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# **Texas Christian University IACUC**

## ***POLICIES AND PROCEDURES MANUAL***

### **INTRODUCTION:**

In today's society, much controversy exists concerning the use of animals in research. In the past 10 years, public opinion polls have shown a remarkable decline in the number of Americans who strongly support animal research. In the mid-1980's, more than 70% of the adult population showed strong support for humane animal research; recent poles have shown an erosion to less than 55%. Polls of our nation's young people show less than 33% believe that animal research is necessary or humane. Even those who support research have a poor understanding of how research is conducted and most still express concern that regulations governing the use of animals are not stringent enough.

The Animal Welfare Act (AWA) was first passed in 1966 to address the concerns of the American public regarding the acquisition and use of animals in research. To ensure adherence to the Act, the Congress established a self-oversight mechanism for all research institutions; this oversight is through the Institutional Animal Care and Use Committee (IACUC). The 1985 Amendments to the AWA and concurrent changes in the Public Health Service Policy of Use of Animals by Awardee Institutions (PHS Policy), increased the oversight responsibilities of the IACUC. Today, every institution conducting animal-based research, teaching or testing, must establish an IACUC to oversee the institution's animal care and use program. The IACUC's membership and responsibilities are mandated and defined by federal law and carried out through local policy.

At Texas Christian University, Fort Worth, TX, the animal use will be handled by the TCU IACUC, with guidance from our University of North Texas Health Sciences Center Veterinarian (who is a part of TCU's IACUC). Certain responsibilities of the Committee are not advisory, but carry the mandate of federal law for the IACUC to be the final authority with regards to the welfare of animals used by the institution.

The TCU Vivarium's Animal Care and Use Program encompasses all animals used by TCU for research, testing, education, or any other purpose. In addition to the IACUC, the Program is composed of TCU community members, who use animals, TCU community member not engaged in animal research, and a layperson that is completely outside the TCU community.

The use of animals in research and teaching is a privilege carrying with it unique professional and moral obligations to ensure that animals are treated humanely and in accordance with the policies of the TCU, the regulations of the Animal Welfare Act, and other laws and policies of the federal government and other agencies. The ultimate responsibility for compliance with regulations that affect the care and use of animals lies with the animal users themselves; thus, it is of paramount importance that each of you have knowledge of the regulatory requirements and local policies. Every person using animals, whether investigator, technician, student, or

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instructor, must be aware of and abide by their attendant obligations to assure that animals utilized by the University's programs are used in a humane manner.

It is also necessary for all who perform animal research, teaching, or testing, to ensure that animals are utilized only if the information gained promises to contribute to understanding of fundamental scientific principles or to the development of knowledge that can be expected to benefit humans or animals. The tenets of the "3Rs" approach to animal research, "Replacement, Reduction, and Refinement" should be followed at all times. Animals should be used only when the researcher's best efforts to find an alternative model have failed. When there is no acceptable alternative, researchers should employ the most humane methods, using the smallest number of appropriate animals necessary to obtain statistically valid results. Only when research is performed appropriately and humanely can there be assurance of the continued use of animal models in the quest for knowledge.

The IACUC Handbook contains information regarding the federal regulations impacting animal use and local policies, established by the IACUC to implement the Committee's mandated oversight responsibilities. The Handbook should be used in conjunction with governmental manuals on humane animal care, and other institutional policies.

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# **I. INSTITUTIONAL ANIMAL CARE AND USE COMMITTEE: RESPONSIBILITIES, MEMBERSHIP, AND AUTHORITY**

Since the ultimate responsibility for compliance with regulations that effect the care and use of animals lies with the investigator, it is important that he/she have a working knowledge of the basic regulatory requirements. In this manual, the types of regulations will be discussed under two broad general headings: **Involuntary and Voluntary**.

**Involuntary regulations** can be defined as those required by law or set forth as a condition of funding. There are four types of regulatory controls that can be considered as involuntary:

- The Animal Welfare Act (AWA)
- The Public Health Service Policy
- The Good Laboratory Practices Act
- The Requirements of Private Funding Agencies

**Voluntary regulations** can be defined as those that an individual or institution adheres to as part of their overall commitment to research and academic excellence. There are several types of regulatory controls which can be considered as voluntary:

- Accreditation by the Association for the Assessment and Accreditation of Laboratory Animal Care International (AAALAC)
- Requirements of Individual Institutions and IACUCs
- Requirements of Individual Users

## **A. INVOLUNTARY REGULATIONS**

### **1. Animal Welfare Act**

#### **a. Summary of the Act:**

The Animal Welfare Act of 1966 and its amendments regulate the transportation, purchase, sale, housing, care, handling, and treatment of animals used in research and teaching, for exhibition, and sold by commercial enterprises as pets. The Act specifically includes dogs, cats, nonhuman primates, guinea pigs, hamsters, rabbits, wild animals (excluding birds and cold-blooded), farm animals used in biomedical research, and any other warm-blooded animals that the Secretary of Agriculture determines are being used or are intended for use for research, experimentation, testing, teaching, exhibition purposes, or as pets. Historically, the Secretary has not regulated rats, mice and birds, however repeated lawsuits are being heard in Federal Court which attempt to change this policy.

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The Act addresses such issues as exercise for dogs, obtaining dogs and cats from sources which have complied with holding periods, care of nonhuman primates to ensure their psychological well-being, the composition and duties of an institutional animal care and use committee (IACUC), adequate veterinary care and responsibilities of the attending veterinarian, record keeping, and training of all personnel using animals in humane methods of animal maintenance and experimentation.

The Animal Welfare Act is administered by the United States Department of Agriculture (USDA). Research facilities are subject to unannounced inspections by USDA personnel and required to furnish annual reports that include, besides other information and assurances, the common names and numbers of animals used listed by procedures involving (a) no pain or distress (routine procedures which produce only momentary pain, such as injections are included in this category), (b) pain or distress for which appropriate anesthetic, analgesic or tranquilizing drugs were used, and (c) pain or distress for which the use of appropriate drugs would adversely affect the procedures, results, or interpretation of the research. The report must certify that anesthetic, analgesic, and tranquilizing drugs were used appropriately during research and testing and that the principal investigator has considered alternatives to painful procedures.

Noncompliance with USDA standards for the humane handling, treatment, and transportation of animals may lead to substantial fines and/or suspension of animal research activities.

### **b. The IACUC and the ACT**

The 1985 amendment requires the Chief Executive Officer of each research facility appoint a committee consisting of at least three members including a doctor of veterinary medicine and one member who is not affiliated with the institution. The regulations promulgated to implement the amendment designate this committee as the "Institutional Animal Care and Use Committee (IACUC)" and charge it to act as an agent of the research facility in assuring compliance with the Act. Every six months at minimum the committee is required to inspect all animal facilities and study areas and to review the research facility's program to assure that the care and use of the animals conform with the regulations and standards. The Committee must file a report of its inspection with the Institutional Official of the research facility. If significant deficiencies or deviations are not corrected in accordance with the specific plan approved by the Committee, the USDA and any Federal funding agencies must be notified in writing.

The Committee must also review and approve all proposed activities involving the care and use of animals in research, testing, or teaching procedures and all subsequent significant changes of ongoing activities. As part of this review, the Committee must evaluate procedures which reduce discomfort, distress and pain, ensure that when an activity is likely to cause pain that a veterinarian has been consulted in planning for the administration of anesthetics, analgesics and tranquilizers, and ensure that paralytic agents are not employed except in the anesthetized animal.

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The IACUC must also determine that animals which experience severe or chronic pain are euthanized in a manner consistent with the design of the study, that living conditions meet the species needs, that necessary medical care will be provided, that all procedures will be performed by qualified individuals, that survival surgery will be performed aseptically and that not animal will undergo more than one operative procedure which has not be justified and approved. Methods of euthanasia must be consistent with the definition contained in the regulations.

The IACUC must also assure on behalf of the research facility that the principal investigator has considered alternatives to painful procedures and that the work being proposed does not unnecessarily duplicate previous experiments. To provide this assurance, the Committee must review the written narrative description provided by the investigator. This description must include the methods and sources used in determining that alternatives were not available.

In reviewing proposed activities and modifications, the IACUC can grant exceptions to some of the regulations and standards, if they have been adequately and scientifically justified in writing by the principal investigator.

In addition to the above requirements, the research facility is required to provide training in the following areas to scientists, animal technicians and other personnel involved with animal care and use:

- a. Humane practice of animal maintenance and experimentation
- b. Research or testing methods that reduce or eliminate the use of animals or limit pain or distress.
- c. Utilization of the information service of the National Agricultural Library.
- d. Methods whereby deficiencies in animal care and treatment should be reported.

The regulations require that each research facility establish a program of adequate veterinary care that includes: appropriate facilities, personnel and equipment; methods to control, diagnose and treat diseases; daily observation and provision of care; guidance to personnel on the use of anesthetic, analgesic and euthanasia procedures and pre- and post-procedural care.

Specific requirements for maintaining records and filing annual reports are included in the regulations along with a miscellaneous section containing a variety of requirements to which a research facility must adhere.

## **2. Public Health Service Policy**

The Public Health Service Policy on Humane Care and Use of Laboratory Animals can be found in Chapter 4206 of the NIH Manual and Chapters 1-43 of the PHS Manual. The NIH originally initiated the Policy in 1971. It was extended to all PHS activities January 1, 1979, and was revised in the spring of 1985 with implementation to be effective January 1, 1986.

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With the passage of the Health Research Extension Act of 1985 (PL-99-158), the policy was further revised and the Director of the NIH was required by law to establish guidelines that heretofore had only been a matter of the PHS policy. An additional revision was released in September 1986 that reflected the changes required by this Act.

