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## California State Polytechnic University Animal Care and Use Handbook

**Updated 2020**

**Preface**

### Purpose of This Handbook

A core of knowledge about the ethical and humane care and use of animals in instruction and research is essential. California State Polytechnic University is committed to the ethical and humane care and use of animals and each member of the campus community utilizing these animals share this responsibility in meeting that commitment.

Faculty, staff and students who work with animals have an obligation to know about laws governing, and ethical concerns relevant to, the care and use of animals and to be familiar with the guidelines and policies established by government agencies, scientific societies and this institution. This handbook is designed to help meet these obligations and to provide you with information about the campus-wide Lab Animal Care Facility (LAF), as well as introduce you to the Institutional Animal Care and Use Committee.

### Acknowledgment

Considerable effort has been made to ensure that the information provided is accurate, however, if errors of any kind are identified, please notify the Office of Research Compliance [mayah@cpp.edu](mailto:mayah@cpp.edu) or the Lab Animal Facility Coordinator [catessler@cpp.edu](mailto:catessler@cpp.edu).

This handbook, along with others of its kind, is considered a "living document," subject to change in the light of new information and changing conditions.

# University Policy on Animal Care and Use

Cal Poly Pomona is committed to the humane care and use of animals. This commitment is reflected in the presence of four federally accredited and state licensed Veterinarians and a Certified Laboratory Animal Technologist/Registered Veterinary Technician who have as their principal concern the health and welfare of animals. The University has a designated Institutional Animal Care and Use Committee (IACUC) which is comprised not only of health care professionals (three Veterinarians and one Registered Veterinary Technician) but also an outside individual who has no affiliation to the University and is also not a scientist. These individuals, along with faculty members and Cal Poly Pomona Staff review all experiments involving animals in both research and teaching settings.

The members of the IACUC review each protocol to assure that the use of animals is justified, and the procedures proposed are humane before they can be approved. They are guided, in part, by mandates of the PHS Policy, and the Animal Welfare Act (overseen by the United States Department of Agriculture - USDA). As required by law the IACUC does a semiannual review of programs for Humane Care & Treatment as well as a semi-annual inspection of all animal facilities. Their findings are reported to the University Administration (Institutional Official), and annual reports are sent to USDA and the Office of Laboratory Animal Welfare (National Institutes of Health (NIH)). As a check to ensure proper action of our animal care and use committee, federal veterinarians under the auspices of the USDA, make annual unannounced inspections. Cal Poly Pomona also adheres to recommendations published in a manual published by the National Academy Press for the National Institutes of Health called the "*Guide for the Care and Use of Laboratory Animals*." These recommendations dictate stringent requirements for the animals’ environment, including light, temperature, humidity, etc., as well as their daily care and veterinary needs. Although many universities review only research involving animals, Cal Poly Pomona has extended its responsibility by reviewing the use of animals used in the teaching laboratory, to assure adequate humane care and use of these animals, as well.

Some students may feel intimidated to voice concerns involving animals used by an instructor in the classroom. To address this, the university has established a procedure by which any person can communicate with the IACUC by contacting: The Chair of IACUC; the University Veterinarian; the Dean of their College; or the Office of Research Compliance. This procedure, called the “*Whistleblower Policy*,” is posted in the teaching and research laboratories where animals are routinely used. It is also available on the IACUC website by clicking on the left tab “IACUC Documents” and then clicking the “Proper Treatment of Laboratory Animals”.

# Faculty and Staff Responsibilities

Individual faculty and staff members who are involved with the care and use of animals in instruction and research, including field studies of live vertebrates, are expected to study and review this handbook, and to acknowledge their acceptance of the responsibilities therein. Individuals are accountable by law to comply with the rules and regulations of the applicable statutes. Individuals are also accountable to Cal Poly Pomona to conform with the policies and guidelines adopted by this institution.

**Principle Investigators:** The responsibilities of the investigator (the term investigator is used broadly to designate those people responsible for the scientific aspects of projects that use animals in research, testing, or teaching) include the following:

### Designs experiments.

### Ensures staff qualifications and training.

### Provides for health and safety of personnel.

### Makes provisions for dealing with job-related stress.

### Maintains a scholarly, sensitive, and respectful environment and behaves in an ethical and professional manner

* + 1. **Endeavors to build public confidence in animal research**

**Staff/ protocol personnel:** The responsibility of the protocol staff/ personnel (student, unaffiliated staff, professor) include:

**1. Read and follow approved protocol**

**2. Complete IACUC and departmental required training and documentation**

**3. Report abnormal animal behavior, injury or illness to designated lead**

**4. Ask questions**

# Policies, Principles, Standards and Guidelines

## PHS Policy

The Public Health Service (PHS) Policy on the Humane Care and Use of Laboratory Animals (1986) incorporates the changes in the Public Health Service Act (PHS Act) mandated by the Health Research Extension Act of 1985 (Public Law 99-158).

The PHS Policy can be found on the IACUC <https://www.cpp.edu/research/research-compliance/iacuc/policies.shtml>.

The direct link to the PDF file of this policy is:

<https://grants.nih.gov/grants/olaw/references/phspolicylabanimals.pdf>

## US Government Principles for the Care and Use of Animals

The following “US Government Principles for the Care and Use of Animals” were developed by the US Government’s Interagency Research Animal Committee. Both PHS policy and Cal Poly Pomona policy requires that all research and instructional use of animals conform to these Principles. The link to the website of Regulations and Standards that has these Principles can be found below.

<https://www.ncbi.nlm.nih.gov/books/NBK54048/>

## The PHS Guide for the Care and Use of Laboratory Animals

In 1962, NIH contracted with the National Academy of Sciences, Institute of Animal Resources (ILAR) to develop what is now called the *Guide for the Care and Use of Laboratory Animals*, or simply the Guide. A copy of the *Guide* is available in the reference library of the Office of Research compliance and the LAF Office.

The *Guide for the Care and Use of Laboratory Animals* can be found at the following link: <https://grants.nih.gov/grants/olaw/guide-for-the-care-and-use-of-laboratory-animals.pdf>

## University Assurance of Compliance with PHS Policy

This document (“The Cal Poly Assurance”), adopts both the NIH Policy and the US Government Principles (Parts A and B above) as University policy. It is considered (as is the Guide) a "living document," and is subject to revision with changing conditions and new information. A revised Assurance must be submitted to PHS every three years. The Assurance establishes the Institutional Animal Care and Use Committee (IACUC), which shall inspect animal facilities and review research and teaching protocols.

