AUBURN UNIVERSITY

POLICIES FOR CARE AND USE OF LIVE VERTEBRATE ANIMALS

Revised September 1, 2010

DECLARATION

Auburn University supports the responsible use of animals in teaching, demonstration, and research efforts and in the production or maintenance of animals for use in these efforts. Auburn University is committed to the highest quality of animal care. Auburn University seeks to establish and maintain a comprehensive animal use program that promotes full compliance with federal, state, and local regulations; the policies of Auburn University; and guidelines of the cognizant federal agencies, regardless of the nature and purpose of animal use. This document is the official policy and procedures manual of Auburn University for the care and use of live, vertebrate animals.

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Jay Gogue, President Date

ACRONYMS FOR COMMONLY USED TERMS

AAALAC	Association for Assessment and Accreditation of Laboratory Animal Care International
AAES	Alabama Agricultural Experiment Station
APHIS	Animal and Plant Health Inspection Service
APMF	Animal Production/Maintenance Form
ASRF	Animal Subjects Review Form
AU	Auburn University
AVMA	American Veterinary Medical Association
AWA	Animal Welfare Act
CV	Clinical Veterinarian
CVM	College of Veterinary Medicine
DHHS	Department of Health and Human Services
DRMS	Department of Risk Management and Safety
FDA	Food and Drug Administration
IACUC	Institutional Animal Care and Use Committee
IAV	Institutional Attending Veterinarian
INAD	Investigational New Animal Drug
IO	Institutional Official
NIH	National Institutes of Health
OHS	Occupational Health and Safety
OJI	On the Job Injury
OLAW	Office of Laboratory Animal Welfare
ORC	Office of Research Compliance
OUV	Office of the University Veterinarian
OVPR	Office of the Vice President for Research
PAM	Post Approval Monitoring
PAV	Program Attending Veterinarian

PHS	Public Health Service
PI	Principal Investigator
PRN	Protocol Review Number
PV	Project Veterinarian
UAV	Unit Attending Veterinarian
USDA	United States Department of Agriculture
VPR	Vice President for Research

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INTRODUCTION

In accordance with federal regulations, Auburn University is committed to the highest quality of animal care. Regulations include: 1) The Animal Welfare Act (AWA, 7 USC 2131) and 2) The Health Research Extension Act of 1985 (PL 99-158, codified at 42 USC 289d), as amended. The United States Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS) implements the AWA through its *Animal Care Policy Manual*. (See also the Code of Federal Regulations Title 9, Chapter 1, Subchapter A, Parts 1, 2, and 3.) Standards also are set forth in the current versions of the *Guide for the Care and Use of Agricultural Animals in Research and Teaching* ("Ag Guide," Federation of Animal Science Societies, 2010) and in the *Guide for the Care and Use of Laboratory Animals (*"Guide," National Research Council, 1996).

In 1985, the White House Office of Science and Technology published the *US Government Principles for the Utilization and Care of Vertebrate Animals Used in Testing, Research, and Training*. The United States Department of Health and Human Services (DHHS), Public Health Service (PHS) implements these nine basic principles, developed by the Interagency Research Animal Committee, in its *Policy on Humane Care and Use of Laboratory Animals*. Guidance is provided in the *Guide,* the *Ag Guide, and other applicable guides*. [1]

Animals covered by the cited federal legislation/regulations and *Guides* are presented below:

<u>Animal Welfare Act/USDA Animal Care Policy</u>: any live or dead dog, cat, nonhuman primate, guinea pig, hamster, rabbit or any other warm-blooded animal, which is being used, or is intended for use for research, teaching, testing, experimentation, or exhibition purposes or as a pet. [It excludes birds, rats and mice bred for use in research, horses not used for research purposes, and other farm animals such as livestock and poultry used or intended for use as food or fiber or for improving animal nutrition, breeding, management, or production efficiency, or for improving the quality of food or fiber.]

[1] Other applicable guides include *Acceptable Field Methods in Mammalogy,* the *Guidelines for the Capture, Handling, and Care of Mammals,* the *Guidelines for Use of Fishes in Field Research,* the *Guidelines for Use of Live Amphibians and Reptiles in Field Research,* and the *Guidelines to the Use of Wild Birds in Research*.

PHS Policy: applicable to any live, vertebrate animal (e.g., traditional laboratory animals, livestock, poultry, wildlife, aquatic animals) used in research, research training, experimentation, biological testing, and related activities wherein the activity is supported by the PHS and conducted at Auburn University, or at another institution as a consequence of the sub-granting or subcontracting of a PHS-conducted or supported activity by Auburn University. Applicability includes live vertebrate animals wherein the PHS does not support the activities but the animals are housed in the same facility as PHS-supported animal activities. PHS Policy requires that Auburn University's programs of animal care and use be based on the *Guide for the Care and Use of Laboratory Animals* and that they comply, as applicable, with USDA regulations and other federal statutes and regulations relating to animals. The PHS, through its Office for Laboratory Animal Welfare (OLAW), advises that the maintenance of uniform and consistent standards is an essential ingredient in the development and implementation of a quality animal care and use program. Only when the institution can document that the animal care and use program funded by a non-PHS source is entirely separate and distinct, physically and programmatically, from PHS-supported activities will OLAW consider its exclusion from the Auburn University Assurance of Compliance with PHS Policy on Humane Care and Use of Laboratory Animals.

