust system, it is connected to this system in a manner (e.g., thimble unit connection) that avoids any interference with the performance of either the cabinet or building exhaust system.

Appendix C

Safety Guidelines for Animal Handlers

Environmental Health & Safety

Occupational Health for Animal Handling

Allergies and Diseases Communicable from Animals to Humans

Humans usually are not susceptible to infectious diseases suffered by animals. However, there are some important exceptions. Infections of animals may, on some occasions, produce significant disease in people. These infections are called zoonotic diseases. They are communicated from animals to humans. In many cases the animal shows little, if any, sign of illness.

A bacterium in the normal flora of a healthy animal may cause a serious disorder in a person exposed to it. While the animals have developed resistance to these microorganisms, humans with no previous exposure to the agent lack this protective immunity. One should always be aware of possible consequences when working with each type of animal and take precautions to minimize the risk of infection.

In the event that you do become ill with a fever or some other sign of infection, it is important to let the physician caring for you know of the work you do with animals. The scope of possible zoonotic infections is quite large. You will be given information on some of the specific diseases associated with the animals that you plan to work with or around. More specific and complete information can be obtained from EH&S.

Personnel with suppressed immune systems must be evaluated by their physicians prior to working with animals.

There are some common sense steps, referred to as **Universal Precautions**, which can be taken to lessen the risk of infection in general. These include cleanliness in routine tasks around animals. **Hands should be washed frequently** after handling chemicals, infectious materials, or animals, and before leaving the laboratory.

To protect against accidental exposure:

- Avoid using sharps whenever possible
- substitute manually operated pipettes for needles and syringes, and cannulae for needles
- keep hands away from the mouth, nose and eyes
- never eat, drink, smoke, or handle contact lenses in animal areas
- never apply cosmetics or take/apply medicine in animal areas
- wear gloves and a lab coat or scrubs when working in animal areas
- use other personal protective equipment as appropriate, such as a respirator to help reduce exposure to allergens
- take enough time to give injections properly; using a two person team to inoculate animals
- do not recap needles; have a proper container for disposal close by and use it

Most, if not all of these diseases and conditions can be prevented through the use of Universal Precautions. It is important to observe these precautions at all times, since it is often impossible to know which animals are carriers or are infected and about to become ill with one of these infections. It is important to have an up to date tetanus booster because of the risk of injuries from cages and implements.

All personnel should be aware that laboratory animals (particularly mice, rats, rabbits, guinea pigs, hamsters, cats, dogs, and horses) are sources of potent allergens to sensitized persons. Typical allergic symptoms may include watery eyes, runny nose, wheezing, frequent coughing, or rashes.

All bite or scratch wounds that result in bleeding should be immediately and thoroughly scrubbed and cleansed with soap and water. Injuries sustained from a cat or dog should be washed for 15 minutes. First aid kits are available if needed. The employee must inform their supervisor of the injury. Injured personnel should report for medical attention unless the injury is very minor.

1. During clinic hours, it is highly recommended that students go to Cal Poly Student Health Services (Health Center Building 27) for treatment or referral.

2. Employees (faculty and staff) should report to Med Stop, 283 Madonna Road, Suite B, San Luis Obispo for treatment or referral during business hours.
3. In the event of clinic closure, all injured personnel should go to Sierra Vista Regional Medical Center emergency department, 1010 Murray Street, San Luis Obispo.

All bite and scratch wounds, especially cat bites, should be observed for infection. If redness, pain, or swelling occurs around the wound, consult a medical provider as listed above. If you sustain such an injury **immediately** inform your supervisor.