## Independent Professional Organizations

### The American Association for Laboratory Animal Science (AALAS)

The American Association for Laboratory Animal Science (AALAS) is an organization composed of individuals and institutions professionally concerned with the production, care, and use of laboratory animals.

Individuals and institutions seeking membership in AALAS Branches (local) level, may obtain information about National AALAS or the local Branches of AALAS by visiting

<https://www.aalas.org/>

### The American College of Laboratory Animal Medicine (ACLAM)

The American College of Laboratory Animal Medicine (ACLAM) is a specialty board recognized by the American Veterinary Medical Association (AVMA). It was founded in 1957, and its purposes are to encourage education, training, and research; to establish standards of training and experience for qualification; and to certify, by examination, qualified laboratory animal specialists as diplomats.

<http://www.aclam.org/>

### The Institute of Laboratory Animal Resources (ILAR)

The Institute of Laboratory Animal Resources (ILAR) was founded in 1952 under the auspices of the National Research Council (NRC) which serves as an independent advisor to the federal government on scientific and technical questions of national importance.

### <http://dels.nas.edu/ilar>

### Miscellaneous Professional Societies

In addition to the above, several scientific societies like the American Psychological Association, American Physiological Society and the American Toxicological Association have developed guidelines of their own, usually in more detail.

# Laws, Rules and Regulations

## Federal

* + 1. **The Animal Welfare Act** -- The Animal Welfare Act of 1966 and its amendments regulate the transportation, purchase, sale, housing, care, handling and treatment of animals used in teaching and research, for exhibitions, and sold as pets. The Act specifically includes dogs, cats, nonhuman primates, guinea pigs, hamsters, rabbits, wild mammals, and any other warm-blooded animals that the Secretary of Agriculture determines are being used or are intended for use in research, testing, experimentation, exhibition purposes, or as pets.

The IACUC is responsible for reviewing all protocols involving animals to make certain that they meet criteria listed in the amendments. In addition, it must conduct semi-annual inspections of all animal study areas and animal facilities and ensure that there are no significant deviations in the use of animals from approved protocols.

* + 1. **The Health Research Extension Act of 1985 --** The Health Research Extension Act of 1985 (Public Law 99-158) directed the Secretary of Health and Human Services, acting through the Director of NIH, to establish guidelines that would affect animal research. The law can be found at the following link:

<http://grants.nih.gov/grants/olaw/references/hrea1985.htm>

* + 1. **The Controlled Substances Act of 1970 --** Potentially addictive or habituating drugs for human or animal use are classified under this law (Public Law 91-513). Information on the use of these substances can be found in Section V of this handbook. A link to this law is: <https://www.dea.gov/controlled-substances-act>
    2. **Endangered Species Act of 1973 --** This law (Public Law 93-205, as amended) seeks "to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species, and to achieve the purposes of the treaties and the conservation of wild flora and fauna worldwide." A link to the Endangered Species Act is at: <http://www.fws.gov/laws/lawsdigest/esact.html>
    3. **Other Federal Agencies and Regulations --** It is the investigator's responsibility to be aware of the various agencies which are empowered by Congress to develop rules and regulations under the applicable laws, or to promulgate guidelines and policies which affect the financing of research. Non-compliance (ignorance is no excuse) may result in the entire university having all funding delayed or withdrawn.

## State of California

* + 1. **California State Department of Health Services –** California State Department of Health Services (SDHS) has been designated by the legislature to administer the laws it has passed over the years relating to the “humane use of animals for scientific advancement in the diagnosis and treatment of human and animal diseases, for education, for research in the advancement of veterinary, dental, medical and biologic sciences, for research in animal and human nutrition, and improvement and standardization of laboratory procedures of biologic products, pharmaceuticals and drugs.”

<https://www.cdph.ca.gov/Programs/OSPHLD/LCS/Pages/LaboratoryAnimalUseApprovalProgram.aspx>

* + 1. **California Department of Fish and Game --** In 1970, the California legislature was the first in the US to prohibit the importation, taking, possession, and sale of endangered and rare species, and gave authority to the Department of Fish and Game to administer the "California Species Preservation Act." Severe penalties for those convicted of violating provisions of the Act can be imposed, and a reward system to encourage apprehension is provided.

<https://www.wildlife.ca.gov/>

<https://wildlife.ca.gov/Conservation/CESA>

<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109405&inline>

* + 1. **California State Department of Agriculture, and Other State Agencies--** In addition to the California Department of Health Services and the Department of Fish and Game, the California Department of Agriculture is also empowered to administer a number of statutes that affect the acquisition, sale, transportation and care of animals that may be used in teaching and research. Sometimes all three agencies have an interest in the control of certain species.

<http://www.cdfa.ca.gov/>

# Institutional Animal Care and Use Committee:

* Mandated by both the Animal Welfare Act and NIH policy
* Must review and approve all proposals for animal use before animals are purchased
* Must re-review protocols annually
* Must conduct facility inspections and to review the animal use program twice yearly.

The Animal Care and Use Committee (IACUC) is responsible for managing and administering the program of animal care in compliance with the federal Animal Welfare Act, the NIH [*Guide for the Care and Use of Laboratory Animals*](https://grants.nih.gov/grants/olaw/guide-for-the-care-and-use-of-laboratory-animals.pdf), the [Public Health Service Policy on Humane Care and Use of Laboratory Animals](https://grants.nih.gov/grants/olaw/references/phspolicylabanimals.pdf), and the [US Government Principles for the Utilization and Care of Vertebrate Animals Used in Testing, Research, and Training](https://olaw.nih.gov/resources/tutorial/relevant.htm#2b). The IACUC reviews all applications for Animal Use Protocols, conducts the Education Program, maintains records of the training program, and conducts the semi-annual reviews of the University program for the humane care and use of animals and the semi-annual inspections of all facilities used for maintaining animals. The University Veterinarian is responsible for providing veterinary care and supervising the Facility Coordinator.