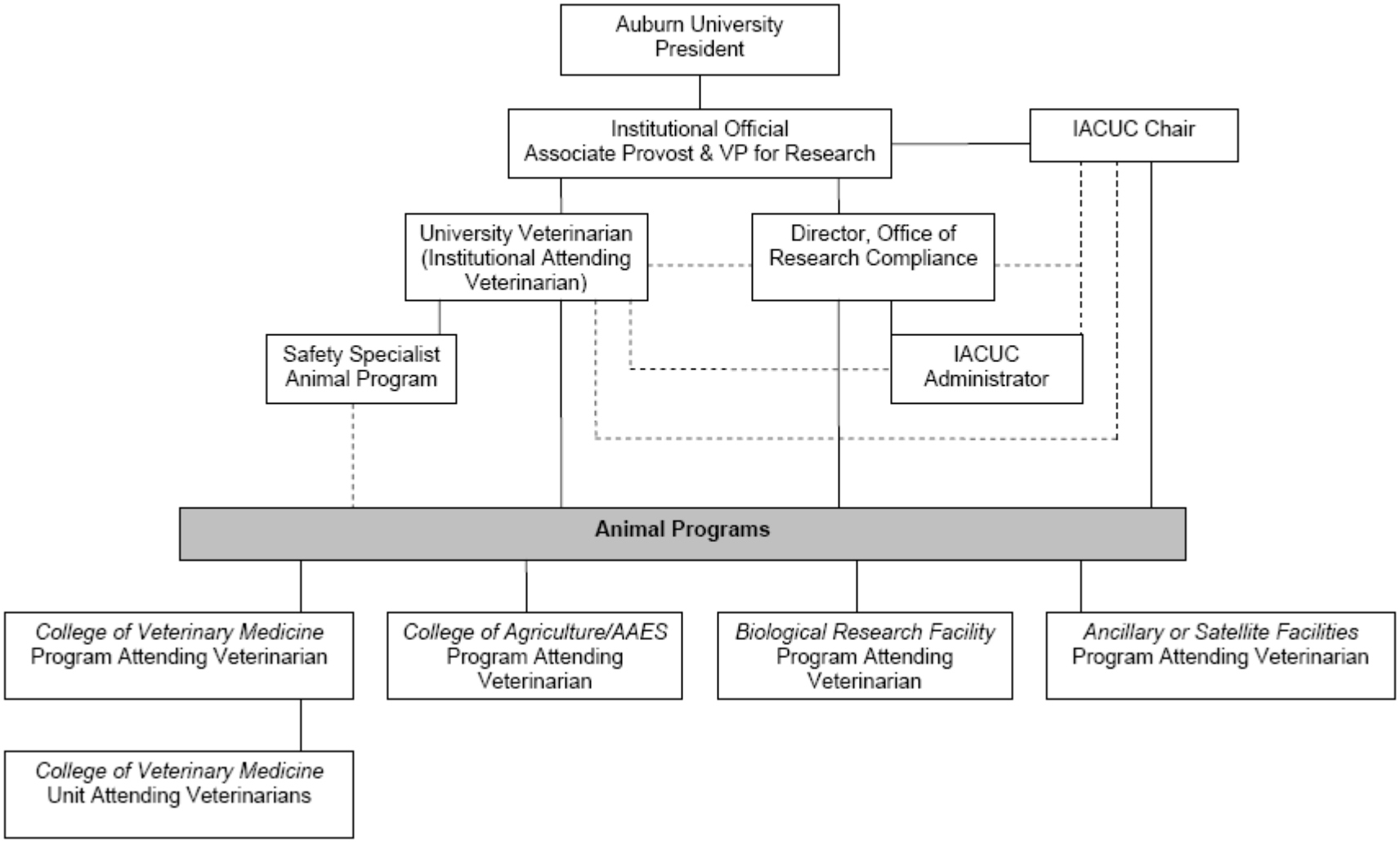
Guide for the Care and Use of Agricultural Animals in Research and Teaching: any warm-blooded vertebrate animal used in agricultural research or teaching for which the scientific objectives are to improve understanding of the animal's use in production agriculture and that may require a simulated or actual production agricultural setting consistent with the consideration of the animal's well-being.

The cited federal regulations/legislation and standards are the basis for this, the Auburn University *Policies for Care and Use of Live Vertebrate Animals.* The Auburn University (AU) Policy requires that the Institutional Animal Care and Use Committee (IACUC) oversee the use of all live vertebrate animals at AU, whether for research, instruction, demonstration, production, or maintenance purposes and whether housed in facilities at Auburn or elsewhere. The goal is to apply a single standard of high-quality animal care to the benefit of overall animal health and well-being.