Under the PHS policy, each institution using animals in PHS-sponsored projects must provide acceptable written assurance of its compliance with the Policy. In this Letter of Assurance, the institutions must describe:

- The Institutional Program for the Care and Use of Animals
  - The Institutional Status
  - The Institutional Animal Care and Use Committee (IACUC)
- a. The Institutional Program** must include a list of every branch and major component, the lines of authority for administering the program; the qualifications, authority and responsibility of the veterinarian(s), the membership of the IACUC and the procedures which they follow must be stated. The Occupational Health and Safety Program must be described for all those who have animal contact. A training or instruction program in the humane practices of animal care and use must be available to scientists, animal technicians and other personnel involved in animal care, treatment and use. The gross square footage, average daily census and annual usage of each animal facility must be listed.
- b. The Institutional Status** must be stated as either Category one (1) (AAALAC accredited) or Category two (2) (non-accredited). Institutions in Category two (2) must establish a reasonable plan with a specific timetable for correcting any departures from the recommendation in the Guide for the Care and Use of Laboratory Animals (1996).
- c. The IACUC** must be appointed by the Chief Executive Officer and consist of at least five members; including a veterinarian with program responsibility, a practicing scientist, an individual whose expertise is in a non-scientific area and an individual who is not affiliated with the institution. This Committee must use the Guide to review the animal facilities and the institutional program for humane care and use of animals at least once every six months and prepare reports of these evaluations for the responsible institutional official. The Committee must review and approve animal-related components of proposals and significant modifications made in ongoing activities involving the care and use of animals. The Committee is responsible for reviewing concerns involving the care and use of animals and making recommendations to the Institutional Official regarding any aspect of the animal program, the facilities, or the personnel training. The Committee is also authorized to suspend activity involving the care and use of animals as set forth in the PHS Policy.

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In reviewing the animal care and use component of a proposal, the IACUC must confirm that the project will be conducted in accordance with the AWA and consistent with the recommendations in the Guide. In addition, all procedures are reviewed to assure that pain or distress will be minimized and that (when necessary) appropriate anesthetics, analgesics and tranquilizers will be used. The living conditions and medical care available must be appropriate for the species used, and personnel conducting the procedures must be appropriately trained and qualified. Methods of euthanasia should be consistent with the recommendations of the American Veterinary Medical Association Panel on Euthanasia.

- d. The investigator** is responsible for completing a proposal in accordance with the recommendations in the PHS Policy and the instructions contained in the PHS 938 application packet. As of October 1988, the instructions for completing 398 can be found in two locations within the application package. On page 6, the research investigator's responsibilities for assuring the humane care and use of animals are clearly addressed. Detailed instructions for completing Section F of the Research Plan, that describes the use of vertebrate animals can be found on page 21.
- e. The institution** is responsible for maintaining all the necessary records to document compliance with the PHS Policy and for filing annual reports which detail any changes in the program and indicate the dates of the semi-annual inspections and programmatic reviews.
- f. The PHS Policy** described above is intended to implement and supplement the "U.S. Government Principles for the Utilization and Care of Vertebrate Animals in Testing, Research and Training." The nine principles are published in the PHS Policy and in the Appendix of the Guide. All those responsible for the design, supervision and review of the animal care and use component of a proposal should be familiar with this document.

### **3. Good Laboratory Practices Act**

In 1978, the Food and Drug Administration adopted the Good Laboratory Practices rules that applied to all regulated parties who conduct nonclinical safety assessment studies. The rules require the creation of Standard Operating Procedures for all aspects of the study including animal care and use. A Quality Assurance Unit must be established to conduct internal inspection of practices and records to insure compliance with established policies and procedures. In general, the recommendations contained in the Guide would suffice in terms of animal care when adherence is properly documented.

### **4. Private Funding Agencies**

In recent years, the requirements of many private funding agencies that fund research projects involving the care and use of laboratory animals have changed. It is important to obtain the requirements from the agency before spending time preparing a proposal. Some of these agencies not only require review of the proposal by the IACUC but also require proof of accreditation by AAALAC. In many instances, the proposals must be reviewed and approved prior to submission.

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## **B. VOLUNTARY**

### **1. Association for the Assessment and Accreditation of Laboratory Animal Care International (AAALAC)**

AAALAC was originally chartered April 30, 1965 as a voluntary organization that accredited institutional programs of animal care and use. AAALAC is governed by a Board of Trustees composed of representatives of 32 professional organizations. An 18-member Board-appointed Council on Accreditation makes recommendations based on the results of site visits to evaluate an institution's compliance with the recommendations contained in the Guide. This is a peer review process in which standards are being continually upgraded to reflect current knowledge in laboratory animal medicine and science. In its accreditation program, the AAALAC Council uses the Guide more as a compilation of regulatory "standards" and not as a set of "recommendations."

Since the AAALAC accreditation program and the Guide are so closely linked, a brief review of the Guide's history and its current contents are warranted. In 1963, the first Guide for Laboratory Animal Facilities and Care was published by the Institute for Laboratory Animal Resources (ILAR) under a contract from the NIH. Since its original release, the Guide has been revised in 1965, 1968, 1972 (when the title was changed to the Guide for the Care and Use of Laboratory Animals), 1978, 1985, and 1996. In the most recent revisions, the organization of the chapters was changed to reflect the increasing role and responsibility of the institutional program in establishing acceptable standards for the care and use of laboratory animals.

Prior to an AAALAC site visit, each institution is required to prepare a description of the institutional facilities and programs using the AAALAC Outline for Description of the Institutional Animal Care and Use Program, which follows the Guide's chapter headings.

Once accredited, an institution must submit an annual report describing changes in the program and facilities and documenting the annual usage of animals. Site visits occur at least every three years, and these visits consist of an inspection and review of policies, procedures and facilities which comprise the animal care and use programs. Should deficiencies be identified in a previously probationary period in which to make specified changes, or if the deficiencies are major, accreditation will be withdrawn. Note that TCU is currently not AAALAC approved, but is USDA approved. TCU may explore AAALAC accreditation in the near future.

### **2. Institutional or Individual IACUC Requirements**

Individual institutions or IACUCs may develop policies to assist in implementation of the AWA, PHS Policy, and/or AAALAC standards. Institutional policies may also go beyond the requirements of any federal regulation or AAALAC standard.

### **3. Individual Users**



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The instructions for completing PHS 398 clearly define the roles and responsibilities of the investigator assuring proper care and usage of laboratory animals. In addition to this requirement, it should be understood that improper care or use of an animal can result in the creation of non-experimental variables which can potentially compromise the integrity of an entire project. As part of their commitment to scientific excellence, the users should provide the impetus for setting and maintaining high standards for the care and use of laboratory animals within their individual and collective institutions. Failure to do so invites increased internal and external regulatory requirements that can drain limited institutional research resources. Good animal care is good science; the practice of good science should be the primary goal of all who have chosen careers in the scientific community.

### **B. SUMMARY**

In summary, the regulations that affect the use of animals in research, teaching and testing programs are numerous. A working knowledge of the applicable regulations is necessary if the principal investigator is to insure that proposals for funding contain the necessary information and to assure that the conduct of all research proposals is in compliance with the requirements of the regulatory and funding agencies. While the ultimate responsibility for compliance rests with the principal investigator, institutional policies should be designed to provide those responsible for compliance with the necessary resources to do so.

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**II. TEXAS CHRISTIAN UNIVERSITY INSTITUTIONAL ANIMAL CARE AND USE COMMITTEE:**

**ROLES AND RESPONSIBILITIES**

The Animal Welfare Act and PHS Policy have defined the mandated roles and responsibilities of the IACUC. This section will focus on our local IACUC and how the University administration and IACUC have implement the mandated requirements.

**A. MEMBERSHIP**

Adequate numbers of members shall be appointed to carry out the required responsibilities of the IACUC. There shall not be less than five members. The Committee shall include at least one:

1. Doctor of Veterinary Medicine, with training or experience in laboratory animal sciences and medicine, who has direct or delegated program responsibility for activities involving animals at the institution;
2. Practicing scientist experienced in research involving animals;
3. Member whose primary concerns are in the nonscientific area;
4. Individual who is not affiliated with the institution in any way other than as a member of the IACUC, and is not a member of the immediate family of a person who is affiliated with the institution. This individual should represent community interests and concerns.

The Committee can invite internal or external consultants to assist the Committee in its duties; for example in the performance of protocol review. Such consultants cannot vote, but provide their professional opinion.

**B. AUTHORITY**

The IACUC has the mandated authority to:

1. Review once every month the program for humane care and use of animals, using the ILAR Guide for the Care and Use of Laboratory Animals (Guide) and the Animal Welfare Act as bases for evaluation.
2. Inspect at least once every six months all animal facilities (including satellite facilities) and animal study areas using the Guide and Act as bases for evaluation.
3. Review concerns involving the care and use of animals.
4. Review and approve, require modifications in (to secure approval) or withhold approval of those components of activities related to the care and use of animals.

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5. Make recommendations to the Institutional Official regarding any aspect of the animal care program, facilities, or personnel training.
6. Prepare reports of the IACUC evaluations conducted as required by 1. And 2. Above, and submit the reports to the Institutional Official. A majority of the Committee members must sign the reports indicating their approval of the information submitted. Reports shall be maintained and made available to regulating agencies upon request. Reports must contain a description of the nature and extent of adherence to the Guide and Act and must identify specifically any departures from their provisions, and must state the reasons for each departure. Reports must distinguish significant deficiencies from minor deficiencies. A significant deficiency is one that is or may be a threat to the health or safety of the animals. If program or facility deficiencies are noted, the reports must contain a reasonable and specific plan and schedule for correcting each deficiency. If some or all of the facilities are accredited by AAALAC, the report should identify those facilities as such.
7. Review and approve, require modification in (to secure approval), or withhold approval of proposed significant changes regarding the use of animals in ongoing activities.
8. Ensure that scientists, animal technicians and other personnel involved with animal care, treatment and use are provided with the training in the humane practice of animal maintenance and experimentation, and the concept, availability and use of research or testing methods that limit the use of animals or animal distress.
9. The IACUC may suspend any activity that it previously approved if it determines that the activity is not being conducted in accordance with applicable provision of the Guide, Act, or NIH Assurance Statement. The IACUC may suspend an activity only after review of the matter at a convened meeting or a quorum of the IACUC and with the suspension vote of a majority of the quorum present.
  - a. If the IACUC suspends an activity involving animals, the Institutional Official in consultation with the IACUC shall review the reasons for suspension, take appropriate corrective action, and report that action with the full explanation to the NIH Office for Protection from Research Risks and APHIS.