## General Considerations When Using Animals

It is the responsibility of each investigator using animals to ensure that they and their staff (research or teaching assistants or graduate students) are informed about the current complex legalities in which animals are used. Either the University Veterinarian, the Lab Animal Facility Coordinator, Research Compliance Associate should be consulted if questions arise. The following is intended as a general summary of the administrative responsibilities associated with the use of animals in research and teaching at Cal Poly Pomona University.

### Overview of administrative procedures involved in the use of animals.

* Before animals can be used for research or teaching, an “IACUC Protocol Application” must be submitted to and approved by the IACUC. This requirement also applies to studies of vertebrate animals in their natural environment ("Field Studies") even if the animals are only trapped and released. It does not apply to the observation of animals in the field.
* Faculty, staff and students participating in animal activities must also complete IACUC training via the CITI program. The introductory modules (“For the Principle Investigator” or “For the Protocol Personnel”) should be completed along with species specific modules (for the species to be used under the proposed protocol). For animals to be kept in Building 92 (the LAF), faculty, staff and students must complete Building 92 training with the Facility Coordinator. An eRASQ (electronic risk assessment questionnaire) must also be submitted and approved by EH&S prior to protocol approval
* Before animals may be purchased, an “Animal Purchase Request” must be submitted to, and signed by, the Facilities Coordinator. This is to assure that the Lab Animal Facility (LAF) is prepared to receive the animals and that animals are only acquired for use in approved protocols.
* Special procedures are required when the animals are not housed in the animal facility or not acquired through University or Foundation purchasing.
* Animals captured in the wild may NOT be brought onto campus or into any University facility without prior approval of the Facilities Coordinator and approval of an Animal Use Protocol by the IACUC.
* Any significant changes to the protocol must be approved by the IACUC (see list of examples of significant changes in section V.E.).
* The IACUC must be advised *in writing* before any graduate or undergraduate student becomes involved in research or as a paid teaching assistant in a course utilizing live vertebrate animals in laboratory exercises.
* Protocols must be reviewed annually, and this is achieved by completing a simple form distributed by the IACUC. Protocols have an expiration time of 3 years, after which a new protocol must be submitted for IACUC approval.

**There can be very significant legal consequences for investigators and for the institution if the Animal Care and Use Program is not complied with.**

## Preparation of an IACUC Protocol Application

### Who Must Submit an IACUC Protocol Application?

All instructional and research use of live vertebrates at Cal Poly Pomona by faculty, students, or staff (including studies of unconfined animals in the field) requires the submission of a “IACUC Protocol Application” to the Institutional Animal Care and Use Committee (IACUC). The only exclusion to this policy is the teaching of “industry standards” for the care and use of farm animals (including rabbits, horses, poultry, swine, goats, cattle, and sheep) for which “industry standards” of care and use are defined in the “[*Guide for The Care And Use Of Agricultural Animals In Agricultural Research And Teaching*](https://www.asas.org/docs/default-source/default-document-library/ag_guide_3rded.pdf?sfvrsn=4).”

1. **General information about the Protocol Approval Application** - Investigators with questions regarding protocol preparation are encouraged to contact the IACUC Chair, University Veterinarian, or the Compliance Office. Careful and thorough preparation of protocol applications facilitates the review process and reduces the chance of delay in initiating projects and in review of applications by the IACUC.
   1. The IACUC Protocol Application is available as word file (Word)
   2. The completed Protocol application should be submitted to the [ePS (electronic protocol system)](https://academic.cpp.edu/animalcare/default.aspx) for review by the IACUC Chair and other IACUC members. The ePS and Protocol application can be accessed through the IACUC website [“Protocol Applications Process”](https://www.cpp.edu/research/research-compliance/iacuc/protocol.shtml)
   3. Cal Poly has been advised by the Chancellor's Office that records such as this application are considered "public records" and are subject to disclosure upon legal request by the general public through the Freedom of Information Act. However, proprietary information, and names of University employees may be deleted from material released.

### Special Instructions for protocol application submissions:

* 1. In preparing your application, ***do not delete sections****,* please respond with **N/A** if the question is not applicable to your proposed study.
  2. When preparing your application, make it obvious what text constitutes your responses to the questions. One way to do this would be to use a different font (e.g. **bold** or *italics*) for your responses.
  3. A Signature page must be submitted via a [PolyDoc](https://powerforms.docusign.net/9db2529d-3a70-41dc-aac3-e6f812543dfc?env=na3) form. The link to the signature page can be found on [ePS](https://academic.cpp.edu/animalcare/default.aspx) when viewing a protocol (“Submit a Signature Page”). [Instructions for the PolyDoc form](https://www.cpp.edu/research/research-compliance/iacuc/docs/docusign--iacuc-signature-page-sample-2019-003.pdf) can be found on the IACUC website.

### Timetable for Protocol Submission

* 1. NIH and NSF Applications: Both NIH and NSF require verification that an applicant requesting funds for animal research has an approved animal use protocol for the proposed project. This verification must normally be received within 60 days after the agency’s application receipt deadline. To allow enough time for protocol review and verification of approval, applicants should submit protocols to the IACUC no later than two weeks after the funding agency’s proposal submission deadline. If verification of IACUC approval is not received by funding agencies within the allotted 60 days, the application will be considered incomplete and may be deferred to the next review cycle.
  2. Other Research and Teaching Protocols: All other protocols must be submitted at least four weeks before the use of animals is to begin.

### Protocol Review Process

* 1. Investigators submitting animal use protocols for the first time are encouraged to submit a draft copy for an initial screening by the IACUC administrator and Chair for preliminary review. This first review ensures the application form has been accurately and completely filled in.
  2. Following this preliminary review, the IACUC administrator or Chair will contact the applicant by email, ePS or phone if clarifications or revisions are necessary (a significant number of the protocols received require some clarification or revision).
  3. The applicant sends a word file of the Protocol Application to the IACUC administrator or Chair (as an email attachment). The applicant also needs to submit a copy of the original protocol and any supporting documents to the [ePS (electronic protocol system)](https://academic.cpp.edu/animalcare/default.aspx). Once the file is submitted, the IACUC Chair will designate certain IACUC members to review the protocol.
  4. **Committee Review**: Whenever possible, protocols/changes will be distributed to committee members in advance of the scheduled meeting and listed on the Agenda. Protocols/changes must be approved by a majority of the members present at the meeting.
  5. **Expedited Review:** When necessary, protocols/changes may be reviewed by the IACUC Chair and one other committee member, selected by the Chair. At least one full week (seven days) shall pass between distribution of the Protocol Application and its approval.
  6. **Notification of Protocol Approval**: If the protocol is approved by the committee, the IACUC Chair will inform the faculty member by email (ePS) or by phone.