1. ADMINISTRATIVE ORGANIZATION OF THE AUBURN UNIVERSITY ANIMAL CARE AND USE PROGRAM

The organizational structure of the AU Animal Care and Use Program is shown in Figure 1.

Auburn University Animal Care and Use Program
Administrative Organization



2. RESPONSIBLE PARTIES

2.1 UNIVERSITY VETERINARIAN

The University Veterinarian is the Institutional Attending Veterinarian (IAV) and has authority to ensure the provision of adequate veterinary care. Because of the diversity of animal species and the decentralized nature of the Animal Care and Use Program at Auburn University (AU), the duties of the IAV are shared and delegated to other veterinarians, but the assurance of compliance remains the responsibility of the IAV.

Responsibilities of the IAV are:

a) Maintain an understanding and appreciation for the roles of a land-grant university.
b) Provide leadership and supervision in the Office of the University Veterinarian (OUV)..
c) Administer the OUV budget.
d) Develop and implement the comprehensive plan for the OUV
e) Serve as a voting member on the Institutional Animal Care and Use Committee (IACUC).
f) Work independently and in conjunction with IACUC to assure that care and use of live vertebrate animals covered by IACUC-approved protocols are carried out to the highest programmatic standards and quality possible, and in full compliance with federal, state, and local laws and regulations, and University policies and procedures.
g) Review at least annually AU policies pertaining to care and use of live vertebrate animals and work in conjunction with IACUC and animal users to affect appropriate change and updating of policies.
h) Assist in the preparation and periodic updating of a manual containing policies and procedures, in accordance with AU policy, regarding activities of OUV and IACUC.
i) Provide and/or facilitate training programs and programmatic oversight/coordination of training programs for personnel and students regarding animal care and use.
j) Provide leadership in development and implementation of a comprehensive occupational health and safety program for the AU Animal Care and Use Program.

k) Assure that adequate veterinary personnel and services are available as needed.

l) Provide consultation to researchers, instructors and staff on matters relating to animal care and use, veterinary care, training, and occupational health and safety.

m) Aid investigators in the development of appropriate emergency procedures for dealing with accidents and incidents involving animals.

n) Independently investigate or assist the IACUC with the investigation of serious accidents or incidents involving animals to determine probable cause and/or to identify violation of the approved protocol, animal care and use guidelines, or acceptable safe practices. Upon completion of the investigation, a written report will be submitted to IACUC and the Office of the Vice President for Research (OVPR). If an emergency situation regarding animal welfare or personnel safety exists, the IAV may, with the concurrence of the IACUC Chair or three IACUC members, take necessary immediate action.

o) Assure that the institution meets reporting and/or application deadlines with regard to AU's compliance with federal laws and regulations: semi-annual IACUC reports to the OVPR, annual report from the OVPR to the National Institutes of Health (NIH) Office of Laboratory Animal Welfare (OLAW) pertaining to the AU's Assurance from NIH, annual animal usage report required by the United States Department of Agriculture (USDA), the Animal Welfare Assurance application submitted to NIH OLAW by OVPR at 5-year intervals, and registration application submitted to USDA at 3-year intervals.

p) Work with relevant Deans and central administrative officials to achieve or maintain accreditation by the Association for Assessment and Accreditation of Laboratory Animal Care International (AAALAC) for the College of Veterinary Medicine (CVM), Biological Research Facility, College of Agriculture, Alabama Agricultural Experiment Station (AAES) and other areas where interest in AAALAC accreditation exists.

q) Serve as a member of, or as a consultant for, building and renovation committees whenever the buildings house or will house live vertebrate animals.

r) Serve as a liaison between AU and outside regulatory agencies (e.g., OLAW, USDA) concerned with the care and use of animals.

s) Sign off on the closeout of an animal facility when the facility is no longer to be used.

t) Responsible for the oversight of all Investigational New Animal Drug (INAD) studies on which AU is listed as the animal drug sponsor, coordination of all correspondence between AU or AU researchers and the Food and Drug Administration (FDA), collect and maintain data on all INAD applications that involve an AU researcher whether or not AU is listed as the drug sponsor, and assist AU researchers with FDA policies and procedures for INAD studies.

2.2 PROGRAM ATTENDING VETERINARIAN

The Program Attending Veterinarian (PAV) designation describes veterinarians who provide oversight and compliance functions for specified programmatic facilities. PAV may delegate authority and responsibility to Unit Attending Veterinarians. AU PAVs are assigned as follows:

a) The College of Veterinary Medicine PAV
b) The College of Agriculture/AAES PAV
c) The Biological Research Facility PAV
d) The Ancillary or Satellite Facilities PAV

Specifically, responsibilities of the PAV include:

a) Manage laboratory animal resources
b) Provide preventative medical and veterinary care for animals used in research and teaching programs.
c) Work independently and in conjunction with IACUC to assure that the care and use of live vertebrate animals covered by IACUC-approved protocols are carried out to the highest programmatic standards and quality possible and in full compliance with federal, state, and local laws and regulations and the policies of AU.
d) Apply leadership and management skills essential to achieving or maintaining AAALAC accreditation status.
e) Assist in the preparation and periodic updating of AU policies pertaining to care and use of live vertebrate animals and work in conjunction with IACUC and animal users to affect appropriate change and updating of policies
f) Provide and/or facilitate training programs and programmatic oversight/coordination of training

programs for personnel and students regarding animal care and use.

g) Provide consultation to researchers, instructors, and staff on matters relating to animal care and use, veterinary care, training, and occupational safety and health.

h) Serve as the attending veterinarian for the designated program/facility.