## **C. RESPONSIBILITIES**

1. The IACUC shall establish procedures to ensure that:
  - a. Unnecessary pain or distress is avoided.
  - b. Anesthesia and analgesia are properly and effectively used where indicated; the only exception to this may be when agents must be withheld as a requirement of the study;
  - c. Painful studies requiring exemption from the use of either anesthetics or analgesia are subject to particular scrutiny, not only prior to approval, but during the experiment;
  - d. Postoperative care commensurate with current veterinary concepts is provided.

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2. The IACUC shall establish and implement policies which will provide for a system of animal care that meet the needs of the TCU and include:
  - a. The requirement that all animal care and experimentation is conducted within the guidelines as set out in the AWA and PHS policies, and any other federal, state, or institutional regulations that may be in effect;
  - b. Ensuring adequate numbers of animal care personnel are present, and that animal users and animal care personnel are qualified to perform their duties. All individuals shall receive training in the humane care and use of animals;
  - c. Ensuring that facilities and equipment meet the standards of all applicable regulations and policies;
  - d. Providing standards of husbandry and veterinary medical care that meet or exceed regulatory mandates;
  - e. Ensuring that all activities and procedures that involve animals are carried out humanely and that analgesics, anesthetics, and tranquilizing drugs are used to minimize pain;
  - f. Ensuring proper methods of euthanasia, with appropriate guidelines for timely euthanasia to minimize pain and suffering.
3. The IACUC shall assure that all animal users have the opportunity to become familiar with all federal, state, city, and institutional requirements that may apply to their work.
4. The IACUC shall ensure appropriate care of animals in all stages of their life. Adequate veterinary care must be available at all times for all animal species used by TCU Personnel.
5. The IACUC shall ensure the living conditions of animals will be appropriate for their species and contribute to their health and comfort. The housing, feeding and nonmedical care of the animals will be directed by a veterinarian or other scientist trained and experienced in the proper care, handling, and use of the species being maintained or studied.
6. The IACUC shall ensure that no research, testing project, teaching program, or any other study (including field studies) involving animals be commenced without prior IACUC approval of a written Animal Protocol Review Form (APRF); further, no animals shall be acquired before such approval. This *includes* internally-funded projects.
7. The IACUC shall review the animal care and use components of proposed research projects to ensure that procedures and practices are in compliance with the Guide, Act, NIH Assurance Statement, and any other regulations or policies which apply. When necessary, the IACUC will require further supportive information from the investigator or meet with the investigator to assure that all members of the review committee understand the procedures to be used on the animal. If there is any variance with the guidelines noted above, the IACUC will require justification for the variance on scientific grounds.
8. The animal use protocol must include the following information:

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- a. Project title (including course number if a teaching program.)
- b. Project leader(s) (a.k.a. Principal Investigator) name.
- c. Names of other Research Staff and other authorized personnel, including personnel qualifications, training, and IACUC Certification number.
- d. Departmental affiliation, mailing address, phone number(s), and lab location.
- e. Proposed start date, proposed end date.
- f. Funding agency.
- g. An indication of the use of any hazardous material including infectious agents and other biological hazards, toxic or carcinogenic chemical agents, and radioactive materials.
- h. Rationale and purpose of the proposed use of animals and the scientific goals of the research.
- i. Species and number of animals to be used with scientific justification; the number of animals used should be justified statistically.
- j. An indication of the categories of discomfort and the classification of research based on primary use.
- k. Methods of anesthesia and analgesia, including dosages and methods of use.
- l. The methods of euthanasia, if necessary.
- m. A description detailing the procedures that are carried out in the animals.
- n. Written assurance that the activities do not unnecessarily duplicate previous experiments.
- o. Assurance that procedures with animals will avoid or minimize discomfort, distress, and pain to the animals consistent with sound research design.
- p. Written assurance that the principal investigator has considered alternatives to procedures that may cause more than momentary or slight pain or distress to the animals, and has provided a written narrative description of the methods and sources, e.g., the Animal Welfare Information Center (AWIC), used to determine that alternatives were not available.
- q. Assurance that all procedures that may cause more than momentary or slight pain or distress to the animals will be performed with appropriate sedation, analgesia, or anesthesia, unless the procedure is justified for scientific reasons in writing by the investigator.
- r. Assurance that animals that would otherwise experience severe or chronic pain or distress that cannot be relieved will be painlessly euthanatized at the end of the procedure or, if appropriate, during the procedure.
- s. Assurance that more than one major survival surgical procedure will not be performed on an animal unless justified for scientific reasons and approved by the IACUC.
- t. Assurance that adequate pain relieving drugs and pre- and post-surgical care will be provided by trained personnel.
- u. Assurance that the methods of euthanasia used will be consistent with the recommendations of the American Veterinary Medical Association Panel on Euthanasia, unless a deviation is justified for scientific reasons in writing by the investigator.
- v. Description of possible clinical signs of illness or distress exhibited by the experimental animals and mode of treatment.
- w. Unusual housing and husbandry requirements.
- x. Any other information considered important or necessary and pertinent.

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- y. All information must be presented in a form that all members of the IACUC can readily understand.
9. The IACUC must be aware of all modifications to protocols. When these involve major changes in animal utilization, new protocols must be submitted.
10. The Committee shall review all protocols at least once every three years, with annual confirmation that the studies have not been changed since the commencement of the project. Protocols require renewal with full submission every three years.
11. The IACUC may invite consultants to assist in the review of complex issues. Consultants may not approve or withhold approval of an activity or vote with the IACUC unless they are also members of the IACUC.
12. Prior to protocol review, IACUC members shall be notified of proposed research projects submitted for review. Written descriptions of research projects that involve the care and use of animals shall be available to all IACUC members, and any member of the IACUC may obtain, upon request, full committee review of those research projects. If full committee review is not requested, at least one member of the IACUC, designated by the IACUC Coordinator or Chairperson, and qualified to conduct the review, shall review those research projects and have the authority to approve, require modifications in (to secure approval) or request full committee review of those research projects.  
  
If full committee review of is requested, approval of those research projects may be granted only after review at a convened, quorum meeting of the IACUC and with the approval vote of the majority present. No member may participate in the IACUC review or approval of a research project in which the member has a conflicting interest except to provide information requested by the IACUC; nor may a member who has a conflicting interest contribute to the constitution of a quorum.
13. The IACUC shall notify investigators and the institution in writing of its decision to approve or withhold approval of those activities related to the care and use of animals, or of modifications required to secure IACUC approval. If the IACUC decides to withhold approval of an activity, it shall include in its written notification a statement of the reasons for its decision and give the investigator an opportunity to respond in person or in writing.
14. Applications and proposals that have been approved by the IACUC may be subject to further appropriate review and approval by officials of the institution. However, those officials may not approve an activity involving the care and use of animals if it has not been approved by the IACUC.
15. The IACUC shall ensure that all use of animals has “scientific merit.” In many instances, the Committee will primarily rely on the review process by scientific funding agencies, such as the NIH. However, for those projects that will not be subject to external peer review for scientific merit, the IACUC may require that such be obtained externally; or alternately, the

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Committee may choose, if qualified, to assess the protocol for scientific merit itself. In such cases, the Committee may invite other scientists knowledgeable in the field of research indicated by the protocol to assist in the internal review.

### **D. MEETINGS**

The IACUC shall meet monthly and as often as necessary to fulfill its responsibilities and be satisfied that all animal use within its jurisdiction is in compliance with institutional, municipal, and federal regulations. The Committee performs inspections of all animal study areas (animal facilities, farms and laboratories) and performs programmatic reviews at least twice a year.

### **E. GENERAL**

1. The IACUC will regularly review:
  - a. Its responsibilities to meet changing needs within the institution, the scientific community, and society as a whole and expand its responsibilities, as necessary, to meet the requirements of new regulations and policies;
  - b. The concerns of the public within our own community;
  - c. The security of the animals and research facilities;
  - d. Standard operating procedures;
  - e. Policies and procedures for monitoring animal care and experimental procedures within the institution.
2. The IACUC will maintain liaison with federal and state authorities where applicable.
3. The IACUC will develop and maintain liaison with the public and foster an "open door" policy, as appropriate.
4. The IACUC will sponsor from time to time meetings or seminars on research animal science, relevant animal husbandry and the ethics of experimentation.
5. The IACUC shall achieve and maintain a high profile within the institution and in the community in order to allay some public concerns regarding animal experimentation.
6. The IACUC shall be responsive to the needs and concerns of the research and animal care community at the TCU and work toward a harmonious relationship with those it serves. At the same time, the Committee, must, in all cases, retain its ability to be objective so that it fulfills its responsibilities as the overseer of the animal care and use program.

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### **III. ROLE OF THE IACUC COMMUNITY MEMBERS**

PHS Policy as well as the Animal Welfare Act require that all Institutional Animal Care and Use Committees have at least one community representative serving as a voting member of the committee. Community members do more than fulfill legal requirements; they add credibility to the IACUC review procedures by providing valuable perspectives and reflecting concerns of the public. These views should be respected by the scientific community.

The IACUC recognizes community membership as vital to the optimal functioning of the Committee. Decisions affecting animal-based research need to be shared by the public who funds research, and for whom it is carried out. Community input opens the “closed doors” to one or more persons. If the research community is to overcome the criticism of a peer review system, outside public opinion is vital.

Community members can come from many different occupations and philosophical viewpoints. Committees often include individuals from the animal protection community, members of the religious community, lawyers, nurses, philosophers, homemakers, ranchers, farmers, public school teachers, community veterinarians, and others.

The TCU IACUC maintains at *least* one Community Representative membership position.

#### **A. ROLES OF COMMUNITY MEMBERS**

1. To support the animals' interest and to protect animals from painful procedures
2. To question, and to bring ethical aspects into discussion
3. To communicate the public's concerns and conscience and to deal with the difficult ethical dilemmas which research involving animals pose
4. Providing straightforward, honest questioning

#### **B. DESIRABLE TRAITS FOR THE LAY COMMITTEE MEMBER**

1. Desire to protect animals; dedicated to animal protection
2. Diplomatic, but not afraid to ask questions
3. Willing to question the status quo
4. Pleasant, but persistent
5. Good communication skills
6. Rational and enthusiastic
7. Tolerant of open disagreement
8. Honest and straightforward

These are traits that should be found in ALL members of the IACUC to have a successful and productive Committee.