## Acquisition of Animals and Supplies

All arrangements for acquiring and housing live vertebrates from any source must be made through the LAF Office; arrangements for housing must be made before an order will be placed. Animals may not be purchased or otherwise acquired until a fully approved protocol is on file and the LAF Coordinator is notified.

* + 1. **Wild-caught animals -** The Facilities Coordinator will contact the faculty member who holds the protocol to establish procedures for notifying the Facilities Coordinator of intended arrival dates of any animals to be housed in the animal facility and to confirm plans for quarantine and special diets. If exotic or other animals from nature are to be used, arrangements for any necessary quarantine must be made through the LAF Office before animals are returned to campus.
    2. **Wild Nocturnal Rodents of the genus *Peromyscus***, especially *Peromyscus maniculatus*, the Deer Mouse, should be treated as though they are potentially infected with the Sin Nombre strain of the Hanta virus, a pathogen that produces Hanta Virus Pulmonary Syndrome, a disease with a ca. 50% mortality rate in normal healthy adult humans. Full details of dealing with situations in which these animals may be trapped are covered in a SOP available in the LAF Office.
    3. **Ordering of Drugs and Medical Supplies -** The LAF Coordinator and the University Veterinarian will assist, whenever possible, in ordering other animal study-related items such as drugs, medical and surgical supplies.

## Procedures for managing animal usage

The following procedures are in place to ensure positive control of the number of animals used under approved protocols. Animals housed in building 92 will be subject to the regular census process in that facility and all animals used will be charged against the appropriate protocol. Other approved protocol with animals not housed in the animal facility must be tracked via an animal tracking record ( PI to manage), and are must be reported annually (USDA covered species) to the Office of Research Compliance ( [iacuc-office@cpp.edu](mailto:iacuc-office@cpp.edu)) by **November 10**. Since both the AWAR and the PHS Policy implicitly require that institutions establish a mechanism to monitor and document the number of animals acquired, produced and used in approved activities, it is the responsibility of the Investigators to keep track of the total number of animals used against their protocol.

* + 1. **Requirement for Semester Animal Use Reports for animals not housed in Building 92.** Faculty members will contacted near the end of each academic Semester (including summer) for a report of the number of animals used under the protocol during the preceding three months. This report will be submitted in writing on the form provided by the IACUC. When 90% of the authorized number of animals have been used, the Facilities Coordinator will advise the faculty member holding the Protocol, and the Chair of the IACUC.

The form can be found on:

## Changes to Approved Protocols

All significant changes to approved protocols must be approved by the IACUC, by one of the two processes utilized for approval of new protocols (Full Committee Review or Expedited Review (DMR designated member review).

Investigators contemplating changes to approved protocols should consult the IACUC administrator, Chair or University Veterinarian if there is any reason to suspect that the change might be considered “significant.”

## Use of Hazardous Agents and Controlled Substances

* + 1. **Toxic and Hazardous Chemicals --** To protect animals and humans if toxic, hazardous, or radioactive agents will be used, the appropriate part of the Protocol Approval Application must be completed. The use of radioactive agents must be approved by both the Radiation Safety Committee and the IACUC. Investigators should familiarize themselves with the potential health hazards associated with any chemicals used in laboratory animal research by reviewing the appropriate Material Safety Data Sheet (MSDS). This information is available on the Internet: <http://www.ilpi.com/msds/> . The Environmental Health and Safety Department should be consulted in the design of safe handling procedures for potentially hazardous substances.
    2. **Controlled Substances** -- Orders for controlled substances for use in animal studies must be initiated through the designated purchasing authority of the requester’s respective department. When a purchase requisition for controlled substances is initiated, the designated purchasing authority contacts the authorized Purchasing Agent in the campus Purchasing Department, who then places the order following federal Drug Enforcement Agency (DEA) regulations. The order is then delivered to the original requester’s department. The DEA requires that all controlled substances be stored in a secure locked cabinet of substantial construction (so as not to be removed from area), and that an aliquot log be maintained by the user accounting for the entire volume of each drug received. This log should be in a numbered, bound notebook and be available for review by the IACUC during semiannual program reviews and facilities inspections.

Outdated or unused controlled substances should be delivered to the Department of Environmental Health and Safety so they can be disposed of appropriately.

* + 1. **Pathogenic Organisms --** Protocols involving any use of pathogenic organisms must be reviewed by the Microbiology/Infectious Disease Safety Committee (or IBC) before they can be approved by the IACUC. When such protocols are submitted to the IACUC, they will automatically be forwarded by the IACUC Chair to the Chair of the Microbiology/Infectious Disease Safety Committee (or IBC) and the results of this review will be forwarded to the IACUC.
    2. **Recombinant DNA** -- Protocols involving the use of recombinant DNA technology will have to be reviewed by a duly constituted and authorized Institutional Biosafety Committee at a neighboring institution. Faculty considering the development of such protocols should consult with the chair of the IACUC administrator for more information.

## Anesthesia and Analgesia

* + 1. **Procedures --** Animal procedures are reviewed by the University Veterinarian and the IACUC to ensure that proposed anesthetics and analgesics are appropriate for the species and research objectives. The LAF Coordinator and the University Veterinarian are available to provide consultation about, assistance with, or training in the proper administration and use of anesthetics and analgesics. Guidelines for anesthesia, analgesia and tranquilization can be obtained from the LAF Coordinator or University Veterinarian.

## Surgery and Postsurgical Care

### Definitions.

* + - 1. *Non-survival surgery* is defined as any surgery in which the animal will not regain consciousness. Such procedures require the same anesthesia as survival surgery but may be performed in a suitably located and equipped laboratory, subject to IACUC evaluation and approval.
      2. *Survival surgery* is defined as surgery on an animal that is expected to recover from anesthesia.
      3. *Major surgery* is defined as any surgical intervention that penetrates a body cavity or has the potential for producing a permanent handicap in an animal that is expected to recover. Examples include but are not limited to; thoracotomy, laparotomy, craniotomy, joint replacement, and limb amputation.
      4. *Minor surgery* is any operative procedure in which a major body cavity is not exposed and that causes little or no physical impairment.
      5. *Surgical sutures* in survival surgery should not remain in place longer than 7-10 days.