2.3 UNIT ATTENDING VETERINARIAN

AU Unit Attending Veterinarians (UAV) are assigned as follows:

a) The College of Veterinary Medicine UAVs

b) Other UAVs as may be established by a program with approval from the IAV

Specifically, responsibilities of the UAV include:

a) Oversight of care of laboratory animal facilities associated with the assigned unit

b) Knowledge of compliance regulations and guidance related to animal care and use and ensure appropriate delivery of service to assure compliance of the unit

c) Work with the PAV and/or Clinical Veterinarians to provide the highest quality care for live vertebrate animals used in research, teaching, demonstration, and production activities for their assigned units

d) Prior to submission to the IACUC, will review and sign protocol submissions when the PI serves at the Project Veterinarian

2.4 CLINICAL VETERINARIAN

Clinical veterinary care is provided to all animals in AU facilities that are a part of the Animal Care and Use Program. Clinical Veterinarians (CVs) are associated with direct delivery of veterinary care to animals. The CV must demonstrate direct training and/or experience in the care and management of the species being attending and the procedures being conducted. Any Alabama licensed veterinarian employed by AU or private practitioner licensed by the State of Alabama may serve as a CV if approved by the IACUC.

2.5 PROJECT VETERINARIAN

Each approved protocol has an associated Project Veterinarian (PV). By signing the protocol submission form or modification form, the PV agrees to assume the following responsibilities:

a) Oversee the adequacy of all aspects of animal care and use for the approved protocol (i.e., preventative medicine; surveillance, diagnosis, treatment and control of disease, including zoonosis control; management of protocol-associated disease, disability, or other sequelae; anesthesia and analgesia; surgery and post-surgical care; assessment of animal well-being; euthanasia; hazard containment; husbandry and nutrition; and sanitation practices).

b) Provide advice and assistance to project personnel to ensure that the humane needs of protocol/project animals are met and are compatible with the requirements of the protocol.

Some of the responsibilities of the PV may be delegated to another individual with appropriate training e.g., a veterinary technician. When responsibility is delegated, a mechanism for direct and frequent communication must be established to ensure that timely and accurate information is conveyed to the PV concerning problems with animal health, behavior and well-being. The PV must have direct training and/or experience in the care and management of the species being attended.

A Principal Investigator who is a DVM may serve as the PV on his/her own research projects, contingent upon documentation of relevant experience in clinical veterinary medicine (e.g., with the animals species to be used) and availability of appropriate oversight. The attending veterinarians (IAV, PAV, or UAV) have the final authority on issues involving animal health and well-being.

2.6 DIRECTOR, OFFICE OF RESEARCH COMPLIANCE

Responsibilities of the Director, Office of Research Compliance (ORC) are:

a) Maintain an understanding and appreciation for the roles of a land-grant university.

b) Provide leadership and supervision in the ORC

c) Administer the ORC budget for IACUC Administration.

d) Develop and implement the comprehensive plan for ORC IACUC Administration.

e) Serve as a non-voting member on the IACUC.

f) Validate relevant content pertaining to animal-related activities in research proposals vs. corresponding IACUC-approved protocols.

g) Assist in the preparation and periodic updating of a manual containing policies and procedures, in accordance with AU policy, regarding activities of ORC and IACUC.

h) Provide and/or facilitate training programs and programmatic oversight/coordination of training programs for personnel and students regarding animal care and use.

i) Provide consultation to researchers, instructors and staff on matters relating to research compliance and IACUC administration.

j) Independently investigate or assist the IACUC with the investigation of serious accidents or incidents involving animals to determine probable cause and/or to identify violation of the approved protocol, animal care and use guidelines, or acceptable safe practices. Upon completion of the investigation, a written report will be submitted to IACUC and the OVPR.

k) Assure that the institution meets reporting and/or application deadlines with regard to AU's compliance with federal laws and regulations: semi-annual IACUC reports to the OVPR, annual report from the OVPR to the NIH OLAW pertaining to the AU's Assurance from NIH, annual animal usage report required by the USDA, the Animal Welfare Assurance application submitted to NIH OLAW by OVPR at 5-year intervals, and registration application submitted to USDA at 3-year intervals.

l) Work with relevant Deans and central administrative officials to achieve or maintain accreditation by AAALAC for the CVM, Biological Research Facility, College of Agriculture, AAES, and other areas where interest in AAALAC accreditation exists.

m) Serve as a liaison between the AU and outside regulatory agencies (e.g., OLAW, USDA) concerned with the care and use of animals.

The Director may delegate authority and/or tasks as deemed appropriate.

