

**OKLAHOMA CHRISTIAN UNIVERSITY
INSTITUTIONAL ANIMAL CARE AND USE COMMITTEE (IACUC)
ANIMAL CARE AND USE POLICIES**

JULY 23, 2016

I. INTRODUCTION:

This document entitled “Animal Care and Use Policies” is intended as a general statement of principles, guidelines, and description of capabilities at Oklahoma Christian University (OC) in regards to the care and use of live vertebrate animals in research and teaching. It is designed in accordance with applicable federal regulations and guidelines published by the U.S. Public Health Service and it strives to meet the standards of the Association for Assessment and Accreditation of Laboratory Animal Care. OC implements humane care and management practices for animals in compliance with U.S. Department of Agriculture (USDA) regulations promulgated under the Animal Welfare Act (AWA), the *Public Health Service Policy on Humane Care and Use of Laboratory Animals*, the *Guide for the Care and Use of Laboratory Animals*, and the *Guide for the Care and Use of Agricultural Animals in Research and Teaching*. OC has an established Institutional Animal Care and Use Committee (IACUC) in accordance with USDA regulations, and abides by the care and management practices approved by the IACUC. The animal research program at OC ensures the ethical and humane use of animals involved in teaching and research activities by providing quality animal care in a research environment that promotes good science.

II. FACILITIES:

The animal care facility of OC is located in the Research Annex adjacent to Herold Science Hall. These rooms are used for housing animals on a continuous basis. This building contains 5 small rooms served by a hallway, including two animal rooms, a cage wash and storage room, a room for storing food, bedding and other supplies, and a trash room. The two animal rooms are supplied with water through small sinks. The two animal rooms are primarily for small rodents such as mice, rats, and guinea pigs. The official repository of the animal care and use protocols and administrative forms, memos, letters, meeting minutes and other relevant IACUC documents and files are in the science administrative office of Noble Science Wing. A diagram illustrating the floor plan of the animal care facility is Appendix No. 1 to this document.

The heating and air conditioning system for the Research Annex is separate from the system of Herold Science Hall. It is regulated to provide an average air temperature of 25°C (+/- 2°C). Relative humidity is not controlled. Air is filtered both at the main blower unit and at a filter located in the air intake inside the facility. Filters are replaced annually. Lighting in all animal rooms is provided by fluorescent lamps mounted below the ceiling. The lamps are on timers.

The use of these rooms is absolute and will not be reallocated for different uses in the future. Storage of furniture, equipment, and lab supplies that are not involved in the care and use of animals is prohibited in any of the rooms of the animal care facility. The size of cages and racks are most suited for mice. Rats and guinea pigs may also be housed if space is available.

The facility serves to provide housing and care of small rodents in accordance with applicable federal and state regulations regarding animal care. It receives animals purchased by investigators, who verify that animals have been received in accordance with purchase orders, and that the received animals have been acquired through a licensed vendor or dealer. Incoming animals are checked for health status and, where appropriate, are placed in quarantine until they are safe to be housed in the same room with animals of the same species.

Animals are housed in legal size cages according to NIH guidelines for size and body weight of each individual species. Periodic checks are made to insure that animals have not outgrown their cage limits.

Animal carcasses, tissues, and organs from research and teaching are placed in laboratory freezers before disposal through a commercial company. Animal bedding waste is double bagged prior to disposal in trash dumpster.

III. PERSONNEL:

The operation of the animal facility involves a hierarchy of personnel under the overall guidance of the IACUC. These personnel include, in order of supervisory responsibility, the following:

1. Faculty Supervisor: Dr. Bill Luttrell, Ph.D.
Department of Chemistry & Physics
Noble Science Wing, Room 202H
Office: 405-425-5421
Cell: 405-370-3128
2. Veterinarian: Dr. Rachel Vazquez, D.V.M.
Warwick Animal Hospital
Office: 405-722-7717
3. Science Laboratory Manager: Mrs. Carrie Schaefer, B.S.
Vose Hall, Room 204
Office: 405-425-5399

Personnel caring for or using animals, including IACUC members, faculty, staff, or students, must complete the following training prior to any contact with the animals:

1. Complete online training courses through the American Association of Laboratory Animal Science (AALAS) at <https://www.aalaslearninglibrary.org>. Go to “Animal Care and Use Courses” and enroll for “Free Courses”.
2. All IACUC members and faculty principal investigators (PIs) must satisfactorily complete the appropriate “Compliance and IACUC Training” course and examination, such as “Working With the IACUC”.
3. IACUC members, faculty, principal investigators (PIs), and students and research assistants must complete the appropriate “Species-Specific” training course and examination, such as “Introduction to Mice”.
4. IACUC members, faculty, and PIs must print out the Course Completion Certificate and complete Appendix No. 5: “Qualifications for Working With Animals”. These two documents are to be forwarded to the Chair of the IACUC.
5. Students and research assistants must print out the Course Completion Certificate and complete Appendix No. 5. These two documents are to be forwarded to the sponsoring faculty member or PI.
6. Students and research assistants will also receive direct training, as applicable, from the sponsoring faculty member or PI.

No one is allowed to handle animals unless they have had the required training as described above. The faculty member serving as the PI will assure new students receive the proper training. The PI is responsible for assuring Appendix No. 5: “Qualifications for Working With Animals” is completed.

IV. ANIMAL USE AND ORIGIN:

1. Use of Animals. Faculty members serving as PIs are responsible for all animals housed in the animal rooms. Animals are for teaching or research use only. Investigators are expected to notify the science laboratory manager when they have completed the use of their animals. Normally animals will be housed for short-term studies and will not be maintained for long periods of time (more than 10 weeks). Per diem charges will not be assessed. There will not be an in-house breeding program. Animals shall be purchased from external sources that are licensed animal vendors. Animals are purchased by the faculty users with funds from their teaching or research budgets. The animal care facility does not have its own budget.

V. ANIMAL CARE

1. Food and Water. Animals are supplied food and water *ad libitum*. Water is supplied through a filtered water system in the Cage Wash and Storage Room. Water is supplied to small rodents via water bottles.