### Survival Surgery in non-rodents.

* + - 1. Major surgical procedures on mammals other than rats and mice must be conducted in dedicated surgical facilities intended for that purpose, using aseptic techniques.
      2. Minor surgical procedures on mammals may be performed in a suitably located and equipped laboratory area, subject to approval by the IACUC. Aseptic surgical procedures should only be performed by a well-trained team.
      3. Pre-surgical care: Food should be withheld overnight prior to anesthesia and surgery to prevent vomiting, aspiration, and problems associated with a distended intestinal tract. Water should be withheld only several hours prior to anesthesia.
      4. Post-surgical care should include observation of the animal to ensure uneventful recovery from anesthesia and surgery. More information can be obtained from the University Veterinarian or by reading the SOP for Building 92 or appropriate animal unit.
      5. CAUTION: Use of heat lamps and electric heating pads can result in burns or hyperthermia in animals that are anesthetized or otherwise unable to escape from the heat. Close observation is required and use of circulating warm water blankets is recommended whenever possible.
      6. IACUC policy requires written documentation of all survival surgical procedures, including the types and amounts of anesthetic, analgesic or tranquilizing drugs used. This documentation becomes part of the permanent record

kept by the investigator and is subject to inspection by the USDA veterinary inspectors and the IACUC during its semi-annual inspections of animal facilities and animal study areas.

### Survival Surgery in Rodents

This policy is a reflection of the NIH Guidelines. These guidelines are minimal standards and will not necessarily protect against postoperative infections or decrease the inflammatory responses.

* + - 1. FACILITY: A separate facility for rodent surgery is not necessary. A rodent surgical area can be a room or portion of a room that is easily sanitized. The immediate surgical area should not be used for other purposes during the time of surgery.
      2. PREPARATION OF ANIMAL: Hair should be removed from the surgical site and the skin should be scrubbed/cleansed with antiseptics.
      3. PREPARATION OF SURGEON: The surgeon will wear clean laboratory garments. Hands should be washed with an antiseptic surgical scrub preparation and [sterile] surgical gloves will be worn. Once gloves are in place, they should touch nothing except the prepped portion of the animal and sterile instruments.
      4. INSTRUMENTS: Surgical instruments will be sterilized, using steam (autoclaving), gas or chemical methods.
      5. POSTSURGICAL CARE: Post-surgical care should include observing the animal to ensure uneventful recovery from anesthesia and surgery; administering analgesics as required; providing adequate care for surgical incisions; and maintaining appropriate medical records.
      6. SEQUENTIAL SURGERIES: Sequential surgeries on multiple animals’ present special problems. After the first surgery, the sterilized instruments should be kept in a sterile tray containing 70-80% ethyl or isopropyl alcohol or other chemical disinfectant. The disinfectant should be replaced when contaminated with blood or other body fluids. Sterile gloves should be changed between surgeries if the surgeon touches non-sterile surfaces; alternatively, surgeons may wipe their gloves for one minute with sterile gauze pads soaked in alcoholic chlorhexidine antiseptic or betadine antiseptic.
      7. TRAINING: Training will be provided by the University Veterinarian. In addition, everyone must perform one surgery under the observation of the University Veterinarian.
      8. ANESTHESIA, ANALGESIA AND EUTHANASIA: A list of recommended methods, agents and their doses is available from the University Veterinarian.

## Immunological Procedures

### Bleeding Techniques

* + - 1. Cardiac bleeding requires general anesthesia. This technique should generally be limited to terminal collections due to the danger of cardiac tamponade or pulmonary hemorrhage and pneumothorax. Safer, alternative techniques for obtaining repeated large volumes of blood are available for rabbits (1,2).
      2. Orbital bleeding requires specific justification on the Protocol Approval Application.
      3. Use of topical irritants such as xylene to dilate vessels of the ear pinna of rabbits is discouraged.
      4. Use of suction devices applied to the ear is generally unnecessary and is discouraged because it may damage the tympanic membrane.
      5. Use of commercially available rabbit restraint devices is acceptable provided adequate care is taken to prevent injury. Use of a tranquilizer may eliminate or reduce the need to use restraint devices.
      6. The volume of blood removed at any one bleeding should not exceed 1.5% of body weight, assuming 1 ml blood weighs 1 gram (see Appendix for more details).
      7. REFERENCES: Droperidol-Fentanyl as an Aid to Blood Collection in Rabbits. Tillman, P. and Norman, C. *Laboratory Animal Science* 33(2), April 1985. Hematological Response of Rabbits to Chronic, Repetitive, Severe Bleeding for the Production of Antisera. Nerenberg, S.T. et al. *Journal of Immunological Methods* 24:19-24, 1978.

### Freund’s Adjuvant

Improper or unnecessary use of Freund's adjuvant may cause inflammation, induration or necrosis in laboratory animals. The following policy is intended to eliminate, or reduce to a minimum, animal discomfort associated with the use of this

agent in research. Departures from this policy will require adequate justification to the Committee.

* + - 1. Before using Freund's complete adjuvant, consider the use of the incomplete or another adjuvant.
      2. Complete Freund's adjuvant should be used only for the first (priming) antigenic dose. Use of two or more doses of the complete adjuvant must be justified and is rarely warranted. If more than one dose must be used, an interval of at least 3 weeks should be allowed between doses.
      3. If you have any questions or concerns regarding using this adjuvant, please contact the University veterinarian.

### Monoclonal Antibody Production

There is evidence that the mouse ascites method of monoclonal antibody production causes discomfort, distress, or pain.

Accordingly, the IACUC will critically evaluate the proposed use of the mouse ascites method before approval of proposals. Information on *in vitro* methods is available in the LAF Office.

## Euthanasia

The NIH *Guide* defines euthanasia as “the procedure of killing animals rapidly and painlessly." Campus euthanasia guidelines follow those established by the most recent *American Veterinary Medical Association Panel on Euthanasia* (a copy can be obtained from the LAF Office). Proposed euthanasia techniques must be evaluated and approved by the University Veterinarian and the IACUC during review and approval of animal use protocols.

Instruction on proper euthanasia techniques can be obtained from the LAF Coordinator or the University Veterinarian.