2.7 INSTITUTIONAL ANIMAL CARE AND USE COMMITTEE (IACUC) CHAIRPERSON

The responsibilities of the IACUC Chair shall include the following:

a) Coordinate and oversee all functions and activities of the IACUC.

b) Submit annual reports, through the Institutional Official, to OLAW.

c) Convene and conduct the semi-monthly IACUC meetings. In the event that the Chair is unable to convene a meeting, the Chair shall appoint an Interim Chair to do so.

d) Assist the Director of ORC with the assignment of specific animal use forms to IACUC Committee members.

e) Represent the IACUC in responses to faculty questions or inquiries concerning animal use.

f) Assist the Director of ORC with the assignment of IACUC members to facilities inspections.

g) Assist the Director of ORC, with the preparation of semi-annual reports.

h) In collaboration with the Director of ORC and the IAV, assure that use of all animals by AU complies with the Animal Welfare Act, the Public Health Service Policy, and other relevant and applicable animal use guides.

2.8 IACUC ADMINISTRATOR

The ORC, a unit of the OVPR, will provide administrative support and assistance to the IACUC. Responsibilities for ORC's IACUC Administrator shall be provided as outlined below.

2.8.1 Policy and Procedures Manual

The ORC shall, as directed by the IACUC, maintain and distribute the official IACUC Policies Manual.

2.8.2 Meetings/Minutes

The IACUC Administrator shall:

a) Schedule, attend, and take minutes for all IACUC meetings.

b) Prepare and distribute the meeting agenda for each scheduled meeting of the IACUC.

2.8.3 Inspection of Animal Facilities

The IACUC Administrator shall:

a) Prepare, under IACUC Chair's direction, the inspection assignment roster and forms.

b) Distribute and collect forms.

c) Type and assemble draft and final reports.

d) Follow-up for correction/modification.

2.8.4 Protocols/Protocol Modification Requests

The IACUC Administrator shall:

a) Receive, log, and review (preliminary) all protocols and protocol modification requests.

b) Distribute protocols to members of the IACUC prior to the next scheduled meeting.

c) Provide advice and assistance to investigators in the preparation of protocols and modification requests.

d) Sign protocols and protocol modification requests approved by the IACUC under the direction of the IACUC Chair (or Chair's designated representative).

2.8.5 Correspondence

The IACUC Administrator shall be responsible, under the direction of the IACUC Chair (or Chair's authorized representative), for preparing appropriate correspondence for the following actions:

a) Protocol approvals.

b) Protocol denials.

c) Requests for protocol clarification/revisions.

d) Protocol expiration notices.

e) Protocol annual review notices.

f) Semi-annual review reports.

g) Certification forms for occupational safety and health and personnel training.

h) Miscellaneous.

2.8.6 Records

The IACUC Administrator shall maintain the following records:

a) Current and terminated protocol files, including all related significant correspondence and/or findings.

b) Minutes of the IACUC meetings.

c) Semi-annual review reports.

d) Annual reports to USDA and OLAW.

e) Certification forms for personnel training.

2.8.7 Support for the Director of ORC

The Director of ORC works directly with the IACUC on all matters involving IACUC Administration and compliance with animal care and use policies and regulations. Further, the ORC shall have available publications that will assist the investigator to perform the project in accordance with applicable federal and state regulations and the policy of AU.

2.9 PRINCIPAL INVESTIGATOR

The Principal Investigator (PI) has primary responsibility for the following:

a) Prepare and submit accurate and complete protocol review forms (Animal Subjects Review Form or Animal Production/Maintenance Form) for approval by the IACUC of all research, teaching, demonstration, production, and maintenance activities involving live vertebrate animals carried out by AU personnel using AU facilities and/or equipment or by visiting investigators conducted in AU facilities.

b) Ensure that all projects are carried out in accordance with the approved protocol.

c) Promptly advise, using a Protocol Modification Request Form, the IACUC of any changes necessary to conduct the project and receiving approval prior to implementing such changes.

d) Ensure that all individuals performing animal procedures are qualified to perform their particular animal-related duties through training and/or experience. The provision of training must be documented on a training certification form. Such documentation must be submitted to and approved by the ORC prior to final approval of protocols and other submissions to the IACUC. The ORC and OUV will provide training materials and guidance.

e) Ensure that all individuals engaged in activities involving an approved project are fully informed of relevant health and safety issues and, where appropriate, receive training to minimize or eliminate such hazards.

f) Abide by all federal, state, local and AU regulations and policies concerning the use of animals.

g) Allow veterinary oversight/assistance to all project animals showing signs of pain or distress.

h) Promptly report to the Department of Risk Management and Safety in accordance with AU policies and procedures, any personal injuries or accidents that occur during the course of the project. For guidance on reportable incidents, accidents, or injuries, see Section 13 of this Manual.

i) Provide annual and final reports (using the approved form) to ORC on the project status and responding to inquiries about project status.

All outstanding documentation (e.g. annual review, final report, personnel training certification) pertaining to any protocol in the PI's name must be received and approved by the ORC prior to final IACUC approval of new animal use forms or modifications to approved protocols.