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## **IV. PAIN**

“What level of pain do we allow?” is a question facing all animal care committees. The IACUC must somehow reconcile the research’s physical and psychological consequences to the animal with the objectives of the proposed investigation. It is the goal of the IACUC to limit the pain and distress of experimental animals to the absolute minimum necessary.

The following information is used by the Committee in considering painful and stressful procedures, and these guidelines should also be used by those submitting protocols for review. By mutual understanding of terminology, there can be no confusion as to the definitions and standards used by the Committee in the review process. Animal Care Facility personnel will also follow these same guidelines.

### **A. PAIN AND DISTRESS: DEFINITIONS**

1. Pain is an awareness of acute or chronic discomfort, occurring in varying degrees of severity, and resulting from injury, disease, or emotional distress as evidenced by biological and/or behavioral changes.
2. Acute pain results from a traumatic, surgical, or infectious event that is abrupt in an onset and relatively short in duration. It is generally alleviated by analgesics.
3. Chronic pain results from a longstanding physical disorder or emotional distress that is usually slow in onset and has a long duration. It is seldom alleviated by analgesics but frequently responds to tranquilizers combined with environmental manipulation and behavioral conditioning.
4. Distress is a state in which an animal cannot escape from or adapt to internal stresses which results in effects to the animal’s wellbeing. Its acute form may be relieved by tranquilizers. Sustained distress, however, requires environmental change and behavioral conditioning and does not often respond acceptably to drug therapy.

### **B. ANALGESICS AND ANESTHESIA: DEFINITIONS**

1. Analgesia refers to relief from pain.
2. Tranquilization is a state of behavioral change in which the patient is relaxed and unconcerned by its surroundings. In this state, the animal is often indifferent to minor pain.
3. Sedation is a mild degree of central depression in which the patient is awake but calm.
4. Narcosis, in man, is defined as a drug-produced state of deep sleep accompanied by analgesia. In veterinary medicine, the narcotized patient is seldom asleep but is sedated and oblivious to moderate pain.

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5. Hypnosis is a condition of artificially induced sleep, or a trance-like suggestible state resembling sleep, resulting from moderate depression of the central nervous system.
6. Local anesthesia is the loss of sensation in a limited area of the body.
7. Regional anesthesia is insensibility in a larger but limited area of the body.
8. Basal anesthesia is a light level of general anesthesia usually produced by preanesthetic agents. It serves as a basis for deeper anesthesia on administration of other agents.
9. General anesthesia is complete unconsciousness.
10. Surgical anesthesia is unconsciousness accompanied by muscular relaxation to such a degree that surgery can be performed painlessly and without struggling on the part of the patient.

### **C. SIGNS OF PAIN**

1. An animal in pain, regardless of species, usually displays one or more of the following signs:
  - a. Attraction to the area of pain
  - b. Increased skeletal muscle tone
  - c. Altered electroencephalogram response
  - d. Increased blood pressure and heart rate
  - e. Pupillary dilation
  - f. Change in the respiratory pattern

### **D. SIGNS OF ACUTE PAIN**

1. Protection of the painful part
2. Vocalization (especially on movement or palpation of the painful part)
3. Licking
4. Biting
5. Scratching or shaking of affected area
6. Restlessness
7. Pacing
8. Sweating
9. Increased rate or respiration

### **E. SIGNS OF CHRONIC PAIN**

1. Limping
2. Licking of area affected
3. Licking of other areas if the painful part cannot be reached
4. Reluctance to move
5. Loss of appetite
6. Change in personality

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## 7. Change in eye brightness

**F. SPECIES-SPECIFIC SIGNS**

In compiling general guidelines it has become clear that there are species-specific signs of pain which should be taken into account when making a practical assessment. Experience has taught that such signs are often associated with what is believed to be a painful condition, although no sign can by itself be regarded as diagnostic of pain and may also occur in conditions in which pain is unlikely to be a feature.

Although a comprehensive description of species-specific signs has not been produced, the following notes and comments might be helpful.

**1. Rodents**

Pain in rodents usually results in decreased activity, piloerection and an un-groomed appearance, or there may be excessive licking and scratching. They may adopt an abnormal stance with ataxia, but rats and mice may become unusually aggressive when handled. Acute pain may cause vocalization. Inappetence or a change in feeding activity may be noted and, if housed with others, a change in the normal group behavior may be apparent.

**2. Birds**

Birds in pain may show escape reactions with vocalization and excessive movement. There may be an increase in heart and respiratory rates. Prolonged pain will result in inappetence and inactivity with a drooping, miserable appearance. When handled, the escape reaction may be replaced by a state of tonic immobility.

**3. Fish**

It is difficult to determine the nature of the response to pain in fish. Responses to harmful stress include an increased ventilatory pattern with excessive movement of the fins.

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## **V. SPECIAL POLICIES OF THE TEXAS CHRISTIAN UNIVERSITY INSTITUTIONAL ANIMAL CARE AND USE COMMITTEE**

The following policies have been developed by the IACUC to assist the Committee in fulfilling its responsibilities under the AWA, PHS policy, and other regulatory requirements and local policies.

### **A. EUTHANASIA AS AN ALTERNATIVE TO DEATH AS AN ENDPOINT IN RODENTS**

Legal, regulatory, and moral guidelines require that animal pain, distress, and suffering be minimized in any experiment. For these reasons, investigators are strongly encouraged to administer euthanasia in death-end-point experiments prior to actual death of the animals - if experimental validity will not be compromised. These objectives assume that investigators can differentiate between animals that are morbid (i.e., affected with disease or illness), and those that are moribund (i.e., in the state of dying)

The IACUC believes that an investigator can judge and should perform euthanasia on moribund rodents based on objective signs or symptoms of dying depending on experience with the animal model, professional judgement, and the experimental protocol. The combination of signs or symptoms indicating euthanasia may vary with experimental end point.

The IACUC guidelines indicate that animals found moribund should receive euthanasia, but if experimental death itself is the required end point, the investigator may receive consideration for approval to conduct such studies by providing appropriate justification in a memorandum at the time the Animal Protocol Form is submitted to the Committee. Inconvenience or increased costs alone are not justifiable reasons, but the IACUC will otherwise, generally, accede to the scientific judgement of the investigator. Investigators are expected to make a good faith effort to justify their end points, or agree they can judge when to perform euthanasia on animals found moribund in a particular protocol. Moreover, all investigators are expected to continue to monitor experimental animals at least daily (including weekends and holidays), to euthanize any animals which they judge should receive euthanasia, to use alternative end points to death when possible, and to minimize animal numbers within statistical constraints in general, but especially in death-end-point protocols.

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### **Responsibilities:**

- a. All investigators are expected to:
  - (1) Use alternative end points when possible.
  - (2) Minimize animal numbers within statistical constraints.
  - (3) Have experimental animals monitored at least twice daily, i.e., early morning and late afternoon, during the work week. On weekends and holidays, animals will be monitored on a once daily basis unless animals are expected to be in a morbid state.
  - (4) Euthanize any animals found in a moribund state except when death is the end point as approved by the TCU IACUC.
- b. If death itself is the required end point of the study, the investigator may receive approval to conduct such studies by providing appropriate justification in the written protocol. Inconvenience or increased costs will not be used as reasons for justification. Investigators will be expected to make a good faith effort to justify the end points.

### **Suggested Signs and Symptoms for Judging Morbidity (disease/illness) in Rodents**

- a. rapid breathing rate
- b. breathing rate very slow, shallow, and labored
- c. rapid weight loss
- d. hunched posture
- e. hypo- or hyperthermia
- f. ulcerative dermatitis or infected tumors
- g. anorexia (loss of appetite)
- h. diarrhea or constipation

### **Suggested Signs and Symptoms for Judging the Moribund Condition (state of dying) in Rodents. Signs and symptoms of morbidity will be observed plus:**

- a. impaired ambulation (unable to easily reach food or water)
- b. evidence of muscle atrophy or other signs of emaciation (body weight is not always appropriate, especially since tumors may artificially increase body weight)
- c. any obvious illness including such signs as lethargy (drowsiness, aversion to activity, lack of physical or mental alertness), prolonged anorexia, bleeding, difficulty breathing, central nervous.
- d. Inability to remain upright
- e. Approved methods of euthanasia:
  - Carbon Dioxide: Carbon dioxide is acceptable for euthanasia in appropriate species. Compressed CO<sub>2</sub> gas cylinders is the only recommended source of carbon dioxide because the inflow to the chamber can be regulated precisely.

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Carbon dioxide generated by other methods such as from dry ice, fire extinguishers, or chemical means (e.g., antacids) is unacceptable.

- Noninhalant Pharmaceutical agents: The use of injectable euthanasia agents (Pentobarbital sodium, MS 222, Potassium chloride) is the most rapid and reliable method of performing euthanasia. It is the most desirable method when it can be performed without causing fear or distress in the animal. It is of utmost importance that personnel performing this technique are trained and knowledgeable in the proper use of these agents and their use in the appropriate species.

### **B. EUTHANASIA BY CERVICAL DISLOCATION OR DECAPITATION**

*The policy of the TCU – IACUC complies with the 2000 Report of the AVMA Panel on Euthanasia recommendations on euthanasia by cervical dislocation or decapitation.*

#### **1. Cervical Dislocation**

- a. This method of euthanasia shall only be used in small birds, mice, rats weighing <200g
- b. Cervical dislocation may be used unconditionally in the above species if the animal is anesthetized first. Without prior anesthetization, this method may be only used when scientifically justified by the user and approved by the IACUC. Prior use by the investigator shall not be deemed as scientific justification.
- c. If the IACUC approves this method for use without prior anesthesia, the TCU Veterinarian shall observe the personnel performing the cervical dislocation to ensure that they have properly trained.

#### **2. Decapitation**

- a. This method of euthanasia shall only be used in laboratory rodents and birds
- b. Decapitation may be used unconditionally in the above species if the animal is anesthetized. The equipment used to perform decapitation should be maintained in good working order and serviced on a regular basis to ensure sharpness of blades. The use of plastic cones to restrain animals appears to reduce distress from handling, minimizes the chance of injury to personnel and improves positioning of the animal in the guillotine. Without prior anesthetization, this method may only be used when scientifically justified by the user and approved by the IACUC. Prior use by the investigator shall not be deemed as scientific justification.