There should be methods in place for monitoring exposure to potentially hazardous biological, chemical and physical agents. Protective devices should be used when possible and other safety practices consistent with current safety guidelines should be adopted. Potentially hazardous chemicals in the animal laboratory and care room may be found in disinfectants, cleaning agents, pesticides, and as feed and bedding contaminants. A biological safety cabinet should be used when handling infectious materials and a fume hood when handling toxic materials. All work surfaces should be decontaminated daily. All biological-contaminated materials should be decontaminated (by autoclaving or chemical disinfection) before washing, reuse, or disposal. If you are pregnant, or planning to become pregnant, you should confer with your physician or the campus BioSafety Officer prior to the possible exposure to toxic chemicals. If you have further questions about working with hazardous agents, contact EH&S.

Special Information for Women of Child Bearing Years

Toxoplasmosis is a disease that is spread most commonly by cat feces. It usually causes either no symptoms at all or a mild condition similar to Mononucleosis. Gloves should be worn when working in areas potentially contaminated with cat feces. Thorough hand washing is necessary after handling any potential source of infection. This disease is not transmitted between people except from mother to fetus during pregnancy. Toxoplasmosis can have very serious consequences for the baby, including brain damage and even death.

Since asymptomatic toxoplasma infection is common before child-bearing years, women who are planning to become pregnant and will be handling high-risk species should consider having a serological sample taken to avoid confusion about the significance of positive antibody tests in case of subsequent pregnancy. Contact EH&S for information on this testing if needed. Pregnant animal handlers, without immunity to toxoplasmosis, should not be exposed to possible toxoplasmosis infection from infected species and should not have contact with cats or their feces.

Working with hazardous agents in the first trimester of pregnancy is discouraged, in particular exposure to the possible inhalation of toxic chemicals. Contact EH&S you have questions about the safety of the agents you use.

Environmental Health & Safety

Occupational Health for Animal Handling

Care and Use of Rats, Mice and other Rodents

This Occupational Health Program is designed to inform individuals who work with animals about potential zoonoses (diseases of animals transmissible to humans), personal hygiene, and other potential hazards associated with animal exposure. This information sheet is directed toward those involved in the care and use of laboratory rodents (including rats, mice, hamsters, guinea pigs & gerbils).

Potential Zoonotic Diseases

Colony-born rodents are generally docile, but may occasionally inflict injury such as a bite or scratch. While rodents may carry organisms that may be potentially infectious to humans, the major health risk to individuals working with laboratory rodents is the development of an allergy. The development of disease in the human host often requires a preexisting state that compromises the immune system. If you have an immune-compromising medical condition or you are taking medications that impair your immune system (steroids, immunosuppressive drugs, or chemotherapy) you are at higher risk for contracting a rodent disease and should consult your physician. The following is a list of some of the potential rodent zoonoses.

Lymphocytic choriomeningitis: Lymphocytic choriomeningitis (LCM) is caused by the arenavirus commonly associated with hamsters, but does infect mice. LCM is rare in laboratory animal facilities, more common in the wild. Transmission to humans is through contact with infected tissues including tumors, feces, urine, or aerosolization of any one of these. Disease in humans is generally flu-like symptoms that range from mild to severe.

Campylobacter: This is a gram negative bacterium that has a worldwide distribution. Although most cases of human campylobacteriosis are of unknown origin, transmission is thought to occur by the fecal-oral route through contamination of food or water, or by direct contact with infected fecal material. The organism has also been isolated from houseflies. Campylobacter is shed in the feces for at least six weeks after infection. Symptoms are acute gastrointestinal illness: diarrhea with or without blood, abdominal pain, and fever. It may cause pseudoappendicitis and, rarely, septicemia and arthritis. Usually it is a brief self-limiting disease that can be treated with antibiotics.

Leptospirosis: Is bacteria found in many animals but are most commonly associated with livestock and dogs. The source of infection can be from any of the following: rats, mice, voles, hedgehogs, gerbils, squirrels, rabbits, hamsters, reptiles, dogs, sheep, goats, horses, and standing water. Leptospire are in the urine of infected animals and are transmitted through direct contact with urine or tissues via skin abrasions or contact with mucous membranes. Transmission can also occur through inhalation of infectious droplet aerosols and by ingestion. The disease in people is a multi-systemic disease with chronic sequelae. An annular rash is often present with flu like symptoms. Cardiac and neurological disorders may follow and arthritis is a common end result.