2. Sanitation (Cage Cleaning). Dry bedding material is placed in the animal cages at intervals of 2 or 3 days. Soiled bedding and litter is removed and discarded in large, sealed plastic garbage bags. The sealed bags are placed in large plastic garbage cans in the trash room and removed from the facility by the housekeeping staff and transported to the trash dumpster for Noble Science Wing and Herold Science Hall.

Cages are cleaned according to a regular schedule. Cages are cleaned every 2 or 3 days by transporting them to the Cage Wash Room and washing them in the sink with a water solution containing chlorine bleach and a detergent. A measuring cup is used to measure the amount of chlorine disinfectant per gallon of water needed to insure thorough sanitation. Written instructions for measuring out the correct amount of chlorine disinfectant per gallon of water is on the detergent container. To clean the cage, the animal is relocated into an unused, clean cage, and the contaminated cage is transported to the wash room. The soiled bedding and litter is removed, the cage is scrubbed thoroughly with the chlorine disinfectant/detergent solution in the sink, then rinsed by submerging in clean hot water in the next sink. They are then placed on cage storage shelves to air dry. The schedule for cleaning cages may vary depending on the type of animal cage and the number of animals per cage. Appendix No. 2 is the current protocol followed for the housing and care of mice.

3. Health Care of Laboratory Animals. An individual qualified to work with animals must examine the animal population each day. Any health problem is noted on the cage identification card and addressed at that time. In addition, any health problem that is noted shall be entered on the "Health Care Record Log", which is Appendix No. 10, for each individual animal. This record of observations will be kept on a clipboard in the animal room. Every effort is made to handle each health care problem by the responsible faculty member (PI), with the assistance of the veterinarian. An example of a routine problem that normally does not require special veterinary attention is superficial skin injuries. Minor cuts and abrasions are treated topically with Furazolidone (aerosol) powder and Bacitracin Zinc-Neomycin Sulfate-Polymyxacin Sulfate (ointment). More serious problems, such as diarrhea, influenza-like symptoms, labored breathing, etc., are discussed with the veterinarian, and actions are taken only as prescribed by the veterinarian. Animals suffering severe distress or pain from a health problem that cannot be treated in a timely manner are euthanized unless advised otherwise by the veterinarian. Any health care procedures taken are noted on the cage identification card for each individual animal.

4. Emergency Care of Laboratory Animals. Animals displaying signs of serious abnormalities require immediate attention and notification of the veterinarian. Examples of serious problems are: 1) labored breathing; 2) diarrhea; 3) greatly reduced or zero food consumption; 4) nasal discharge; 5) sneezing and/or coughing; 6) physical injury; 7) bleeding; 8) abnormal head tilt. These and other conditions that are considered serious abnormalities are to be considered emergencies. The

responsible faculty member or other qualified animal care personnel are required to inspect the animals daily, including weekends. If a serious condition requiring emergency care is recognized, the responsible faculty member will notify the veterinarian and request assistance in treating the condition. If a student or staff member recognizes the condition, he/she will notify the responsible faculty member who will in turn contact the veterinarian. If unable to reach the responsible faculty member, then the student or staff member will contact the veterinarian and leave a report via telephone and/or e-mail for the responsible faculty member. Animals suffering from a serious condition as described above will be treated as recommended by the veterinarian.

If unable to contact the veterinarian, animal care personnel will contact the Faculty Supervisor, Dr. Bill Luttrell, for guidance in the treatment of the sick animal. If unable to contact the responsible faculty member (PI), the Faculty Supervisor, or veterinarian, the animal suffering from the emergency condition will be euthanized.

5. Weekend/Holiday Care. Routine food and water supply activities are continued irrespective of the weekend or holiday. This is done by someone qualified to work with animals. This caretaker also inspects the animal population for health problems. If an emergency condition is discovered, the animal care worker will follow the emergency procedures as described in item (4) above. Cage cleaning and other cleaning duties are normally not done at this time (unless required by an emergency situation).

6. Euthanasia: Euthanasia is different for the different species of animals housed in the facility, as described in Appendix No. 3. Mice are typically euthanized by cervical dislocation, decapitation, carbon dioxide gas, or by intraperitoneal (IP) injection of sodium pentobarbital. Rats are typically euthanized by decapitation, carbon dioxide gas, or intraperitoneal (IP) injection of sodium pentobarbital. Guinea pigs are typically euthanized by carbon dioxide gas or intraperitoneal (IP) injection of sodium pentobarbital. The method of euthanasia must be approved for each research protocol by the IACUC.

7. Disposal of Animal Remains. Euthanized animals or animals that have died from various causes are placed in double plastic bags and stored in a laboratory freezer until picked up by a biological waste disposal company (Stericycle, 15 NE 47th St., Oklahoma City, OK 73105; phone 405-813-3100).

VI. OCCUPATIONAL HEALTH AND SAFETY

1. Immunizations. All personnel handling animals are required to have a current tetanus immunization. A current tetanus immunization must be within the past 5 years.

VII. IACUC ADMINISTRATION

1. Membership. The current membership of the IACUC consists of the following members: Dr. Bill Luttrell (affiliated science faculty member and Chair); Dr. Eric Phelps (affiliated science faculty member); Dr. Landon Moore (affiliated science faculty member); Dr. Nathan Shank (affiliated non-science faculty member); faculty member from Psychology (affiliated non-science faculty member); an unaffiliated member from the community; Dr. Rachel Vazquez (un-affiliated member and veterinarian). The veterinarian reports results of visits or telephone consultations to the Chair of the IACUC.