### Field Studies - Unplanned Euthanasia

Many field studies do not include intentionally killing animals, but some procedure must be specified for dealing with animals that are accidentally incapacitated and must, therefore, be killed for humane reasons. Under these circumstances thoracic compression or cervical dislocation may be specified as the means of euthanasia if the animals being studied are small rodents, no bigger than ground squirrels (ca. 300 g). However, all personnel who may need to perform this procedure must be properly trained and demonstrate their mastery of the technique to the Facilities Coordinator. Animals used for these demonstrations will be laboratory rodents scheduled for euthanasia and will be partially disabled with an approved method of euthanasia such as carbon dioxide.

## Reporting Deficiencies in Animal Care and Treatment

### Procedures

Any complaint by faculty, staff or students regarding the care and use of animals in instruction or research or charges of animal abuse at Cal Poly Pomona should be directed to any of the following: 1) The Chair of the Institutional Animal Care and Use Committee; 2) the University Veterinarian; or, 3) the Deans of the Colleges of Arts, Agriculture, or Science 4) Compliance Associate. Charges should be made in writing and signed by the complainant but may be made verbally. Charges initially directed to a College Dean or the University

Veterinarian will be forwarded to the Chair of the IACUC. Complaints will be kept confidential and anonymous, if requested.

### Publicizing the Whistle-blower program

In an effort to be sure that everyone who might become concerned about the treatment of animals is aware of the manner in which they can make their concerns known to someone empowered to act upon them, and to advise them of the legal protections they are guaranteed, the information in the following section is presented in two ways: 1) a poster is placed prominently in all research and teaching laboratories, and other such locations, where animals are used in approved protocols; and, 2) the same announcement is distributed as part of the course materials by faculty in all courses for which animal use protocols have been approved.

Documents on the proper treatment of animals can be found on the IACUC website at: <https://www.cpp.edu/research/research-compliance/iacuc/policies.shtml>

***Salmonella* and Reptiles**

### Explanation of risk.

Salmonellosis is a zoonotic form of gastroenteritis that is most commonly contracted through oral ingestion (e.g. contaminated chicken products). However, reptiles commonly carry the disease and transmission can occur through open cuts, splashing of contaminated material into the eyes or through inhalation of sprayed contaminated solutions. For more information regarding *Salmonella,* contact the Facility Managers at the Building 8 Vivarium or BioTrek or the University Veterinarian. Information about species that can carry the disease and how to avoid becoming infected is available on Blackboard under “SOPs for BioTrek”.

<http://www.fda.gov/AnimalVeterinary/ResourcesforYou/AnimalHealthLiteracy/ucm344319.htm>

## Food or Fluid Restriction

When experimental situations require food or fluid restriction, at least minimal quantities of food and fluid should be available to provide for development of young animals and to maintain long-term well-being of all animals.

The least restriction that will achieve the scientific objective should be used. In the case of conditioned- response research protocols, use of a highly preferred food or fluid as positive reinforcement, instead of restriction, is recommended.

## Protocols Involving Death as a Potential Endpoint

Legal, regulatory and moral responsibilities mandate that experiments conducted on animals be done with minimum pain and distress or suffering to animal subjects. For these reasons, investigators are encouraged to administer euthanasia in "death as an endpoint" experiments prior to actual death of the animals.

The guidelines indicate that animals found moribund should be euthanized. The Investigator will be required to personally assure that experimental animals are monitored. Monitoring will be made at a minimum of once per day or more frequently dependent upon the severity of symptoms and should be defined by the protocol. Monitoring will include weekends and holidays.

Some of the known signs of illness or dying which may be applied are shown below.

The following list of criteria should be considered as partial, as there may be symptoms not listed here or it may require a combination of symptoms before establishing end point morbidity.

Signs for judging morbidity (disease/illness)

* + 1. rapid breathing rate
    2. breathing rate very slow, shallow, and labored
    3. rapid weight loss
    4. ruffled fur (rough hair coat)
    5. hunched posture
    6. hypothermia or hyperthermia
    7. ulcerative dermatitis or infected tumors
    8. inappetence
    9. diarrhea or constipation

Signs for judging the moribund condition (state of dying)

1. signs for morbidity plus:
2. impaired ambulation (unable to reach food or water easily)
3. evidence of muscle atrophy or other signs of emaciation (body weight is not always proportionate)
4. any obvious prolonged illness including such signs a lethargy (drowsiness, aversion to activity, lack of physical or mental alertness), prolonged inappetence, bleeding, difficulty breathing, central nervous system disturbances, or chronic diarrhea or constipation
5. inability to remain upright

### \* The veterinarian has the authority to euthanize animals if the investigator is unavailable.

# Laboratory Animal Facility: Policies & Procedures

## Animal Housing

The LAF Office, under the direction of the Facilities Coordinator(s), provides housing and care for all vertebrates in Buildings 8 and 92. Daily animal care is the responsibility of animal care assistants who work under the direction of the LAF Coordinator(s). In order to comply with the Animal Welfare Act, animals may not be housed in research or classroom laboratories or any study areas for periods longer than 12 hours without prior approval from the IACUC and/or LAF office. For individual housing guidelines of species in Building 92, Building 8 and BioTrek, please visit the list of SOPs on the Blackboard website. Copies of the Housing Guidelines are also available at each Animal Facility.

## Husbandry Practices

* + 1. Caging, Environmental Factors, Feed, Bedding, Sanitation i.e. cleanliness, waste disposal, vermin control are all overlooked by the Lab Animal Facility Manager and specific Standard Operating Procedures (SOPs) on these topics can be found on the Blackboard website on the Discussion Board for SOPs, under SOPs for Building 92, you will find the most recent version of the SOP book.

## Animal Identification and Record Keeping

The Animal Welfare Act and the *Guide* require appropriate identification of animals and maintenance of animal records. Accepted methods of animal identification include room, rack, and cage cards; collars and bands; ear notches and tags; implantable microchips; tattoos, etc. Toe clipping is only acceptable for infant rodents and lower vertebrates when other methods of identification cannot be used. NOTE: This method must be approved by the IACUC before it is attempted.

All animal health records must be maintained for three (3) years and are subject to inspection by the USDA, granting agency (NIH, NSF and others) site visitors, and the IACUC.

SOPs on Record Keeping and Animal Identification are located in Building 92 in a binder as well as are available on the Blackboard website under “SOPs for Building 92”.