Any Auburn University faculty member or unit director/supervisor (e.g., Hybridoma Facility, Swine Research and Education Complex) is eligible, with the concurrence of the appropriate Dean or Department Head/Chair, to serve as the PI. For Resident and Student projects, a faculty member must be designated to serve as the PI. This faculty member will have ultimate responsibility for the project and will serve as advisor to the Resident/Student. The faculty member's advisory capacity should be appropriately reflected on the protocol submission form.

2.10 DEPARTMENT HEADS/CHAIRPERSONS, RESEARCH INSTITUTE AND CENTER DIRECTORS

The chief administrator of each Department, Research Institute, Center or Unit:

a) Is responsible for overseeing faculty, staff, and students working with animals in his/her overall area of jurisdiction. It should be emphasized that this responsibility is in no way altered by the duties of the IACUC and the ORC.

b) Must ensure that prior to animal procurement (order, capture, transfer, or use), each PI using animals for any activity files the appropriate protocol review form(s) and receives IACUC approval for the activity.

c) Is mutually responsible, with the PI, for informing the IACUC of deviations from the approved protocol and reporting accidents or incidents involving such animals to the persons identified in this Manual.

d) Should ensure that all faculty, staff, and students have received instruction regarding the use, care, and handling of animals to be used in the approved activity.

e) Must determine that appropriate facilities and equipment are available for the approved activity involving animals.

f) Should ensure that all faculty, staff, and students provide appropriate notification and file the appropriate forms for any incident/accident that occurs while participating in the approved activity.

2.11 DEAN

The Dean of each unit involved in activities requiring the use of vertebrate animals is responsible for ensuring that all departments have access to the resources necessary to ensure that the activity can be conducted in accordance with the approved protocol. Further, the Dean shall ensure that resources are available to protect the health and safety of both animals used in approved protocols and the faculty, staff, and students engaged in the activity.

2.12 INSTITUTIONAL OFFICIAL

The Institutional Official (IO) has the authority to insure that AU complies with applicable animal care and use policies, guidelines and regulations. The IO reviews semiannual reports (submitted by the IACUC) assessing AU's Animal Care and Use Program and facilities. The IO ensures that stated deficiencies are addressed according to the schedule for correction of deficiencies developed by the IACUC. If the institution is unable to meet the schedule, the IACUC, through the IO, must inform Animal and Plant Health Inspection Service (APHIS) officials within fifteen working days of the lapsed deadline. If the activity is federally funded, the federal sponsor also must be informed. The IO is the individual who signs, and has the authority to sign, all commitments on behalf of AU that the requirements of the PHS *Policy on Humane Care and Use of Animals* will be met in accordance with the AU's Assurance. The IO is further responsible for signing all institutional reports required by federal regulatory agencies including, but not limited to, the OLAW and the APHIS. The Associate Provost and Vice President for Research is AU's designated IO.

3 AUBURN UNIVERSITY INSTITUTIONAL ANIMAL CARE AND USE COMMITTEE (IACUC) PROCEDURES AND GUIDELINES

3.1. IACUC MEMBERSHIP

The IACUC consists of at least fifteen members. The following shall serve continuing appointments: the Director of the Office of Research Compliance (ORC) - non-voting; University Veterinarian as the Institutional Attending Veterinarian (IAV); the Director of the Division of Laboratory Animal Health; and the Director responsible for Outlying Units, Alabama Agricultural Experiment Station. The following shall serve three-year rotating appointments: at least eight faculty members representative of animal-user disciplines (scientists, animal-users); at least one faculty member representing non-animal-user disciplines; and at least two members from the community who have no other current affiliation with Auburn University (AU) and whose immediate families are not affiliated with AU. Rotating membership vacancies shall be filled for compliance with the regulations and, to the extent possible, with similarly qualified individuals. In addition to the qualifications noted above, one committee member must be a veterinarian. The chair of the committee shall be a faculty member with at least one year of experience as a member of the AU IACUC. The President of AU appoints committee members and the committee chair.

Membership of AU's IACUC meets the compositional requirements and recommendations set forth in the Public Health Service (PHS) Policy, the Animal Welfare Act (AWA), and the *Guide for the Care and Use of Agricultural Animals in Research and Teaching*, namely at least one: DVM, with training or experience in laboratory animal science and medicine who has direct or delegated program responsibility for activities involving animals; practicing scientist experienced in research involving animals; scientist with experience in agricultural teaching and/or research using agricultural animals; animal, dairy or poultry scientist with training and experience in the management of agricultural animals; veterinarian with training and experience in agricultural animal medicine who is licensed to practice (or eligible for licensure); individual whose primary concerns are in a nonscientific area; individual not affiliated with the institution and not a laboratory animal user, who represents general community interests in the proper care and treatment of animals.

3.2. *MEETING SCHEDULE*

Meetings of IACUC are generally held on the first and third Thursdays of each month. Regularly scheduled meetings that fall on a University holiday shall not ordinarily be rescheduled. The IACUC Chair may convene additional meetings as needed.