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- c. If the IACUC approves this method for use without prior anesthesia, the Veterinarian shall observe the personnel performing the decapitation to ensure that they have been properly trained.

## **2. Justification**

- a. Acceptable Scientific Justification may be accomplished by one of the following methods:
  1. A small pilot study consisting of 6–10 animals per group may be incorporated into the protocol to test for significant differences between physical methods (i.e. cervical dislocation or decapitation) or acceptable methods (i.e., gas inhalation [carbon dioxide or isoflurane] or barbiturate overdose. The results of the pilot study would then be reviewed by the IACUC before granting final approval to use physical methods of euthanasia.
  2. Results of a literature review may be submitted with the protocol. The review should demonstrate that the AVMA approved methods would not work in the specific study being reviewed.
  3. The IACUC may consider an ongoing study as justified if the investigator has provided strong justification that terminating the use of cervical dislocation or decapitation without anesthesia would severely affect the study.
- b. Unacceptable justification for continuing to use cervical dislocation or decapitation would include:
  1. The study is ongoing and the procedures cannot change midstream without compromising the results; this method of euthanasia has been performed for years. Prior data collection would now be made useless. The IACUC would respond to any of these by asking the investigator to perform a pilot study as outlined above.
  2. Colleagues at other institutions are using these methods and they are “industry standard.” Since the AVMA’s recommendations are fairly recent, different institutions are at varying stages of implementing them.
  3. Current grant requests do not cover a pilot study and no funds are available to perform it. The IACUC is sensitive to this issue. However, we are charged with making sure the University is in compliance with all applicable guidelines and regulations. One suggestion would be to share the cost of the pilot study with several colleagues within or outside the University. The results of the study should be attached to any similar protocol submitted as justification. Another suggestion would be to monitor the “Research Review” published by the Research Support Office for grants that may be available for this purpose. Since many institutions are affected, publications in a peer-reviewed journal would be highly recommended.

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### **C. CRITERIA FOR EUTHANASIA OF ANIMALS**

As part of the TCU IACUC's responsibility to oversee all areas of biomedical research involving animals and to represent the society's concerns regarding the welfare of these animal subjects, this policy criteria for the euthanasia of animals.

**Guidelines:** When an animal meets any of the following criteria, it should be considered for euthanasia:

- a. Prostration – Animal is consistently unwilling/unable to stand.
- b. Paralysis – Unwilling/unable to use limbs. Positive controls on neurotoxicology studies should be handled on an individual case basis.
- c. CNS disorders such as head tilt, incoordination, ataxia, tremors, spasticity, seizures, circling, or paresis. Positive controls on neurotoxicology studies should be handled on an individual case basis.
- d. Severe weight loss/emaciation – Animal has not consumed an appreciable amount of food for a time sufficient to produce substantial weight loss (acute loss of 20–25% body weight less than 1 week or chronic gradual but continuous decline in body weight), and/or cannot be encouraged to eat by dietary changes (when permitted).
- e. Labored breathing – Animal appears to have difficulty breathing.
- f. Persistent coughing, wheezing and respiratory distress which cannot be resolved by therapy.
- g. Unhealthy appearance such as rough coat, hunched posture, and distended abdomen, especially if prolonged (more than three days), which cannot be resolved by therapy.
- h. Diarrhea, especially if prolonged (more than three days), leading to emaciations and/or debilitation, which cannot be resolved by therapy.
- i. Prolonged or intense diuresis leading to emaciation.
- j. Prolonged bleeding from natural orifices.
- k. Microbial infections interfering with a study which cannot be resolved by therapy.
- l. Gross abdominal distension.
- m. Maimed/broken limbs – Any extensive self-mutilation or obviously broken limb, which is unlikely to readily heal and/or affects the animal's ability to feed or drink normally.
- n. Prolapsed tissues – Animal has obviously prolapsed, necrotic tissue (genital, rectal, etc.)
- o. Persistent, self-induced trauma.
- p. Clinical signs of suspected infectious disease requiring necropsy for diagnosis (consultation with staff veterinarian required.)
- q. Large ulcerated mass – Most animals are euthanized if masses are apparent. For chronic toxicology studies only: Since masses open/drain, regress in size, and/or because certain animals can accommodate them in a relatively normal manner, it is necessary to rely on experience and good judgement when deciding whether or not to euthanize an animal as a result of the presences of one or more masses. In general, if the mass severely restricts the animal's ability to eat, drink, eliminate wastes, breathe, or move, if the mass becomes widely necrotic or ruptures and body fluid loss is excessive, or if there is a large mass around the head, the animal should be euthanized.
- r. Comatose/pale/cold to the touch.
- s. Other- Any obvious, unrelenting condition which appears to produce pain which cannot be



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alleviated due to protocol requirements. Since many study protocols and/or regulatory agency guidelines do not specify when/if analgesic/anesthetic agents can be used, it must be the decision of the staff veterinarian, in consultation with the PI, as to whether or not it is appropriate to attempt to relieve apparent pain through the use of these agents. Their use can often confound data interpretation since many of these agents may produce effects in blood parameters, food/water consumption, appearance, mobility, neurological measurements, etc.

### **References:**

Chuck Montgomery, JAVMA, Vol 191, No.10, November 15, 1987

"Refinement of Long-Term Toxicity and Carcinogenesis Studies," G. N. Rao and J.Huff, Fundamental and Applied Toxicology. Vol 15, pp 33-43 (1990)

## **D. GUIDELINES FOR MULTIPLE MAJOR SURVIVAL SURGERIES USING ANIMAL RESEARCH SUBJECTS**

In accordance with Title 9, *Code of federal Regulations*, Subchapter A, Parts 1 through 3, *Animal Welfare Act; Guide for the Care and Use of Laboratory Animals*; and the National Institutes of Health Publication 92-3415, Institutional Care and Use Committee Guidebook, the scientific need for the performance of multiple survival surgery is to be examined by the TCU IACUC at the time of the initial and continuing review of all research protocols involving the use of animals. Efforts are made to avoid multiple major survival surgeries in research protocols using animal subjects. However, there may be situations where there is a scientific need for performance of multiple survival surgeries.

### **Definitions:**

- a. Multiple major survival surgeries are defined as surgical interventions that:
  - (1) Penetrate and expose a body cavity, i.e., chest, cranium, or abdomen.

**OR**

  - (2) Produce substantial impairment of physical or physiologic function
- b. Surgical procedures requiring only limited access and accomplished using rigid or flexible videoscopes, e.g., arthroscopy, laproscopy, etc., would be normally considered minor procedures as long as they do not result in significant pain or impairment of mobility, exempting them from the prohibition of more than one survival procedures per animal.

### **Duties:**

- a. The TCU IACUC will examine research protocols involving the use of animal subjects to assure that multiple survival surgeries are avoided unless essential to the objectives of the research protocol. Multiple survival surgeries can be justified if:
  - (1) They are related components of a research protocol.
  - (2) They conserve scarce animal resources.
  - (3) They are needed for clinical reasons as determined by the attending veterinarian.
- b. The primary investigator will:
  - (1) Provide a justification for multiple major survival surgeries in the written research protocol.

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- (2) Understand that convenience or monetary savings will not be adequate justifications.

**SURVIVAL SURGERY AND POST-SURGICAL CARE****Definitions:**

- a. Aseptic technique:
  - (1) Surgical technique conducted under conditions that prevent exposure of the patient to pathogenic organisms, including wearing of sterile surgical gloves, gowns, caps and face masks; use of sterile instruments; and aseptic preparation of the surgical field.
  - (2) For rats and mice, the use of a surgical cap and gown is optional.
- b. Survival surgery: Surgery performed on a live animal under general anesthesia, from which the animal is expected to recover.
- c. Non-survival surgery: the animal is euthanized at the end of the surgical procedure before recovering from anesthesia.
- d. Major operative procedure or major survival surgery: Surgical intervention that penetrates a body cavity or could potentially produce a permanent handicap in an animal that is expected to recover.
- e. Minor surgical procedure: Surgical procedure restricted to the management of minor problems and injuries (e.g., wound suturing)

**Legal Requirements:**

- a. Surgery must be performed or directly supervised by trained, experienced personnel.
- b. Procedures that will cause more than momentary or slight pain or distress must be performed with appropriate sedatives, analgesics, and/or anesthetics, unless withholding such agents is justified for scientific reasons and that justification is provided to the TCU IACUC in writing by the principal investigator.
- c. Pre- and post-surgical care must be provided in accordance with established veterinary medical and nursing practices.
- d. Survival surgery:
  - (1) Aseptic surgical techniques must be used on all animals. Major surgical procedures must be conducted only in facilities that are intended for that purpose and are maintained under aseptic conditions. Non-major operative procedures do not require a dedicated facility but must be performed using aseptic procedures.
  - (2) Surgery on rats and mice does not require a dedicated facility but must be performed using aseptic procedures.
- e. Multiple major surgical procedures on one animal may not be performed unless the procedures are justified for scientific reasons, have been approved by the IACUC, and the justification stated in writing by the principal investigator. Multiple surgical procedures may be performed as necessary to protect the health or well-being of the animal, as determined by the attending veterinarian.

**Preparation for Surgery:**

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- a. **Animal:** Hair should be clipped from the surgical site. The operative site should be thoroughly cleaned with a skin disinfectant to remove surface bacteria. The anesthetized animal should be secured with an appropriate method to prevent contamination of the surgical site. The animal should be positioned with the head and neck fully extended to ensure a patent airway, and an endotracheal tube should be inserted when possible. Surgical drapes should be used to cover the animal's body to prevent contamination of the operative site; when an drape is used in surgery on rodents and rabbits, the drape must be small enough to permit visualization of the animal's respiratory movements and peripheral perfusion to avoid anesthetic accidents.
- b. **Surgeon:**
  - (1) A cap and face mask should be donned first. Hands and arms are scrubbed thoroughly with germicidal soap prior to donning sterile gloves and a surgical gown.
  - (2) For rats and mice, a surgical cap and gown are optional.
- c. **Surgical instruments:**
  - (1) All instruments must be wrapped in packs and sterilized prior to surgery. The sterilization date should be written on the outside of each pack when it is prepared. Unused, sterilized instruments in packs should be resterilized after a period of time appropriate to the type and thickness of the material in which the instruments are packed and the method of sterilization.
  - (2) For rats and mice, all instruments must initially be wrapped in packs and sterilized prior to surgery. In the instance where surgery will be performed on multiple rodents, cold sterilant or bead sterilization should be used on instruments in between each animal and the instruments should be rinsed with sterile saline before use on animal tissue. It is generally accepted that no more than ten rodents will be used per sterilized surgical pack. Any exception to this guideline should be specified in the proposal with sufficient justification.
- d. **Suture material:** The abdominal or thoracic body wall should generally be closed with absorbable sutures (i.e. Nylon, Prolene, Dacron) in a simple interrupted pattern. Skin sutures or staples should be removed 7– 10 days post-surgery. Silk is not considered to be a good choice for suturing because it has capillary action and causes inflammation.