2. Functions. The functions of the IACUC are as follows: 1) Review, correct and update as necessary the “OC IACUC Animal Care and Use Policies” document; 2) Review, approve, recommend modifications or reject proposed protocols for use of laboratory animals in research and teaching, including protocols submitted for annual renewal, in accordance with Appendix 4: “OC Protocol Review Procedures”; 3) List the protocols approved by the committee since its last meeting; 4) Consider complaints, if any, concerning aspects of animal use and care and reports, if any, of non-compliance with institutional, state and federal regulations regarding animal use and care. Suspend protocols found not to be in compliance upon the recommendation of the full IACUC; 5) Consider recommendations, if any, to the Office of the VPAA for improvement or correction of the animal care and use program, facilities, personnel training, occupational health and safety of those handling animals or other issues concerning care and use of animals at OC; 6) Note any deficiencies in the program evaluation and, if any were found, provide specific plans and dates for their correction and then a follow-up separate program evaluation report to the Office of the VPAA; 7) Inspect the animal care facility bi-annually, noting major or minor deficiencies, and establish a plan of action with firm dates for their correction; 8) Report the results of IACUC inspections to the Office of the VPAA; 9) Provide the VPAA and the Academic Affairs Committee (AAC) an annual report of all animal protocols reviewed and decisions made for approval or disapproval.

3. Schedule of Inspections and Program Evaluations. The OC IACUC shall conduct inspections of the animal care facility and shall reevaluate the “OC IACUC Animal Care and Use Policies” document at least once every 6 months. The schedule for these inspections and evaluation is on or about March 15th and September 15th in each year. Additional inspections or evaluations may also be conducted by the IACUC.

VIII. RESOURCES CONSULTED IN DEVELOPING “OKLAHOMA CHRISTIAN UNIVERSITY INSTITUTIONAL ANIMAL CARE AND USE COMMITTEE (IACUC) ANIMAL CARE AND USE POLICIES” DOCUMENT DATED MARCH 21, 2016

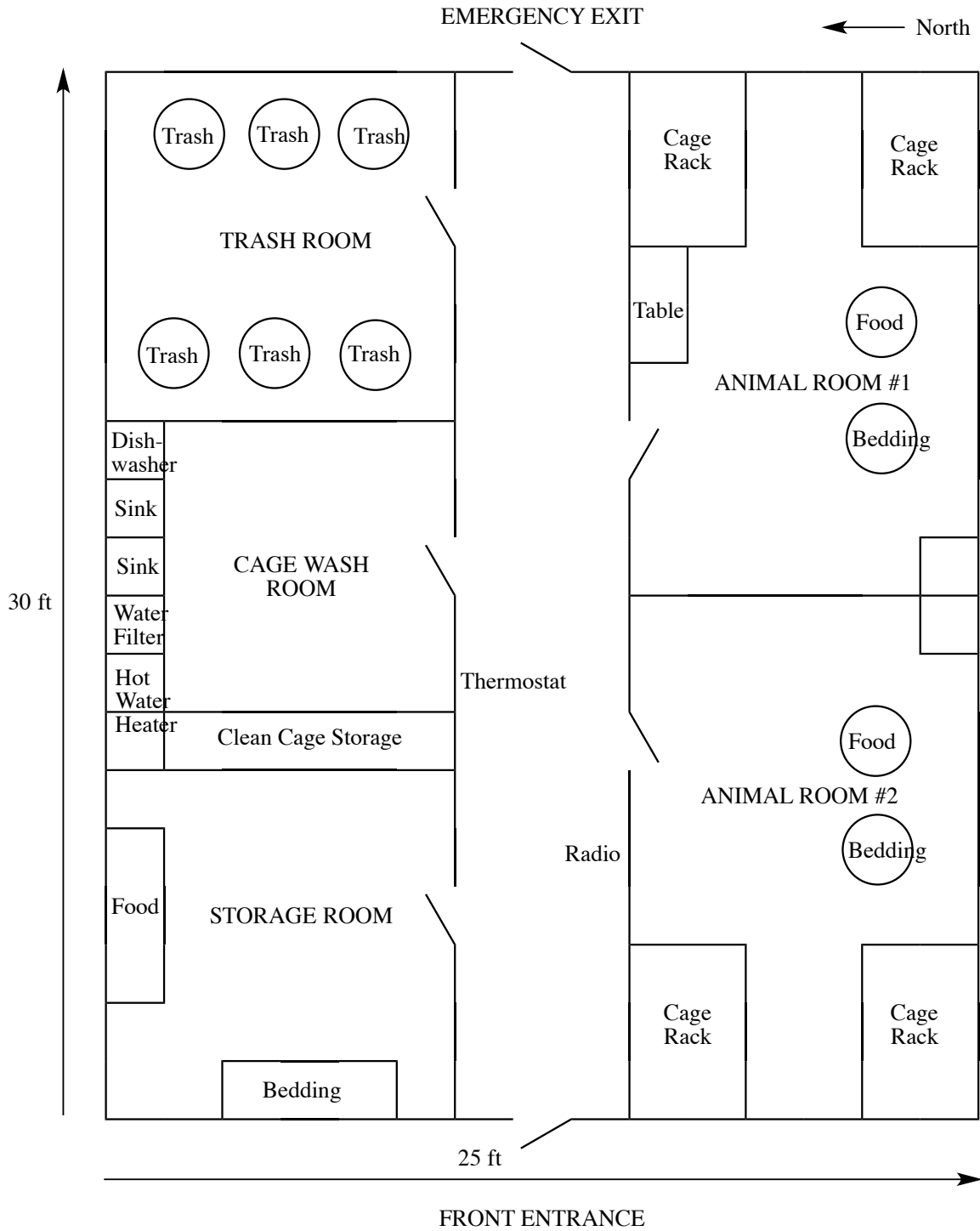
1. National Institute of Health (NIH) “Guide for the Care and Use of Laboratory Animals”
2. University of Oklahoma Health Sciences Center (OUHSC) Institutional Animal Care and Use Committee (IACUC)

3. Old Dominion University (ODU) Institutional Animal Care and Use Committee (IACUC)

VIII. APPENDICES

- Appendix No. 1: Floor Plan of the Animal Care Facility in the Research Annex of Herold Science Hall
- Appendix No. 2: Current Protocol for Housing and Care of Mice
- Appendix No. 3: Euthanasia
- Appendix No. 4: OC Protocol Review Procedures
- Appendix No. 5: Animal Study Protocol Proposal Form
- Appendix No. 6: Qualifications for Working with Animals
- Appendix No. 7: Annual Review Form
- Appendix No. 8: Animal Care Facility Inspection Report
- Appendix No. 9: Protocol Review/Tracking Form
- Appendix No. 10: Health Care Record Log