Hantavirus Infection: Hantavirus occurs mainly among the wild rodent populations in certain portions of the world. Rats and mice have been implicated in outbreaks of the disease. A hantavirus infection from rats has very rarely occurred in laboratory animal facility workers. Rodents shed the virus in their respiratory secretions, saliva, urine and feces. Transmission to humans is via inhalation of infectious aerosols. The form of the disease that has been documented after laboratory animal exposure is characterized by fever, headache, myalgia (muscle aches) and petechiae (rash) and other hemorrhagic symptoms including anemia and gastrointestinal bleeding.

Other Bacterial Diseases: There are several other bacterial diseases that are possibly, though rarely spread through working with laboratory rodents. These include yersinia and tularaemia.

Allergic Reactions to Rodents

By far the greatest occupational risk to working with rodents is allergic reaction or developing allergies. Those workers that have other allergies are at greater risk. Animal or animal products such as dander, hair, scales, fur, saliva and body waste, and urine in particular, contain powerful allergens that can cause both skin disorders and respiratory symptoms. The primary symptoms of an allergic reaction are nasal or eye symptoms, skin disorders, and asthma.

How to Protect Yourself

- Wash your hands. The single most effective preventative measure that can be taken is thorough, regular hand washing. Wash hands and arms after handling any animal. Never smoke, drink or eat in the animal rooms or before washing your hands.
- Wear gloves. When working with rodents wear appropriate gloves for the task and wash your hands after removing gloves.
- Wear respiratory protection. Dust masks should be worn when there is a risk of aerosol transmission of a zoonotic agent or when there is a medical history of allergies. Fit testing of a respiratory can be done at Employee Health Services.
- Wear other protective clothing. Lab coats should be available and worn when working with rodents. Avoid wearing street clothes while working with animals. Lab coats should be laundered at work.
- Seek Medical Attention Promptly. If you are injured on the job, promptly report the accident to your supervisor, even if it seems relatively minor. Minor cuts and abrasions should be immediately cleansed with antibacterial soap and then protected from exposure to rats and mice. For more serious injuries or if there is any question, students should report to the Cal Poly Health Center, employees (faculty and staff) to Med Stop at 283 Madonna Road, Suite B, San Luis Obispo.
- Tell your physician you work with rodents. Whenever you are ill, even if you're not certain that the illness is work-related, always mention to your physician that you work with rodents. Many zoonotic diseases have flu-like symptoms and would not normally be suspected. Your physician needs this information to make an accurate diagnosis. Questions regarding personal human health should be answered by your physician.

Environmental Health & Safety

Occupational Health for Animal Handling

Care and Use of Horses

The Occupational Health Program is designed to inform individuals who work with animals about potential zoonoses (diseases of animals transmissible to humans), personal hygiene and other potential hazards associated with animal exposure. This information sheet is directed toward those involved in the care and use of horses.

Potential Injury and Zoonotic Diseases

Horses are large farm animals that respond to gentle handling. Horses are herd animals and creatures of habit and prefer to stay with their herd and resist being moved to strange territory. They do not like surprises or fast movement and express their dislike by pinning back their ears or swishing their tails. They can deliver swift kicks and will bite. Ergonomic injuries such as back strain can occur from handling and restraining horses due to their size and strength; therefore individuals with pre-existing back or joint problems may need assistance when working with horses. Zoonotic diseases, as with other farm animals, can be a hazard when working with horses. The following lists several of the diseases that are associated with the care and handling of horses:

Rabies: Rabies virus (rhabdovirus) can infect almost any mammal. The source of infection to people is an infected animal. The virus is shed in saliva 1-14 days before clinical symptoms develop. Any random-source (animal with an unknown clinical history) or wild animal exhibiting central nervous system signs that are progressive should be considered suspect for rabies. Transmission is through direct contact with saliva, mucus membranes, or blood, e.g. bite, or saliva on an open wound. The incubation period is from 2 to 8 weeks or even longer. Symptoms are pain at the site of the bite followed by numbness. The skin becomes quite sensitive to temperature changes and there are laryngeal (throat) spasms. Muscle spasms and extreme excitability are present and convulsions occur. Rabies in unvaccinated people is almost invariably fatal.