### **Postsurgical Care:**

- a. Trained personnel should observe the animal from the time surgery is completed to the time that the animal has recovered from anesthesia sufficiently to maintain itself in sternal recumbancy.
- b. The animal should be kept warm, quiet, and clean throughout the immediate post-operative period to facilitate the metabolism of anesthetic and to maximize healing of the incision. A water circulated heating pad can be effective here as well as during surgery to aid in maintaining the animal's body temperature near normal (37–39°C).
- c. Supplemental fluids, analgesics, and other drugs should be scheduled in the protocol and administered as described. Special diets, housing, and environmental conditions (e.g., temperature, humidity) should be considered to maximize the rate of healing. If large volumes of balanced electrolytes or other fluids are administered subcutaneously, the injections should be made at multiple sites to prevent tissue damage. Antibiotics should

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be used only when needed to treat postoperative infections; they must be carefully selected to avoid specific species tolerances.

- d. Remove sutures at the appropriate time, usually 7–10 days.
- e. Notes on daily monitoring of the animal's progress, administration of medicaments, and management of the surgical incision up to the time of suture removal should be recorded on the clinical record. The development of the postoperative care protocol should be done in consultation with the attending veterinarian.

### **Record Keeping:**

- a. A permanent record should be established for each animal undergoing surgery. Rats and mice can be handled as a group rather than individually for record keeping purposes.
- b. The record should be complete, current and readily accessible.
- c. A brief description of the surgical procedure should be recorded and should reflect what was approved by the IACUC.
- d. Any unexpected or abnormal reaction to anesthetics or other drugs should be recorded.
- e. Any information that might be of value or assistance for maintaining the animal after surgery should be recorded.
- f. All post-surgical care provided should be documented.

### **References:**

*Code of Federal Regulations*, Title 9 (Animals and Animal Products), Subchapter A (Animal Welfare), Parts 1-3

NRC (National Research Council). 1985. *Guide for the Care and Use of Laboratory Animals*. A

## **E. GUIDELINES FOR FOOD AND WATER DEPRIVATION USING ANIMAL RESEARCH SUBJECTS**

Any animals on placed on food deprivation (following IACUC approval, of course) must be watched *carefully* to ensure that animals have not dropped below an acceptable level of free-feeding weight (i.e., below 85% of free-feeding weight). To ensure this, all animals on such a deprivation schedule must be weighed at least every other day, and records of weights kept by the PIs conducting the research (ordinarily animals must be weighed and weights recorded a minimum of once per week). Protocols involving animals on water deprivation lasting longer than 4 hrs must receive close review by the IACUC, and must be closely monitored both with weights and close visual inspection, as recommended by the IACUC for the specific protocol. If deprivation studies are done using animals that are not yet adults (i.e., rats under 90 days, or mice under 70 days), sentinel animals of the very same age left at free-feeding weight (and in the same housing conditions) must be kept to accurately ascertain what their weight at that age and in this facility *should* be, so that an accurate calculation of % of free-feeding weight can be obtained.

## **INVESTIGATION OF CONCERNS INVOLVING THE CARE AND USE OF ANIMALS.**

### **1. Regulatory Authority:**

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Animal and Plant Health Inspection Service, USDA  
9 CFR Chapter 1, 1-1-92 Edition  
Subchapter A – Animal Welfare (Animal Welfare Act)

Section 2.31 Institutional Animal Care and Use Committee (IACUC), (c) IACUC  
Functions

- (4) “Review, and if warranted, investigate concerns involving the care and use of animals at the research facility resulting from public complaints received and from reports of non-compliance received from laboratory or research facility personnel or employees.”

### **2. TCU IACUC Policy:**

a. The IACUC will review and/or investigate any concern relating to animal care and use brought to the attention of the Committee. This includes claims by the public concerning any aspect of the animal care and use program or by employees or students who report alleged instances of animal abuse, violation of approved protocols, use of animals not covered by approved protocols, violation of any animal-related regulation or standard (such as the Animal Welfare Act, PHS Policy, AAALAC accreditation standards, or IACUC policy), or complaints regarding the care received by animals housed in University laboratory animal, wild animal or agricultural facilities. The TCU IACUC encourages any person with a concern to voice the concern both to the PI, *and* to the IACUC chair or the veterinarian.

#### **b. Steps in the process**

- (1) Concerns should first be addressed to the individual(s) or unit at whom/which the complaint is directed. If the concern is not adequately addressed, the individual has the option (and maybe even the *duty*) to take the concern to the next level.
- (2) The concerned individual(s) begins the process of filing a Formal Complaint by contacting one the following:
  - (a) IACUC Chair, x6082
  - (b) A member of the IACUC (Members are listed in the TCU emergency plan, or can be obtained by contacting the IACUC chair)
- (3) The following information is to be provided for any concern:
  - (a) The complainant’s name (voluntary)
  - (b) The individual(s) or unit the complaint is against
  - (c) Description of the event or charge including the dates of observation of the alleged Violation(s)
  - (d) Copies of any written, photographic, or taped documentation to substantiate the charges

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- (e) Names of any other witnesses to the events/charges being described or made (voluntary)
  - (f) Signature of the Complainant(voluntary)
- (4) The IACUC Chair, or IACUC member will assist the complainant in completing the written description and will submit the Complaint on to the IACUC Chair and the Veterinarian.
  - (5) Complainants must be the actual individual(s) who have witnessed the violation.
  - (6) While hearsay complaints cannot be formally filed, individuals who have serious concerns based on hearsay evidence can call any of the individuals listed under (2) The IACUC chair or an IACUC representative will follow up on concerns by means other than the formal complaint process (such as review of protocols, discussions with other employees, or unannounced laboratory inspections). This process may lead to the filing of a Formal Complaint.

### **c.IACUC Review**

The Formal Complaint will be presented to the next regularly scheduled meeting following receipt by the IACUC Office. An emergency meeting may be called if appropriate.

- (1) The Sub-committee will review the complaint and talk with Director or IACUC member who has brought the complaint forward. If evidence warrants a formal investigation, the sub-committee members will so recommend by a majority vote of those present. The Sub-committee and Coordinator will:
  - (a) The IACUC Coordinator shall document the review findings of the Sub-committee and schedule a meeting of the full Committee at the earliest possible date.
  - (b) Inform the Complainant, if known, that the IACUC will be performing and investigation of the Complaint.
- (2) Should the Sub-committee, following the review of the complaint, find that the complaint is insufficiently substantiated, the Subcommittee will:
  - (a) Document the review findings of the Sub-committee.
  - (b) Provide a confidential written response to the Complainant, if known, explaining the findings of the Sub-committee.
  - (c) The IACUC Coordinator shall place the Complaint Form, sub-committee's report, and all correspondence into a separate IACUC file for formal complaints, by year.
  - (d) Provide an opportunity for all IACUC members to review the Complaint and Sub-committee report to provide a minority view, should they so desire.
- (3) At the discretion of the Sub-Committee, inform the Pertinent Individual (principle investigator, Facility director, etc), in writing that a complaint was made. The

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investigator will then receive a summary of the concerns without reference to the individual(s) name(s) who filed the complaint and a copy of the Sub-committee's Report.

**d. IACUC Investigation of Alleged Violations of Animal Care and Use Policies.**

- (1) When the Sub-Committee has voted to initiate an investigation, the IACUC Coordinator will Schedule a meeting of the full committee at the earliest possible date.
- (2) The Committee as a whole will review the documentation and determine a course of action, which may include assignment of the investigation to a sub-committee or individual.
- (3) The Chair will notify the Institutional Official (Dr. Larry Adams) of the initiation of the Investigation.
- (4) The Chair will notify the Principal Investigator, animal facility administrator, or other pertinent Individual (known hereafter as the PIND) of the IACUC's intention to carry out the investigation.

This notification will include:

- (a) Citation of the section of the federal regulations which allow for investigations of concerns related to animal care and use.
  - (b) Description of the complaint and the sub-committee's review report.
  - (c) An invitation to meet with the IACUC, IACUC Chair or sub-committee to personally discuss the allegations.
- (5) The IACUC may use a variety of methods to obtain information to assist the investigation. These will include, but are not limited to the following:
- (a) Unannounced visits to the laboratory or animal facility in question to review procedures, lab/facility documents, or talk with personnel prior to formal notification of the PIND.
  - (b) Submission of documentation from the PIND, co-workers or employees, or from the animal facility where animals were housed. Such documentation could include: research records relating to animal experimentation, surgical records, animal health records, purchase orders, standard operating procedures, diagnostic laboratory reports, quality assurance reports, or others which will provide information which will assist in the investigation.
  - (c) Documentation supporting the allegations provided by the Complainant.
  - (d) The PIND will be invited to provide a written response to the Complainant and any additional documentation provided by the Complainant. (Names, addresses, or other information which could result in breach of the Complainant's confidentiality will be deleted from materials provided to the PIND).