APPENDIX NO. 1: FLOOR PLAN OF THE ANIMAL CARE FACILITY IN THE RESEARCH ANNEX OF HEROLD SCIENCE HALL



APPENDIX NO. 2: CURRENT PROTOCOL FOR HOUSING AND CARE OF MICE

Arrival:

When mice arrive, prepare a cage by covering the bottom of a plastic box with about 1/2 inch of bedding. (Harlan Teklad Laboratory Grade Sani-chip) Place wire top on plastic box. Fill water bottle with purified water from faucet on far left of the sink in Cage Wash Room. Place water bottle in wire top. Fill other side of wire top with mouse feed (Harlan 2018 18% Protein Rodent Diet).

Label:

Label each cage appropriately with an index card inserted into metal label attachment. Label should contain name of scientists using the mice, strain of the mice, gender, and original number of mice. Any mouse deaths should be recorded on label with the date dead mouse was found.

Dead Mouse Discovery:

Record the date when the mouse was found dead. Place mouse in a latex glove and put it in the freezer. If it is a certain type of mouse, be sure to note the strain as well.

Environment:

Maintain temperature of Mouse House at 77°F (25°C) using the Auto setting on the Carrier Thermostat. Monitor the temperature using a thermometer in one of the mouse rooms for identifying any inaccuracy with the thermostat. Maintain light cycle in room with the 24 hr. Dial Time Switch Intermatic Model: T101 to be ON at 7am and OFF at 7pm. This is always a 12 hour cycle and may require occasional resetting.

Food and Water:

Be sure to check the wellness of the mice everyday. Also, check their food and water supply everyday. Give fresh water one selected day per week (usually every Monday) by emptying old water and refilling bottle with fresh purified water. (One full water bottle may or may not last a whole week.) Dump out old uneaten food each time the cages are changed. Replace with fresh food.

Facility Maintenance

Water bottles:

Excess water is emptied in sink. Bottles are stacked in dishwasher. Stopper tops are placed in dishwashing basket and are washed in the dishwasher as well.

Wire tops:

Wire tops are removed and washed in the dishwasher.

Running the Dishwasher:

Fill soap area with "Shur Fine" Automatic Dishwasher Detergent. Select Heavy Wash Settings and Start.

Cages:

Empty dirty bedding from the cage into trash bag.
With a wire brush, scrape out excess particles.
Stopper far right side of sink. Add tub soap (Fisher brand "Sparkleen 1" for Manual Washing) while adding water to the tub.
Add water to middle tub of sink.
Dip cage into soapy water and scrub with scrub brush.
Rinse cage in the water of the middle tub.
Stack cage to air dry on far left sink tray, far left sink tub, and if necessary on a portable cart brought from the trash room.
Repeat with remaining cages.

**If cages are to be left unwashed for a couple of days with dirty bedding in them, be sure to put a plastic trash bag over the dirty cages to reduce the smell in the animal care facility. **

Clean cages twice a week as according to AALAS (American Association for Laboratory Animal Science) by transferring the mice into freshly prepared cages and washing the old cages. Be sure to wipe the bedding off the mouse racks and clean with cleaning solution. When changing cages is finished, the bedding from the floor should be swept with a broom and thrown away in the trash.

Be sure to tie off each trash bag and place in large plastic trash cans in trash room. The urine and fecal waste smells horrible. The build up of ammonia from urine can be overwhelming and detrimental to any and all animal care workers.

Be sure to secure the mouse house front door by closing the dead bolt properly and making sure the mechanism in the door is locked as well.

Questions and Help

For questions or concerns, contact the following numbers:

Contact	Extension number (425-....)
Dr. Luttrell	5421
OC Security	5500
IT/Maintenance	5555

Maintenance/Cleaning staff does take care of this facility in their normal duties such as removing the trash bags and cleaning floors. Please be responsible and take care of your mess when one is made.

APPENDIX NO. 3: EUTHANASIA

1. Cervical Dislocation: Appropriate for mice but only as part of specific research protocols approved by the IACUC. Restrain the mouse, hold by the tail on a smooth surface, pull tail gently to stretch mouse, place metal bar (e.g., ruler, scalpel, etc.) firmly across neck, then pull tail quickly to dislocate neck vertebrae.
2. Decapitation: Appropriate for mice and rats. Requires a guillotine. Restrain the animal, insert the head into the guillotine up to the base of the nick, then quickly pull handle of knife down across neck to decapitate. Motion must be rapid and firm to obtain a quick kill.
3. Carbon Dioxide Gas: Appropriate for mice, rats and guinea pigs. This method of euthanasia requires a trash can, trash can liners and a tank of compressed CO₂ gas with a long tube. Place the plastic bag in the trash can, place the animal or animals in their cage in the plastic bag, insert the tube from the CO₂ tank, close lid of trash can and wait approximately one hour. Observe the animal(s) and verify that breathing and heart beats are absent before disposing of the carcasses.
4. Intraperitoneal (IP) Injection of Sodium Pentobarbital: Appropriate for mice, rats, and guinea pigs. This requires the reagent (must be current, i.e., not expired), syringe (3 mL) and hypodermic needles (20-30 gauge). The amounts to be injected are 130 mg/kg for mice, 75 mg/kg for rats or 50 mg/kg for guinea pigs. Inject IP and observe animal until breathing and heartbeat has stopped before disposing of carcasses. The individual performing this type of anesthesia and euthanasia must have a current DEA permit.

APPENDIX NO. 4: OC PROTOCOL REVIEW PROCEDURES

The following procedure is used to review proposed protocols and approved protocols requiring revision in objectives or methodologies.