Salmonella: This bacterium inhabits the intestinal tract of many animals and humans. Salmonella occurs worldwide and is easily transmitted through ingestion. Common symptoms of the illness are acute gastroenteritis with sudden onset of abdominal pain, diarrhea, nausea and fever. Antibiotic treatment is standard treatment for the illness

Tuberculosis: This disease may be transmitted to people through contact with birds, livestock, and non-human primates. Tuberculosis is usually transmitted by the aerosolization of infective bacilli which can be found mainly in the sputum as well as other body fluids. Contact with body fluids during necropsy may be a major mode of transmission of TB to humans. Pulmonary tuberculosis is the most common type but other organs may also be involved.

Anthrax: This is an acute bacterial infection of humans and animals which may be rapidly fatal. The disease occurs worldwide and is an occupational hazard of persons such as wool-sorters, farm workers and veterinarians in contact with infected animals or their by-products. All domestic, zoo and wild animals are potentially at risk of infection. Anthrax bacilli are released from infected carcasses and form resistant spores on exposure to air. These spores contaminate soil for many years. Humans are usually infected by inoculation from direct contact with infected animals, carcasses or animal products, and contaminated soil. Inhalation or ingestion of spores may occur. Animals are infected from contaminated feed, forage, water or carcasses. Cutaneous anthrax causes localized ulceration (sore) and scab with fever and headache and in rare circumstances be followed by more severe conditions such as septicemia and meningitis. Inhalation anthrax causes fulminating pneumonia. Intestinal anthrax is associated with acute gastroenteritis (nausea, vomiting and diarrhea).

Other Diseases: Brucellosis, cryptosporidiosis, leptospirosis, and yersiniosis are other diseases that can be transmitted through contact with horses. These diseases in humans initially exhibit as an acute gastrointestinal illness.

Allergic Reactions

The hair and dander of the horse can be a source of allergies. Proteins secreted by oil glands in an animal's skin, as well as the proteins present in an animal's saliva, can cause allergic reactions in some people. Allergies to animals can take two or more years to develop and symptoms may not subside until months after ending contact with the animal. Symptoms include sneezing, congestion, and itchy and watery eyes. It can also cause skin rash and itching.

How to Protect Yourself

- Wash your hands. The single most effective preventative measure that can be taken is thorough, regular hand washing. Wash hands and arms after handling horses. Never smoke, drink or eat in the animal areas or before washing your hands.
- Wear protective clothing. When working with horses wear appropriate coveralls and foot wear, and remove them after completing your work.
- Wear respiratory protection. Dust masks should be worn if you already have allergies and you are outside in dusty areas or during grooming. During necropsy, respiratory protection should always be worn to prevent accidental transmission of zoonoses through inhalation. If you wear a respirator, you must be fitted and tested for use through Environmental Health & Safety.
- Seek medical attention promptly. If you are injured on the job, promptly report the accident to your supervisor, even if it seems relatively minor. Minor cuts and abrasions should be immediately cleansed with antibacterial soap and then protected from exposure to dirt or animal secretions. For more serious injuries or if there is any question, students should report to the Cal Poly Health Center, employees (faculty and staff) to Med Stop at 283 Madonna Road, Suite B, San Luis Obispo.
- Tell your physician you work with horses. Whenever you are ill, even if you're not certain that the illness is work-related, always mention to your physician that you work with horses. Many zoonotic diseases have flu-like symptoms and would not normally be suspected. Your physician needs this information to make an accurate diagnosis. Questions regarding personal human health should be answered by your physician.