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- (e) Review of Animal Care and Use Protocols, IACUC inspection reports, Reports of Programmatic Reviews, USDA inspection reports, or any other pertinent IACUC record.
  - (f) Letter of documentation solicited from other University employees who can provide insight into the investigation. For example: letters from animal facility veterinarians, managers, or other facility personnel; letters from other committees, such as the Institutional Biosafety Committee; or other individuals.
  - (g) Letters of outside evaluation of protocols, programs, or documentation related to the complaint performed by external reviewers chosen by the Committee. Such reviews would be done confidentially, with signed confidentiality statements by reviewers. The PIND may be asked to assist the IACUC in selection of reviewers.
  - (h) Invited site visits by external reviewer(s) to critique facilities or programs.
  - (i) IACUC interviews with the PIND, Complainant or other individuals who can provide information for the investigation.
- (6) Once the IACUC has completed its fact-gathering period, the IACUC will reconvene the entire committee to review all the information. A quorum of the Committee must be present and at least one community member and one veterinarian at the meeting. Because of the great amount of documentation that may be collected, it is recommended that several individual members of the IACUC be selected to review and summarize information which will be presented to the IACUC. Individual members will have access to all documentation, should they wish to review the entire package.
- (7) The Committee will review the package and fully discuss all issues. Once discussion is complete, the Committee will form recommendations for action. Recommendations will be individually voted on all actions must pass by a majority vote. Such actions could include, but are not limited to:
- (a) Requiring an amendment to the IACUC approved protocol
  - (b) Requiring a change in procedures previously approved in an IACUC protocol or requiring a change in procedures or program of the animal facility in question.
  - (c) Requiring a re-submission of a currently approved IACUC protocol.
  - (d) Conducting additional unannounced laboratory inspections to observe procedures or unannounced facility visits to observe conditions, procedures, and/or review programs. In either case, the end result of the inspection(s) may include any of the actions outlined in this section.
  - (e) Suspension of the research activity (Protocol).
  - (f) Sanction against the PIND.
  - (g) Find that the complaint was unwarranted or unsubstantiated.
- (8) With the Investigation complete and actions contemplated, the IACUC will invite the PIND to meet with the Committee to review the Committee's findings. This meeting will provide an opportunity for the PIND and Committee to resolve issues and work together to find solutions to the issues raised in the investigation. Harsh actions such a



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suspension or sanction can hopefully be avoided by this process and result in the mutual agreement and satisfaction of the Committee and the PIND.

(9) After the PIND has met with the Committee, the Committee will formulate its final actions and Vote on these individually. All actions must pass by a majority of quorum vote and minority opinions be recorded.

(10) The Committee shall complete the investigation by the following documentation and notifications:

(a) The Institutional Official shall receive a summary document of the findings of the Committee and the final actions that will be taken.

(b) If suspension is the action being taken and the activity is supported by PHS, the IACUC, through the Institutional Official, shall file a full report with Office for Protection from Risks (OPRR). A full report, for suspensions involving covered species, must be filled with APHIS.

(c) If sanction of the animal care program is to occur, the letter will be directed to the Administrator to immediately halt inhumane care, use, or treatment of animals.

(d) The Complainant will receive a summary of the actions taken, but any confidential and information concerning the protocols will not be included.

(e) The PIND will be informed, in writing, of the final conclusions/actions of the Committee and of any response that is required from the PIND.

(f) If the Complaint was found to be unwarranted or unsubstantiated, a strong letter of support will be provided to the PIND from the Committee for the research, animal care facility, or other program program, as appropriate.

(11) The Committee will complete a final report and close the file, keeping all documentation for the complaint, review, investigation, and all other information in the Formal Complaint file, by year.

(12) The IACUC Chair will provide letters of thanks to all individuals who assisted in the completion of the investigation.

### **3. Confidentiality of the Complainant**

#### **a. Regulatory Authority: Animal Welfare Act Section 2.32(c)(4):**

“No facility employee, Committee member, or laboratory personnel shall be discriminated against or be subject to any reprisal for reporting violations of the regulations or standards under the Act.”

#### **b. IACUC Policy:**

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- (1) The confidentiality of any complainant will be maintained by all individuals involved in the review and/or investigation of alleged violations of animal care and use regulations and standards. Information on any documentation which is provided to individuals other than the Director, Department of Lab Animal Medicine or members of the IACUC that would identify the complainant shall be removed by cross out, white out, black out or other method.
- (2) The standards of the Animal Welfare Act listed in 3.1 above will be strictly followed by all members of the University community.
- (3) Should charges be brought that are false and in malicious manner by the Complainant to purposely harm the University or any of its departments, divisions, or units, the IACUC, or any individual, then such will be handled according to pertinent classified staff, academic professional, or faculty policies of Texas Christian University that are applicable to the given case.

### **4. Authority of the Attending Veterinarian**

#### **a. Regulatory Authority: AWA Section 2.33(a)(2)**

“Each research facility shall assure that the attending veterinarian has appropriate authority to ensure the provision of adequate veterinary care and to oversee the adequacy of other aspects of animal care and use”

#### **b. IACUC Policy**

Veterinarians contracted by TCU have the authority to immediately halt inhumane care, use, or treatment of animals.

### **5. Suspension of Animal Activities**

#### **(a) Regulatory Authority: AWA Section 2.31 (d)(xi)(6) and (7)**

“The IACUC may suspend an activity that it previously approved if it determines that the activity is not being conducted in accordance with the description of that activity provided by the principal investigator and approved by the Committee. The IACUC may suspend an activity only after review of the matter at a convened meeting of a quorum of the IACUC and with the suspension vote of a majority of the quorum present; if the IACUC suspends an activity involving animals, the appropriate corrective action, and report that action with a full explanation to APHIS and any Federal agency funding that activity.”

#### **(b) IACUC Policy**

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The IACUC will follow this policy when necessary to ensure compliance with the AWA and PHS Policy.

### **E. LD 50 TESTING**

The LD 50 test evaluates acute lethality from exposure to a substance or product. An LD 50 value is the dose at which 50 percent of the test animals can be expected to die. The test is used to classify substances or products for regulatory purposes, including safe transporting and labeling; provide information for treatment of acute intoxications; standardize certain biological products; set dose levels for subsequent toxicity studies; provide comparative information on the chemical's dose response curve; and provide data for evaluation and validation of alternative test methods. The LD 50 tests have become controversial among toxicologists, animal welfare organizations, legislators, and the public primarily due to ethics of using a large number of animals and evaluating only mortality.

The TCU IACUC has established the following policy:

#### **1. Definitions:**

- a. The Classical LD 50 test is used to determine the lethal dose (LD) of a substance that will kill 50 percent of test animals. Typically, this method can use 100 or more animals. The test material is administered in increasing doses, usually five or more, to groups of 10 male and 10 female animals. Mortalities are recorded within a given period, and the LD 50 is determined with the aid of statistical calculations.
- b. The Limit Test is used to determine if the toxicity of a test substance is above or below a specified dose. Five to 10 animals of each sex or 10 animals of the susceptible sex are administered a dose specified by regulations. Toxic responses occurring within a given period are recorded. Based on the results, additional testing may be authorized by the IACUC.

#### **2. IACUC Policy**

- a. The Classical LD 50 test should only be conducted when specifically justified for reasons of scientific necessity and approved by the Institutional Animal Care and Use Committee (IACUC).
- b. Toxicity testing procedures based on the principles of reduction and refinement (such as the Limit Test) should be used until alternative test methods become validated.

### **F. TRAINING**

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The Animal Welfare Act was revised in 1985 to include training requirements for personnel working with animals. The IACUC is to administer the training program at each institution. At TCU, the IACUC, through the expertise of the members and the attending veterinarian and other specialists, provides training to all those who use or care for animals. *Everyone* is required to be trained in handling the species they use, and PIs are responsible for making sure this happens in each individual lab and training records are kept.

Protocols will not receive approval unless evidence of certification is provided (there is a six-month grace period for new investigators, staff and students).

Access to the facilities is based on certification. Those who have not completed the certification sessions will be denied access to all animal facilities.

## **VI. PROTOCOL SUBMISSION PROCESS**

Prior to initiation of any project, class, testing procedure, or any other use of animals, the IACUC must review and approve the use of animals. The first step in the process is to obtain an Animal Use Protocol Form (AUPF) from the IACUC Coordinator or via the IACUC webpage at the Office of Research and Sponsored Projects website. The AUPF is completed and returned to the IACUC Coordinator office. The protocol is submitted to the IACUC committee for review and upon approval the investigator will receive verification. Note that practicality issues may limit numbers of animals that can be held in the vivarium by an investigator at any one time.

The NIH, PHS, American Heart Association and its affiliates and many other granting agencies will not accept proposals without verification of IACUC review. In most cases, the actual IACUC review and approval occurs after the proposal is submitted to the granting agency. The initial verification form states that the protocol has been received for IACUC review, and the results will be submitted within 60 days. Once review is complete, the IACUC sends the final Verification of IACUC Review to the investigator, who then submits the Verification to the granting agency.

The following Protocol Submission Outline provides a description of the review process. Following the outline, a definition of terms is found. Additional information on Protocol Review can contact the IACUC Coordinator Office for additional information.

### **Protocol Submission Outline**

- 1) SUBMISSIONS TO THE IACUC COORDINATOR** – 1<sup>ST</sup> year protocols, 3<sup>rd</sup> year renewals, Annual Reviews, Amendments
- 2) SUBMISSIONS FORWARDED TO THE IACUC**- 1<sup>st</sup> year protocols, 3<sup>rd</sup> year renewals are forwarded to the Veterinarian for approval then to the IACUC committee. Annual reviews, and amendments also have to be approved by the Veterinarian prior to being forwarded to the IACUC Chair. Annual Reviews and amendments may go before the entire IACUC Committee.

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**3) Notification of submission forwarded to the IACUC** – The protocol must be reviewed by the DLAM Veterinarian before submission to the IACUC committee. The veterinarian ensures that the animal handling, experimental use, surgical use, analgesia and disposition meets with USDA and Animal Welfare standards. The protocol is then submitted to the IACUC Committee for review for either accelerated or full review.

- a) **Full Review** – All protocols are reviewed by full committee, recommendations for conditional approval with revisions, approval in current form, or disapproval.
  - 1) **Conditional approval with revisions** - This is conditional approval with final approval by IACUC Chair or by Full Committee once PI has completed revisions necessary for approval. In the event that the revised protocol is required to return to full committee for final approval the protocol goes through accelerated full committee review. This process will be carried out electronically.
  - 2) **Approval in current form**- Meets all standards approved in current form by full committee.
  - 3) **Disapproval** – The reasons for Disapproval are given to the PI who may request Full Review or may submit a Revised Protocol.

Upon approval the PI will receive written verification and is responsible for submitting annual review on the anniversary date of the approval and resubmission on the 3<sup>rd</sup> anniversary.