1. Principal Investigator (PI) obtains protocol forms from the OC IACUC website (Appendices 5 and 6).
2. PI fills out protocol forms and submits them to the IACUC Chair as Word documents attached to an email. If the PI needs assistance in filling out the forms, he/she contacts the IACUC Chair.
3. The IACUC Chair assigns an IACUC Protocol Number and then forwards the completed forms to each committee member.
4. Protocol Review. Protocol approval normally is done by the “Designated Reviewer Method”. In accordance with U.S. Public Health Service policy, all IACUC committee members will receive copies of each protocol and will have an opportunity to review it. If a full committee review is not requested by any member of the IACUC within the designated period of time (10 working days), the Chair of the IACUC will designate the veterinarian and at least one other member, in addition to the Chair of the IACUC to review the protocol. The designated reviewers shall have the authority to approve, require modifications in the protocol (to secure approval) or to call for full committee review of the protocol at a convened meeting of the IACUC. If the latter method is used, voting to approve the protocol may be done at the convened meeting of the committee. Following approval by the designated reviewers, the IACUC Chair will sign the protocol approval sheet and forward the approval to the responsible faculty member and send an electronic copy to the IACUC file on the Judah server. However, any member of the IACUC may request a full review at a convened meeting of the committee. If a convened meeting is called, voting will not be done by telephone, e-mail, U.S. mail or FAX or otherwise to obtain members’ votes.

If a faculty member or other scientist conducting research with animals at OC, proposes significant changes or amendments in ongoing research projects, the IACUC will review these changes or amendments in the same manner as a new protocol. Thus, if a faculty member requests an annual review for an ongoing project but adds amendments or significant changes in the protocol, the OC IACUC will subject this protocol to a full review, in accordance with the procedures as described above.

If the protocol is rejected or approved with qualifications, the reasons for this action must be given on the Appendix No. 9: “Review/Tracking Form” and returned to the PI. A protocol approved with qualifications must obtain the acceptance of the recommended revisions from the PI. PI acceptance in writing on the protocol form constitutes IACUC approval and does not require another review. If the protocol is

rejected, the Chair of the IACUC will return the protocol to the PI for revision and resubmission. If the PI appeals the rejection or the qualifications, the Chair of the IACUC will call a meeting of the committee. In addition, any committee member may also request a meeting of the committee to review the protocol. A revised protocol that is resubmitted after rejection will be considered as a new protocol and the same procedures that apply to new protocols will also apply. Similarly, if the PI appeals a qualification of a previously submitted protocol, this will also be treated as a resubmission. In this case, the PI must provide additional supporting information to explain why the qualification should be removed.

If a committee member is unable to review a protocol due to temporary absence, the Chair of the IACUC may approve the protocol so long as all other members, including the veterinarian, have approved it.

5. If a PI appeals the decision of the committee, the Chair of the IACUC convenes a meeting of the committee to discuss the case. The committee must decide if the claims of the PI are legitimate or not. The committee may reconsider its prior decision and approve the decision. The committee may invite the PI to its meeting in order to obtain the maximum information available. Following its meeting, the Chair of the IACUC writes to the PI and advises him/her of the committee's decision. If the decision is favorable, the PI may proceed to carry out the research in accordance with the protocol. If the committee reaffirms its original decision, there is no further appeal.

6. Following approval of a protocol by the IACUC, the Chair signs the protocol and sends a letter advising the PI that his/her protocol has been accepted and that the work may begin.

7. Protocols are needed for all laboratory animals housed in the OC animal care facility. In addition, PIs conducting field work with wild vertebrates must submit a protocol if their procedures involve any animal trapping, capture, handling, tagging or other procedures in which the animal is captured and restrained, even if only for brief periods. The protocol submission and review procedure is the same as that involving the laboratory animals as noted above. Investigators should include documentation of valid permits, if required, for compliance with state and federal regulations applicable to wildlife. Field studies involving observational studies in which no animals are captured and restrained can be excluded from the protocol review process.

8. Annual Reviews. Protocols are normally approved for a period of one year or less, but may be renewed. One month before the annual review date, the Administrative Assistant of the IACUC Chair sends an annual review form (Appendix 7: "Annual Review Form") to the PI. The form includes questions concerning changes in personnel, species, numbers of animals used, objectives and methodologies for the project. The PI completes the form and returns it to the Administrative Assistant within 10 business days. The Administrative Assistant

forwards the PI's annual review form to the committee for review and approval. If there are no significant changes, the committee members review and approve the extension of the project for another year. Every effort is made to complete the review and approval of the current project so that it may continue without any interruption. If the committee determines that there are major changes in the project, the committee will require a new protocol. In this case, the protocol procedure submission and review process are the same as for a new protocol.

9. Suspension of an Approved Protocol. The IACUC may suspend a protocol which it had previously approved if it discovers that the activities are not being carried out in accordance with the description of the methods in the protocol or when it is not in compliance with U.S. Department of Agriculture (USDA) regulations or university policies. Suspension may be done only after a review of the matter at a convened meeting of the committee at which a quorum is present. Suspension must be recommended by a majority of the members present. If a suspension is recommended, the Chair of the IACUC shall notify the PI and include the reasons for the action taken. The Chair shall also notify the PI's department chair, dean, and the VPAA. If the research in question is being funded from external sources, the VPAA shall notify the sponsor. The protocol shall remain suspended until the IACUC determines that corrective action has been taken.

10. Qualifications to Work With Animals. Everyone who handles animals must be qualified to do so. To certify an individual's qualifications, he/she must submit a form provided by the IACUC for this purpose (Appendix No. 6: "Qualifications for Working With Animals"). PIs must take the online AALA "Compliance and IACUC Training" course and examination and the appropriate species-specific training course and examination. Students, research assistants, and staff members who have been or who plan extensive use of animals in their research and teaching activities also are required to complete the AALA course and examination for the species they use. Certification will be noted on the qualifications form (Appendix No. 6). In addition, further training may be provided by the responsible faculty member or scientist supervising the research or teaching activity. After he/she has completed the applicable course and examination, the qualifications form (Appendix No. 6) is kept on file by the PI. Approval of the certification form (Appendix No. 6) is part of the IACUC approval process along with the approval of Appendix No. 5: "Animal Study Protocol Proposal Form". Thus, a person receives approval from the IACUC for the particular type of animal(s) associated with the research or teaching activity described in the protocol. Additional certification may be required for future studies if different species of animals are to be used.