3.3. ANIMALS COVERED BY IACUC PROTOCOLS

The AU Policy requires that the use of all live vertebrate animals for research, instruction, demonstration, production, or maintenance purposes by AU, whether the animals are located in facilities at Auburn or elsewhere, or by visiting investigators in AU facilities be approved by the IACUC prior to animal procurement (order, capture, transfer, and use) Investigators/instructors who wish to use live vertebrate animals in one or more of the activities listed above are required to submit an animal use form for IACUC review. The timing of submission to the IACUC may depend on the funding agency (e.g., if IACUC approval is required prior to scientific peer review) or on the investigator's/ instructor's preference; notably, approval by the IACUC is a prerequisite not only for animal usage but also for establishment of an account for a funded project involving animal usage. The scope of work for funded projects will be reviewed and all activities involving live animal usage must be included in and consistent with approved IACUC Protocol(s).To avoid delay in receipt of an account, investigators may prefer to submit an animal use form to the IACUC office well in advance of knowing the outcome of a proposal relative to funding.

Two animal use forms are available for submission. The choice of which form to use is determined as follows:

a) To submit a protocol describing research, teaching, or demonstration activities one should submit the "Animal Subjects Review Form (ASRF)." There is a place on this form to indicate which type of activity is being described (e.g., research, teaching).
b) To submit a protocol describing only the production and/or maintenance of animals (e.g., those animals being produced and/or maintained for the purposes of being used in various research or teaching activities), one should submit the form entitled "Animal Production/Maintenance Facility Standard Operating Procedures (APMF)."

It is understood that some protocols may involve more than one category of activity. For example, a protocol may involve birds being captured and released in the field for the purpose of data collection for a research project. However, this protocol may involve the simultaneous activity of teaching a class of students the technique of field capture and handling of birds. On such protocols it is necessary and permissible to check the activity as both research and teaching. Furthermore, if animals are being produced and/or maintained solely for a particular research or teaching project, then one may choose to submit the ASRF and check the activity as both production/maintenance and research or production/maintenance and teaching, whichever is applicable.

3.4. REVIEW AND ACTION PERTAINING TO PROPOSED OR ONGOING ACTIVITIES RELATED TO CARE AND USE OF ANIMALS

3.4.1. Submission and Processing of ASRF/APMF (Protocol)

a) Forms are available to users on the ORC IACUC Administration website (https://fp.auburn.edu/vpr/compliance/animalresources/?Forms).

b) Protocols can be mailed or hand-delivered to the ORC, (115 Ramsay Hall Basement). The Principal Investigator (PI) should contact the ORC for the number of copies needed. This information is also available on the ORC IACUC website (https://fp.auburn.edu/vpr/compliance/animalresources/?IACUC_Submission). Additional information is provided on the website to assist PI's with protocol submissions.

c) Protocols received at least seven days prior to a scheduled meeting date (i.e., by 11:30 A.M. on Thursday of the week prior to a scheduled Thursday afternoon meeting) will be placed on the agenda. Protocols received after the aforementioned deadline may be deferred to the following meeting.

d) A primary and a secondary reviewer of each protocol are assigned in the ORC. Committee members are not assigned as reviewers of protocols on which they or a member of their academic department or unit are listed as the PI, co-investigator, faculty advisor, or departmental chairperson; on which the reviewer is a veterinarian associated with the protocol; or if the reviewer otherwise has a conflict of interest as determine by the IACUC.

e) Meeting agendas include review of minutes of prior meeting, list of protocols to be reviewed, and other business (reports, announcements, etc.).

f) Committee members receive minutes, agendas and protocols two to seven days in advance of an IACUC meeting.

3.4.2. Criteria for Granting IACUC Approval of a Protocol

Criteria are presented below. Additional information may be found in the AU IACUC Policy Statements in the appendix.

• Activities	Must be in accordance with United States Department of Agriculture (USDA) Regulations/PHS Policy
• Pain/Distress	Must avoid/minimize discomfort, distress, and/or pain. If pain/distress is likely to result, appropriate sedation, analgesia or anesthesia should be used unless scientifically justified with special approval by the IACUC. Project veterinarian must be involved in planning. Use of paralytics without anesthesia is prohibited. Animals with chronic/severe unrelievable pain will be euthanized.
• Humane Endpoints	Discomfort to animals must be limited to that which is unavoidable for the conduct of scientifically valuable research, and that unrelieved pain and distress will only continue for the duration necessary to accomplish the scientific objectives. Humane endpoint criteria should be addressed on the IACUC protocol form when it is anticipated that an animal will endure painful or distressful conditions.
• Surgery	Must meet requirements for aseptic surgery and pre/postoperative care. Cannot use one animal for more than one major operative procedure from which it will recover unless scientifically justified with special approval by the IACUC.
• Euthanasia	Euthanasia method must be consistent with the most current American Veterinary Medical Association (AVMA) recommendations.
• Housing/Health	Living conditions for animals must be consistent with standards of housing, feeding and care directed by veterinarian or scientist with appropriate expertise.
• Alternatives	There must be considered alternatives to painful procedures; also must document consideration of alternatives if animals experience or may be expected to experience pain or suffering.
• Rationale and Methods	Must provide written narrative of methods/sources including the years searched and keywords searched.