## Animal Health Practices in the Lab Animal Facility

### Preventive Medicine

* + - 1. Animal Procurement: Newly acquired animals can trigger an outbreak of disease into established colonies. In addition, production colonies maintained by suppliers occasionally experience outbreaks of disease. The LAF Coordinator monitors animal health quality from different suppliers and maintains quality control data furnished by vendors. This information can be provided to investigators to assist in choosing appropriate sources of animals.

To minimize the possibility of introducing disease into campus animal facilities, all arrangements for acquiring and housing live vertebrates must be made through the LAF Office. For information on ordering animals, refer to Section V of this handbook.

* + - 1. Quarantine and Stabilization: A quarantine period is necessary to minimize the introduction of disease into established colonies.

There are quarantine guidelines written as SOPs for each Animal Facility. They can be easily found on Blackboard and within the Animal Facility as well. For Building 92, the quarantine SOP is titled “Animal Receiving and Quarantine/ Animal Transport”.

* + - 1. Separation of Species: Physical separation of animals by species is required. This separation can be accomplished by housing different species in micro- isolator cage units, in specially ventilated isolation chambers, or in separate rooms.

### Surveillance, Diagnosis, Control and Treatment of Disease

LAF personnel check all animals at least once daily, including weekends and holidays, for signs of illness, injury or abnormal behavior (see Section IX, Appendices C and D). The observations are reported to the LAF Coordinator, who passes the information on to the University Veterinarian who, along with the investigator, decides what course of action to take.

### Emergency Care

Any health problem noted by anyone at any time, including evenings, weekends and holidays, should be immediately reported to the appropriate lead, or LAF Coordinator for animals houses in building 92, or the LAF personnel (an alternate contact would be University Police, who will then attempt to make contact with LAF personnel). The LAF staff must also be notified of facilities malfunctions (e.g., excessively hot or cold animal rooms) which appear to directly threaten animal health, whether or not Facilities Management has been notified.

## Animal Waste and Carcass Disposal

### Animal Bedding

All soiled animal bedding material is recovered from cages and pans in the dirty cage washing area of the Lab Animal Facility. It is collected in plastic bags in a safe and sanitary manner. The collected bags are then placed in dumpsters for collection by a licensed waste disposal company. Any animal bedding exposed to hazardous materials must be rendered safe by sterilization, decontamination or other appropriate measures before disposal. It is the investigator's responsibility to ensure that the LAF staff is aware that biohazardous agents are being used.

### Carcass Disposal = For information on what to do when an animal dies, please refer to the SOP Handbook for Building 92 Found on Blackboard. It is titled: “Sick or Dead Animals”

## Transportation of Animals On Campus - For information on transporting animals please refer to the SOP Handbook for Building 92, under the SOP titled “Animal Receiving and Quarantine/ Animal Transport”

## Removal of Animals From Campus - For information on transporting animals please refer to the SOP Handbook for Building 92, under the SOP titled “Animal Receiving and Quarantine/ Animal Transport”

## Animal Bites or Other Animal - Related Injuries

In the event of an animal bite or other animal - related injury, administer first aid (wash the wound thoroughly with soap and water) and report the injury promptly to the designated person (supervisor, instructor, employer, etc.) in charge. Report to the Student Health Center on campus if additional treatment is deemed necessary by the designated person in charge, or if after hours refer to the posted notices on site.

Pets in Animal Facilities, Labs or Offices**:** Pet animals (including rabbits or rodents) are not allowed in animal facilities.

## Security

Certain security measures have been established to protect the animals used in instruction and research at Cal Poly Pomona. Cooperation from all concerned in enforcing these measures is essential.

### Entrance into Animal Housing Facilities

Entrance into all animal facility rooms is subject to the authorization of the Lab Animal Facility Coordinator (Cindy Tessler) or the University Veterinarian (Dr. Melody Wallace). Under no circumstances are students, staff or faculty to give tours through the LAF facilities without the consent and prior approval of the LAF Coordinator. The LAF Office will initiate key acquisition cards to individual faculty and staff who need to gain entrance. In an effort to protect animals and minimize any possibility of disease transmission, visitors—including family members and friends—are not allowed in LAF facilities without approval by the LAF Coordinator. Tours of the LAF facilities can be schedules when requested.

### Photographs or Videotapes of Animals

Under no circumstances should photographic equipment be taken into LAF facilities without the specific prior approval of the LAF Coordinator or the University Veterinarian.

### Inquiries Regarding Animal Use

Faculty, staff and students are advised not to attempt to answer questions from individuals not affiliated with Cal Poly Pomona regarding animal care and use at this institution. All questions should be referred to the LAF Coordinator or the University Veterinarian.

Regarding threats related to animal use: All Cal Poly faculty, staff and students, and all LAF personnel should immediately report all threats, whether written or verbal, to the University Police (3070 or 911) and the LAF Coordinator, which will subsequently report to the IO and research compliance office.

### Demonstrations

In the event of a demonstration on campus related to instructional or research animal use, all Cal Poly Pomona personnel should avoid any activity that would jeopardize the health and safety of the animals, avoid any action that may result in or encourage belligerence or the disruption of routine animal care activities, and follow the directions of the University Police.

### Break-ins, Theft, and/or Acts of Vandalism

Anyone discovering a break-in, theft, and/or act of vandalism in any LAF housing area or LAF support area should inform the University Police immediately (x-3070). University Police will notify the LAF Coordinator.

The area should not be cleaned or otherwise disturbed until permission is received from the individual responsible for the investigation.

# Animal Health and Veterinary Services

## Routine Health Care

Veterinary care is an essential part of an animal care program. Adequate veterinary care is provided by the University Veterinarian and the staff of the LAF and consists of:

* + 1. Observing all animals daily to assess their health and welfare;
    2. Using appropriate methods to prevent, control, diagnose, and treat diseases and injuries;
    3. Providing guidance to users regarding handling, restraint, anesthesia, analgesia, and euthanasia; and
    4. Monitoring surgery programs and postsurgical care.

Veterinary care is the responsibility of a veterinarian who has training and experience in laboratory animal science and medicine. Emergency Health Care**:** A mechanism has been established to provide emergency care at any time an animal health problem is noted.