APPENDIX NO. 5: ANIMAL STUDY PROTOCOL PROPOSAL FORM

Date:

IACUC Protocol Number:
(to be assigned by IACUC)**A. ADMINISTRATIVE DATA**

1. Type of Submission

 New submission Replacement for existing approved protocol number:

2. Project Title:

3. Principal Investigator

Name:

Degrees:

College:

Department:

Office/Room:

Office Telephone:

Home Telephone:

Cell Phone:

E-mail address:

4. Other Faculty Involved:

5. Proposed Starting Date:

6. Proposed End Date:

(may not exceed 1 year)

7. Funding

Source:

Effective Period:

8. Answer each of the following questions with "Yes" or "No".

Will this project involve:

a. Use of radioisotopes *in vivo*?

b. Use of infectious disease agents?

c. Use of biological toxins?

d. Use of hazardous agents?

e. Use of carcinogenic agents?

f. Use of suspect carcinogenic agents?

g. Use of cytotoxic agents?

h. Use of antineoplastic agents?

- i. Use of recombinant DNA?
- j. Study conducted at Biosafety Level 3 or 4?
- k. Antibody production?
- l. Genetically engineered animals?
- m. X-rays?

If yes, attach specific environmental health and safety procedures to be followed including the procedures for safe handling and disposal of contaminated animals and materials resulting from this study.

9. Check the USDA classification below that best describes the use of animals in this investigation. If more than one classification applies, check the highest classification.

	Classification B	<u>Animals being bred, conditioned, or held for use in teaching, testing, experiments, research, or surgery, but not yet used for such purposes.</u> <i>Examples: Breeding colonies of any animal species that are held in legal sized caging and handled in accordance with the Guide and other applicable regulations. Breeding colony included parents and offspring, newly acquired animals that are held in proper caging and handled in accordance with applicable regulations, animals held under proper captive conditions or wild animals that are being observed.</i>
	Classification C	<u>Animals upon which teaching, research, experiments, or tests will be conducted involving no pain, distress, or use of pain-relieving drugs.</u> <i>Examples: Procedures performed correctly by trained personnel such as the administration of electrolytes/fluids, administration of oral medication, blood collection from a common peripheral vein per standard veterinary practice (dog cephalic, cat jugular) or catheterization of same, standard radiography, parenteral injections of non-irritating substances; euthanasia performed in accordance with the recommendations of the most recent AVMA Panel on Euthanasia, utilizing procedures that produce rapid unconsciousness; manual restraint that is no longer than would be required for a simple exam; short period of restraint for an adapted non-human primate.</i>
	Classification D	Animals upon which experiments, teaching, research, surgery, or tests will be conducted involving accompanying pain or distress to the animals and for which appropriate anesthetic, analgesic, or tranquilizing drugs will be used. <i>Examples: Surgical procedures conducted by trained personnel in accordance with standard veterinary practice such as biopsies, gonadectomy, exposure of blood vessels, chronic catheter implantation, laparotomy, or laproscopy; blood</i>

		<i>collection by more invasive routes such as intracardiac or periorbital collection from species without a true orbital sinus such as rats and guinea pigs; administration of drugs, chemicals, toxins, or organisms that would be expected to produce pain or distress but which will be alleviated by analgesics.</i>
	Classification E	Animals upon which teaching, experiments, research, surgery, or tests will be conducted involving accompanying pain or distress to the animals for which the use of appropriate anesthetic, analgesic, or tranquilizing drugs will adversely affect the procedures, results, or interpretation of the teaching, research, experiments, surgery, or tests. <i>Examples: Procedures producing pain or distress unrelieved by analgesics such as toxicity studies, microbial virulence testing, radiation sickness, and research on stress, shock, or pain; surgical or post-surgical sequella from invasion of body cavities, orthopedic procedures, dentistry, or other hard and soft tissue damage that produces unrelieved pain or distress; negative conditioning via electric shocks that would cause pain in humans; chairing of non-human primates not conditioned to the procedure for the time period used.</i>

NOTE: For Classification E studies, an explanation of the procedures producing pain or distress in these animals and the justification for not using appropriate anesthetic, analgesic, or tranquilizing drugs must be provided the IACUC. This information for USDA regulated species must be reported to the USDA, will be available from the USDA under the Freedom of Information Act, and may be publicly available through the Internet via the USDA website.

B. ANIMAL REQUIREMENTS

1. Species:
2. Strain:
3. Age/weight (or size):
4. Source (identify external supplier):
5. Estimated number of animals to be used:
6. If animals are to be maintained as a standing colony, maximum number at any one time:
7. Location where animals will be housed:

8. Describe how the animals used in this study will receive environmental enrichment to help ensure their well-being:

9. Are you requesting an exemption to providing enrichment? (Yes or No) If yes, provide justification.

C. STUDY OBJECTIVES

Describe briefly (preferably in non-technical language), the objective(s) of this study.

D. RATIONAL FOR ANIMAL USE

Explain rational for animal use.

1. Justify the appropriateness of the species chosen and the number of animals to be used by addressing a) through e) that follow:

a) What alternatives to animal use have been considered, e.g. computer and molecular modeling, *in vitro*, cell, tissue or organ culture, etc.? Document the references from the literature you have searched for alternatives to using animals to obtain the needed scientific information. At least two independent databases must be searched to ensure that the proposed study (1) does not use animals if alternate methods are available, and (2) does not duplicate previous work. Which of the following databases have you searched?

_____ AGRICOLA

_____ PUBMED

_____ ALTBIB (Bibliography on Alternatives to Animal Testing)

_____ AVLINE

_____ TOXLINE

_____ TOXNET

_____ CURRENT RESEARCH INFORMATION CENTER

_____ ANIMAL WELFARE INFORMATION CENTER (National Agriculture Library)

_____ AIDSLINE

_____ CANCERLIT

_____ TOXLIT

_____ GOOGLE SCHOLAR

_____ OTHER (Describe)

Provide the following information for the database searches completed:

Name of Database:

Begin Date (mm/yy):

End Date (mm/yy):

Date Search Conducted (mm/dd/yy):

Provide the keywords that were used in the database searches.