Note: Any revisions requested during the review process become a part of the official protocol file.

## **4) Requests of additional or replacement animals for previously approved research protocols**

A concerted effort to minimize the use of animals is undertaken by the TCU IACUC at the time of initial review of all research protocols involving the use of animals. However, there is the possibility of unforeseen technical difficulties and additional or replacement animals may be necessary for completion of an approved research protocol.

### **Duties:**

- a) The Chair is authorized by the TCU IACUC to increase the number of animals up to 50% or the number requested for a previously approved research protocol during the period for which the approval is authorized.
  - (1) The Veterinarian will assure that the information sought by the use of the additional/replacement animals is sufficiently important to warrant their use.
  - (2) In reviewing the request the Veterinarian may exercise all the authorities of the TCU IACUC except that the Chair may not disapprove a request of additional/replacement animals. A request for additional/replacement animals may be disapproved only after review by the full committee.

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- b) The primary investigator shall submit a written request to the IACUC Coordinator who shall submit the request and the research protocol file to the Chair of the TCU IACUC for review.
- c) The TCU IACUC may restrict, suspend or terminate this authorization.

### **Administrative Procedures:**

- a) **Procedures of Approved Requests:** When a request for additional/replacement animals is approved by the Chair of the TCU IACUC:
  - (1) The primary investigator shall be notified of the IACUC's decisions, conditions and requirements.
  - (2) The approved request shall be filed in the Institute's active protocol and committee files.
- b) **Procedures for Deferred Requests:** When a request for additional/replacement animals is deferred:
  - (1) The primary investigator shall be notified of the IACUC's decisions, conditions and requirements.
  - (2) The reasons for the IACUC's decision shall be provided to the primary investigator in writing and he/she shall be given the opportunity to respond.
  - (3) The request shall be removed for the Institute's active protocol files if the investigator cannot satisfy the IACUC.

## **5) Procedures for review of Addenda (Amendment) involving the use of Animal Subjects.**

In accordance with Title 9, *Code of Federal Regulations*, Subchapter A, Part 2, Section 2.31, *Animal Welfare Act* and in accordance to PHS Policy (IV, B,7) requires primary investigators to seek IACUC approval for significant protocol changes. The IACUC may use an expedited review procedure to review minor changes in previously approved research during the period for which the approval is authorized. Under the expedited review procedure, the review may be carried out by the Chair or by one or more experienced reviewers designated by the Chair from among the members of the IACUC.

**Guidelines:** The question of whether a change to a protocol is major enough to require an amendment or requires a new protocol is often difficult to answer. The following are suggestions derived from *The IACUC Handbook*, Chapter 10, "Amending IACUC Protocols", Silverman, J., Suckow, M., Murthy, S. which allows the IACUC to fulfill its purpose of overseeing animal welfare considerations.

- a) Insignificant changes require no IACUC notification; but before a change is effected, the primary investigator should consult with the attending veterinarian. Examples of insignificant changes are:
  - (1) Changing a bandage twice weekly instead of once weekly.
  - (2) Feeding animals three times daily instead of twice daily.
- b) Minor adjustments in the procedures of a protocol often become necessary during the

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early stages of a study. Minor adjustments should be submitted as written memorandum or electronic mail to the attending veterinarian for consideration. Such a route is appropriate for:

- (1) Adjustments in injection site or dose of drug.
  - (2) Adjustments in a surgical procedure which does not constitute an additional major survival surgery.
  - (3) Improvements in animal housing and care that improve animal care but do not impact on the scientific or statistical validity of the study.
  - (4) Increases or decreases in the number of blood samples drawn from an animal so long as it does not exceed the allowable withdrawal for that species.
  - (5) Addition of an antibiotic to the treatment regimen.
  - (6) Changes in quarantine procedures that do not lessen the duration or endanger the quality of quarantine, i.e. baseline screening, deworming, special diet, etc.
- c) An Amendment is to be used to gain acceptance for a variation in the conduct of a protocol. In general, an amendment is used to correct problems that arise during the conduct of a study or to continue a study where the goal has not changed but the methods and procedures have been modified to better achieve the goals. An amendment requires action by the IACUC before the changes can be initiated. Justification must be given for the changes requested. Any additional expenditure of resources should also result in an amendment. An amendment is appropriate to initiate a change regarding:
- (1) The number of animals per group.
  - (2) The number of groups in an experiment.
  - (3) The treatment schedule.
  - (4) The duration of an experiment.
  - (5) An improvement in the procedures which does not effect the pain classification.
  - (6) The quality of anesthesia, i.e., type, use of paralytics, postoperative analgesics.
  - (7) The species used as the animal model.
  - (8) Methods of statistical analysis, i.e., change from descriptive to nonparametric statistics.
  - (9) Number and complexity of surgical procedures.
  - (10) Confinement/restrain procedures.
  - (11) Treatment methods.
- d) Frequently during the course of a study, findings may lead an investigator to seek additional information, which can be easily accrued using the same methods as the existing protocol. Since the information to be sought is related to the previously approved study, an amendment may be submitted by the primary investigator. However since the direction of the original study is changed, a literature review must be conducted, including PSYCHLIT and/or MEDLINE searches, to assure nonduplication of effort and justification of the appropriate use of the species. If any change in instrumentation or surgical procedures must be made to accommodate the new treatment, it must be described. Examples of situation where more extensive addenda, but not entirely new protocols, are required are:

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- (1) Testing of the efficacy of a different type of antimicrobial agent to prevent infection.
  - (2) Testing the efficacy of different resuscitation fluids, which have entirely different modes of action to prevent ischemia/reperfusion injury.
- e) Other investigators may be interested in using a particular protocol to determine the effect their subject of interest. If the original primary investigator will be conducting the protocol using the other investigator's material but otherwise not changing the procedure, this procedure may be considered using an expanded amendment. The new investigator must be included as an associate investigator.
- f) Amendments are not allowed under the following circumstances, i.e., full protocols must be submitted:
- (1) An amendment cannot be used if a different investigator wants to independently perform a similar procedure as an existing protocol that belongs to someone else.
  - (2) If a primary investigator leaves the Institute with unfinished active protocols and an existing associate investigator does not want to continue the study as a primary investigator, those protocols must be terminated. An exception may be made if a new person is interested in continuing the study. That individual must be present at the Institute, be familiarized with the existing protocol and the use of animals, and demonstrate his/her qualifications to use the species and perform the work.
  - (3) A new protocol is required when the overall approach to a research issue must be changed.

These changes are of such magnitude that the resulting protocol would bear little resemblance to the original protocol once the proposed changes are implemented. Initiating a new protocol insures that the new approach or procedure has scientific soundness and statistical validity and that impact on the experimental animal is given due consideration.

### **Procedures:**

- a) The primary investigator shall submit an amendment to the IACUC Coordinator.
- b) The IACUC Coordinator shall contact the attending veterinarian to determine whether an amendment reduces the severity of animal procedures.
- c) For an amendment resulting in a reduction of the severity of animal procedures:
  - (1) The IACUC Coordinator shall:
    - a) Obtain the approval of the Institute's attending veterinarian.
    - b) Notify the IACUC of the expedited review action at the next scheduled meeting.
  - (2) The attending veterinarian:
    - a) Shall have the same responsibilities and authority as that of the full IACUC except disapproval.
    - b) May request submission of the amendment to the full committee at the next scheduled meeting.
  - (3) If the attending veterinarian has a conflicting interest:



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- a) He/She shall not participate in the review of the amendment except to provide information as requested by other members of the IACUC.
- b) Another member of the IACUC shall be selected at random by the Institute's IACUC Coordinator to review the amendment.
- (4) If the attending veterinarian is unavailable due to leave, the alternate veterinarian or another member of the IACUC shall be selected at random by the IACUC Coordinator to review the amendment.
- d) For amendments not resulting in a reduction of the severity of animal procedures:
  - (1) The IACUC Coordinator shall
    - a) Notify all members of the IACUC in writing that an amendment has been submitted. This written notification shall contain, at a minimum the title of the study, the number of the amendment.
    - b) Forward a copy of the amendment and parent protocol to any member of the IACUC who requests such information.
  - (2) Members of the IACUC may request:
    - a) A copy of the written amendment and supporting documentation.
    - b) Submission of the amendment to the full committee at the next scheduled meeting.

If full committee review is not requested by any member of the IACUC after

- (3) distribution of the amendment, the Chair shall designate at least two members of the IACUC to conduct the review. Any IACUC member who has a conflicting interest shall not participate in the review of that amendment except to provide information requested by the IACUC.
- (4) The IACUC Subcommittee shall have the same responsibilities and authority as that of the full IACUC except disapproval.

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### MEMBERSHIP OF THE INSTITUTIONAL ANIMAL CARE AND USE COMMITTEE

#### TEXAS CHRISTIAN UNIVERSITY

Name of Member	Degree/Credentials	Position Title	PHS Policy Membership Rec.
Gary Boehm, Chair	Ph.D.	Professor	Scientist
Jennifer Higa	Ph.D.	Professor	Scientist
George King	Ph.D.	Professor	Scientist
Andrew Paquet	Ph.D.	Professor	Scientist
Giridhar Akkaraju	Ph.D.	Professor	Scientist
Tammy Joyce		Administrative Assistant	Nonscientist
Scott Nollet	Ph.D.	Professor	Nonscientist (mathematics)
Marinda Allender	R.N.	Professor	Nonscientist (nursing)
Raymond Mamaclay	B.S.		Non-affiliated
Angela Kaufman	?	University Minister	Nonscientist
Egeene Daniels**	D.V.M.	Veterinarian	
Larry Adams*	Ph.D.	Associate Provost	Non-voting member

\*non voting members must be so identified

\*\*Veterinarian: a veterinarian with direct or delegated program responsibility

Scientist: a practicing scientist experienced in research involving animals

Nonscientist: a member whose primary concerns are in a non-scientific areas (e.g. ethicist, lawyer, member of the clergy).

Non-affiliated member: a member who not affiliated with the institution in any way other than as a member of the IACUC, and who is not a member of the immediate family of a person who is affiliated. This member is expected to represent general community interests in the proper care and use of animals and should not be a laboratory animal user. A consulting attending veterinarian may not be considered non-affiliated.