## Reporting Sick Animals

An animal observed to be ill or exhibiting abnormal behavior should be reported to LAF personnel as soon as possible so that it may be examined by the LAF Coordinator and, if necessary, the University Veterinarian. For your information, an “Examination of Animals” check list and a Physical Examination of Rodents check list can be found in Section IX, appendices C and D of this handbook.

## Zoonotic Diseases

About 200 diseases are transmitted from animals to humans or are common to man and animal such as toxoplasmosis, lymphocytic choriomeningitis, salmonellosis, rabies, hemorrhagic fever, etc. However, the chances for contracting these diseases are almost eliminated by the university's policy of purchasing disease-free animals from reliable vendors, following good sanitation and hygiene practices, and following a comprehensive veterinary care program which includes a quarantine period, disease prevention and control, and an animal health surveillance system. A separate handout is available in the LAF.

## Quarantine Procedures

Animals are quarantined upon arrival at the university for a period of time dependent upon the species, source, and health status, and the use for which they are intended. They are released from quarantine at the discretion of the University Veterinarian. Principal investigators should allow for this period when ordering animals.

## Necropsy and Diagnostic Laboratory Services

Faculty who plan to have these services performed on animals in conjunction with their research should discuss these plans with the University Veterinarian at the time they are writing their protocols.

## Technical Assistance and Veterinary Services

All requests for technical assistance and veterinary services are to be submitted to the LAF Office. Requests (by phone or in writing) for these services should be submitted in a timely manner to ensure that the animal(s) are correctly identified and the drugs and supplies are on hand.

# The Cal Poly Training Program

In order to meet regulatory requirements while also serving the broad educational objectives, the university has instituted a training program on animal use in instruction and research. This training program is structured as follows.

## The Core Program.

The IACUC has established a “Core Education Program” for the faculty, graduate and undergraduate students involved in approved protocols. All faculty and staff involved with teaching and/or research protocols are required to review and pass the CITI program IACUC 101 course

Faculty are responsible for training all personnel (including teaching protocols) in all procedures they will use as part of an approved protocol (they are to choose record keeping of choice). Faculty may also report student training by memo, providing all the requested information, including the signature of the student, is included.

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## Animal Husbandry Certification.

LAF staff, and students caring for animals on a volunteer basis, receive extensive training in all relevant procedures from the Facilities Coordinator. A record of the procedures each individual has been taught is kept by the Facilities Coordinator.

# Appendix

## Lab Animal Facility Crisis Plan

The following crisis plan was developed in cooperation with the campus University Police. This plan is meant to serve as a guideline in the event of an emergency in which the Lab Animal facilities are involved.

### Notification:

The campus offices listed below should be called and read the account as noted above.

|  |  |  |
| --- | --- | --- |
| TIME CALLED | OFFICE  University Police | PHONE  (909) 869-3070 |

### Coordination

The Associate Vice President for Research shall be the principal decision- maker regarding the release of information.

The Cal Poly Director of News and Publications, working in coordination with the Institutional Official, Attending Veterinarian, IACUC administrator and LAF Coordinator should organize any University response -- will classes in this building be canceled? Is student discipline involved? is the President deeply saddened by this tragedy, etc. Police should speak to police issues only.

### Spokesperson

It is important that a key spokesperson be identified as quickly as possible. The Director of News and Publications shall be the exclusive spokesperson for news media in cases involving the Institutional Animal Care and Use Committee (IACUC) or animal subjects unless the Associate Vice President for Research directs otherwise.

### Education

In any crisis, look for an opportunity to educate or learn from a situation. If the university was the victim of protesters attacking buildings, or of an arsonist or criminal behavior, or of an act of natural disaster such as an earthquake or a flood, identify someone whose work was affected, and make that person's account of what they were working on and why it was important as much a part of the information released as the damage estimate.

### Message

In the event of an attack on the University Animal Care facilities, the individual selected as spokesperson will affect the message delivered. If the person is in law enforcement, the message will focus on the amount and kind of damage, and the criminal nature of the action.

## Examination of Animals

* + 1. Check List A -- Observation Examination

1. Cage Condition -- Cage Card Information
2. Excreta in Pan/Cage
3. Feed and Water Consumption
4. Posture of Animal
5. Breathing
6. Behavior
7. Hair Coat
8. Eyes, Ears, Nose and Mouth
9. Neck, Body, and Tail
10. Locomotion -- Extremities
11. Anal/Genital Area
12. Injury/Incisions
13. Check List B -- Physical Examination ("Hands On")
    1. Weigh Animals -- Record
    2. Examine Eyes and Mucous Membranes
    3. Examine Teeth -- Incisors and Cheek Teeth
    4. Examine Ears and Ear Canal
    5. Palpate Extremities
    6. Palpate Major Lymph Nodes
    7. Examine Hocks, Footpads, and Toe Nails
    8. Examine Genitalia and Anal Regions
    9. Palpate Entire Body, Especially Neck and Abdomen
    10. Listen to Lungs and Heart if Indicated

## Physical Examination of Rodents

- For the physical examination information for rodents such as rats and mice, please refer to the SOP titled “General Rat and Mouse Husbandry” as well as the individual SOPs for each species titled “Husbandry and Care Procedures for Mice” for example. These SOPs can be found on Blackboard under “SOPs for Building 92” as well as within the Lab Animal Facility on campus.

* 1. **Blood Withdrawal Determination Formula**

A Formula for Determination Of Safe Blood Withdrawal Amounts\*

A general formula to determine a safe volume of blood that can be withdrawn is as follows: Multiply the weight of the animal (in grams) X .06 (6% animal weight is blood) X .20 (percentage of blood that can be lost without causing hypovolemic problems to the animal) = Volume that can be withdrawn (in ml).

\* Based on formulation in Manual for Assistant Laboratory Animal Technicians, AALAS Publication No. 84-1, 1984, pp.123

## Personnel responsible for the Cal Poly Pomona Animal Care and Use Program

For contact information please follow this link on the IACUC website:

<https://www.cpp.edu/research/staff.shtml>

## Basic Biologic and Physiologic Values of Common Species

The Basic Biologic and Physiologic Values of Common Species such as the Rabbit, Guinea Pig, Rat, Mouse, Golden Hamster can be found in the book titled “The Biology and Medicine of Rabbits and Rodents”, 4th Edition, by J. E. Harkness and J.E. Wagner.