Give a brief narrative description summarizing your findings, including citations of pertinent references found.

b) Consultation with other experts in areas of investigation (list names and addresses):

c) If you have current manuscripts in press, papers presented at scientific meetings, or other original new references, they may also be included here.

d) Discuss the appropriateness of the species chosen (why is this species the best one to use for the proposed study?)

e) Provide justification that the number(s) given in this protocol is the minimum necessary to obtain *statistically meaningful* results. A reference to an appropriate statistical methodology or the recommendations of a qualified statistician may be used. If the services of a statistician were used, provide a brief (2 page) resume of the qualifications of the statistician.

2. Based upon the information obtained from the databases searched, or any other available information as documented above, do the studies in this proposal unnecessarily duplicate any previous work? (Yes or No)

3. If the proposed studies duplicate previous work, provide a brief description of those studies and a justification for proceeding with the proposed studies.

E. DESCRIPTION OF EXPERIMENTAL DESIGN AND ANIMAL PROCEDURES

Briefly explain the experimental design and specify all animal procedures. A brief but clear description of the species, numbers of animals, and their distribution into experimental groups will expedite the review process. If appropriate, a summary table showing the distribution of animals by experimental groups should be included (attach additional sheet(s) if needed). This description should be written so as to

enable the IACUC to understand the experimental course of the animal from entry in the experiment to its endpoint in the study. Specifically address the following:

1. Injections or inoculations (identify infectious agents, adjuvants, doses, sites of injection, volume, route of administration and schedules, etc.)
2. Blood withdrawals (volumes, frequency, etc.)
3. Non-survival surgical procedures (Note: do not include survival surgery here)
4. Radiation (specify type of radiation or radioisotope, dosage and schedule)
5. Methods of restraint
6. Animal identification methods (if appropriate) (ear or tail marks, cage card, etc.)
7. Experimental endpoint (specify results that will enable animal to be dismissed from the study; e.g. percentage body weight gain or loss, survival to specified study day, abnormal behavior, etc.)
8. Building and room number where animal procedures will be performed

F. PAIN OR DISTRESS

Check the appropriate category (s) and indicate the approximate number of animals in each. Sum should equal total from section B above.

1. Will animals be subject to any procedure which could cause pain or distress? (Yes or No) If yes, specify the number of animals:
2. Will pain or distress be relieved by a procedure, anesthetic, analgesic or tranquilizing drug? (Yes or No) If yes, specify the number of animals:
3. Will any animals be subject to unrelieved pain or distress? (Yes or No) If yes, specify the number of animals:

If it is inappropriate to use anesthetics, analgesics and/or tranquilizing drugs, explain why: (Note: Routine procedures such as injections, blood sampling, etc., may not require these drugs.)

G. SURVIVAL SURGERY

If proposed, complete the following:

1. Type of Surgery. Briefly identify and describe the surgical procedure(s) to be performed including the aseptic methods to be utilized.

2. Personnel. Identify the personnel who will perform the surgery and give their qualifications.
3. Location. Give the building and room location where the surgery will be performed.
4. Post-operative Care. Describe the post-operative care and identify the responsible faculty member.
5. Prior Surgeries. Has any surgery been done on any of the study animals prior to being placed in this study. (Yes or No) If yes, explain why it is necessary to do additional surgeries.
6. Repeat Surgeries. Will more than one survival surgical procedure be done on any of the animals in this study. (Yes or No) If yes, justify.

H. ANESTHESIA, ANALGESIA OR TRANQUILIZATION

For animals that may experience pain or distress, specify the anesthetics, analgesics, sedative or tranquilizers that are to be used. Include the name of the agent(s), dosage and route of administration.

I. METHOD OF EUTHANASIA OR DISPOSITION OF ANIMALS AT END OF STUDY

Indicate the proposed method. If a parenteral agent, indicate the dosage and route of administration. If method of euthanasia is decapitation or cervical dislocation without anesthesia, provide scientific justification why such methods must be used.

J. SPECIAL CONCERNS OR REQUIREMENTS OF THE STUDY

List any special housing, animal care requirements or safety requirements (e.g. special caging, water or feed or waste disposal).

K. REFINEMENT, REDUCTION OR REPLACEMENT

Describe one or more provisions in this protocol that refine, reduce or replace the use of animals. *Refinement* is defined as an alternative to earlier examples of animal use by better use and/or modification of existing procedures so that animals are less subject to pain or distress. *Reduction* is defined as a lesser number of animals used to obtain information of a certain amount and precision through sharing of animals, better experimental design, or changed practices. *Replacement* is defined as an alternative to animal use, replacing animal use with some method that does not require whole animals, e.g. the substitution of insentient materials for animals, substitution of a lower species less sensitive to pain and distress, etc.

L. PRINCIPAL INVESTIGATOR CERTIFICATION

Initial A through D and sign below:

Statement of Responsibility

I acknowledge that federal and institutional regulations require that any significant changes in my research protocol (i.e. animal model, procedures) must be approved prior to implementation. I assume responsibility for compliance with such regulations by all personnel involved with this protocol.

_____ A. I certify that the personnel performing the animal procedures/manipulations described in this protocol are qualified to handle animals and have been properly trained to ensure that no unnecessary pain or distress will be caused as a result of the procedures/manipulations. Attach Appendix No. 6: "Qualifications for Working With Animals" for each person working with the animals used in this study.

_____ B. If survival surgery is to be done, I certify that the individuals listed in section A of this protocol have received training in aseptic surgical methods and techniques; proper use of anesthetics, analgesics and or tranquilizers; and procedures for reporting animal welfare concerns.

_____ C. If significant, long-lasting pain or distress will result from the procedures described in this protocol, I certify that I have reviewed the pertinent scientific literature and have found no valid alternatives to any procedures described herein.

_____ D. I understand that this protocol is valid for a period not to exceed one year from the date of approval and that further approvals are required to continue animal use under this protocol.

SIGNATURE OF PRINCIPAL INVESTIGATOR:

(Name)

(Date)

(Printed Name of Principal Investigator)

***IACUC CHAIR CERTIFICATION OF REVIEW AND APPROVAL BY OC
INSTITUTIONAL ANIMAL CARE AND USE COMMITTEE:***

(Name)

(Date)

(Printed Name of IACUC Chair)

APPENDIX NO. 6: QUALIFICATIONS FOR WORKING WITH ANIMALS

Indicate below the name of the student, research assistant, staff member, or faculty member involved with this project, or the name of the IACUC member. Indicate the species to be handled and date by which the person may be considered qualified in the technical skills required for the undersigned's research project(s). The technical skills may involve: collection of blood, administration of anesthesia, tranquilizing or euthanizing agent, or any parenteral injections as well as oral medications, etc.

1. Name of Student, Research Assistant, Staff Member, Faculty Member, or IACUC Member:

2. Animal Species (Specify animal for which the person has received training):

3. Type of Training Received:

Name of AALAS course*:

Date Completed:

If a student, research assistant, staff member, or faculty member, receiving direct training from responsible faculty member (PI):

Printed Name of PI Giving Training: _____

Date Completed:

Signature of PI: _____

4. Tetanus immunization within preceding five years is required for anyone working with animals.

Approximate date immunization received:

5. Signature of Student, Research Assistant, Staff Member, Faculty Member, or IACUC Member:

_____ Date: _____

*Attach copy of course completion certificate to this form.

APPENDIX NO. 7: OC IACUC ANNUAL REVIEW FORM

This form is used to reactivate an ongoing, IACUC-approved protocol for an additional year if there are no significant changes in the animal species, number of animals, Principal Investigator, or methods and procedures. If significant changes in any of these categories are planned, a new protocol must be submitted to the Institutional Animal Care and Use Committee for an in-depth, comprehensive review. This form is not required if the project has terminated.

Project Title:

IACUC Protocol Number (for approved project):

Principal Investigator:

1. What is the current status of the project? Completed: _____ In progress: _____
2. If the project is to be continued, give the projected date of completion:
3. Has the species of animal changed, or is expected to change? (Yes or No)
4. Have you made or do you expect to make significant changes in the methods or procedures used in this research? (Yes or No)
5. Has the Principal Investigator for this project changed, or is the PI expected to be changed? (Yes or No)
6. Have there been changes in any other personnel assigned to the project? (Yes or No) If yes, attach Appendix No. 6: "Qualifications for Working With Animals".
7. **Certification.** I certify that the use of all animals involved in this project will not be subjected to pain or distress without the use of appropriate anesthetic, analgesic or tranquilizing drugs unless specific approval has been given by the IACUC. This project will be carried out to the best of my knowledge within the provisions of federal regulations and guidelines published by the U.S. Public Health Service.

Signature of Principal Investigator

Date

Printed Name of Principal Investigator

Signature of IACUC Chair

Date

Printed Name of IACUC Chair

APPENDIX NO. 8: ANIMAL CARE FACILITY INSPECTION REPORT

Significant (Major) Complaints*	Minor Complaints**

Date of Report:

Signatures of IACUC Members:

Dr. Bill Luttrell (IACUC Chair): _____

Dr. Eric Phelps: _____

Dr. Landon Moore: _____

Dr. Nathan Shank: _____

Member from Psychology: _____

Community Member: _____

Dr. Rachel Vazques (Veterinarian): _____

*Examples of Significant (Major) Deficiencies: Problems that affect the health and welfare of the animal population; problems that put animal health at risk.

**Examples of Minor Deficiencies: Problems that do not affect the health or welfare of the animal population and do not put the health of any of the animals at risk; problems that might cause minor discomfort.

Specific Plan for Correcting Deficiencies:

Name of Deficiency	Type (Significant or Minor)	Brief Description of Work to be Done	Completion Date

APPENDIX NO. 9: OC IACUC PROTOCOL REVIEW/TRACKING FORM

IACUC Protocol Number: _____ Date Submitted: _____

Project Title: _____

Principal Investigator: _____

Type of Review: New Protocol: _____ Annual Review: _____

Replacement for existing approved Protocol Number: _____

The designated reviewers consulted with one another on (date or dates) _____ and made the recommendations given below:

1. Name of Reviewer No. 1: _____Recommendation: Approve: _____
Require Modifications: _____
Request full IACUC review: _____

(Attach additional page if more room is needed.)

Signature of reviewer: _____ Date: _____

2. Name of Reviewer No. 2: _____Recommendation: Approve: _____
Require Modifications: _____
Request full IACUC review: _____

(Attach additional page if more room is needed.)

Signature of reviewer: _____ Date: _____

3. Name of Veterinarian: _____Recommendation: Approve: _____
Require Modifications: _____
Request full IACUC review: _____

(Attach additional page if more room is needed.)

Signature of veterinarian: _____ Date: _____

Submitted for review by entire IACUC (minimum of 5 members, including Chair and veterinarian):

The entire IACUC met on (date): _____ The committee vote was: Yes ___ No ___

IACUC decision: Approve: _____; Amend: _____; Reject: _____

Explanation of reason for committee action/comments if vote is amend or reject:

Reviewed and Approved by IACUC Chair: _____
Printed Name of IACUC Chair

Signature

Date: _____

Notification of Principal Investigator (date): _____

APPENDIX NO. 10: HEALTH CARE RECORD LOG

- 1. Animal Species and Tag Number: _____
- 2. PI: _____
- 3. Abnormality/Illness: _____

Record of Observations

- 1. Date: _____
Observation: _____

- 2. Date: _____
Observation: _____

- 3. Date: _____
Observation: _____

- 4. Date: _____
Observation: _____

5. Date: _____

Observation: _____

6. Date: _____

Observation: _____

7. Date: _____

Observation: _____

8. Date: _____

Observation: _____

9. Date: _____

Observation: _____