- Duplication — Must provide assurance that activities do not unnecessarily duplicate previous efforts.
- Qualifications — Personnel must be appropriately qualified
- Hazardous Agents — Use of hazardous agents in animals may require approval of the appropriate institutional committee. The Department of Risk Management and Safety (844-4870) may be contacted for specific information.
- Deviations from Requirements — Must be justified for scientific reasons, in writing.

3.4.3. Assessment of Scientific Design in Animal Care and Use Protocols

Review and evaluation of study design may be necessary to assess one or more of the following: (Note: the following are presented as examples; additional IACUC justifications for scientific review also may be employed.)

a) Is the study, as designed, likely to yield results that justify the use of animals?
b) Could a change in study design reduce the numbers of animals that are used? For example, could animals be utilized as their own controls prior to introducing the study variable(s)? Alternatively, is the sample size sufficient to answer the question being addressed in the research?
c) Could the investigator employ alternative procedures or alter study design in a manner that would result in a reduction in pain or distress or decrease the frequency of painful or stressful procedures?

3.4.4. Procedures for IACUC Meetings Convened for Consideration of Protocols

a) A quorum of voting members is required to convene a meeting and approve protocols.
b) Members should review all protocols before the meeting and be prepared to discuss each protocol and vote (if not excused in accordance with provisions and stipulations found elsewhere in this manual). Anticipated absences should be reported as soon as possible to the ORC.

c) Members of the IACUC who are listed as either PI or co-investigator on a protocol being discussed by the IACUC may excuse themselves from the room during the reviewers' presentation. The PI on a protocol under consideration must be absent from the room when the discussion and vote are conducted on the protocol.

d) The Primary Reviewer presents the protocol to the committee. If the Primary Reviewer is absent, the Secondary Reviewer assumes this responsibility. Whenever appropriate, the reviewers may contact the PI prior to the meeting for additional information or clarification.

e) After the primary reviewer presents a protocol, a motion is then made for approval, to require minor clarifications/revisions (to secure approval), for deferral, or for rejection of the protocol. If the motion is seconded, the Chair then asks for questions or discussion. Following the discussion, a verbal vote is taken. For an action to be approved, the motion must receive a majority vote of the total number of committee members present and eligible to vote.

f) A committee member can request a written or roll call vote instead of a verbal vote.

g) If the protocol is approved as submitted, the IACUC Chair or designee will sign the original form, and ORC will assign a protocol review number (PRN).

h) If the protocol requires minor clarifications/ revisions(to secure approval), then a PRN will not be assigned until such clarifications/revisions have been submitted in writing by the PI and approved by the IACUC Chair or his/her designee.

i) A protocol may be deferred if the IACUC deems that the PI must address major clarifications/revisions and the protocol, therefore, must be resubmitted for review by the IACUC. Examples of major changes include but are not limited to conduct of invasive procedures, change in species or number of animals, and change~~s~~ in experimental design. A more complete listing of significant changes is included in the Policy Statements located in the appendix.

j) Members who are designated as the PI or Co-PI cannot offer a motion or vote on their own protocols or protocols on which they are the Project Veterinarian, project personnel, or otherwise have a conflict of interest as determined by the IACUC.

k) A PI may request and receive approval from the IACUC Chair in advance of the relevant IACUC meeting to present his/her protocol to the Committee prior to the protocol being presented by the Primary or Secondary Reviewer.

3.4.5. Reporting of Committee's Action to PI

The ORC's IACUC administrator will provide written communication to the PI regarding the committee's action on his/her protocol.

3.4.6. Designated-Member Review

A designated-member review may be conducted under the following circumstances: (1) when the PI submits a written request/justification to the IACUC Chair which details and documents an extenuating circumstance e.g., impending sponsor deadline or sponsor required changes in numbers of animals, addition of procedures or methodologies, or changes in the amounts or frequency of collecting blood, tissues, urine or other specimens wherein the deadline date for IACUC approval precedes the next regularly scheduled IACUC meeting); and/or (2) when the PI indicates on the Animal Subjects Review Form that animal usage in his/her teaching, research or demonstration protocol will result in no more than minor pain or distress to the animals (i.e., USDA pain/distress category C: studies that DO NOT involve surgery, induction of painful or stressful disease conditions, or pain or distress in excess of that associated with routine injections or blood collection).

In circumstances presented under (1) or (2) above, the decision to conduct a review will be made by the IACUC Chair (or his/her designee) after consultation with the Director of ORC. All IACUC members are provided a copy or summary of the protocol. Members are given a specified period of time (e.g., 2-3 working days) to request the protocol undergo review by the full IACUC. If review by the full IACUC is not requested by the specified time, then the protocol may be assigned for designated review by 1-3 members of the IACUC. The individual(s) assigned to the designated review committee are appointed by the IACUC Chair (including a subcommittee chair designated at the time of the appointment) who are without conflict of interest and do not hold an appointment in the departmental/unit affiliation(s) of the PI or co-investigators. Procedures for consideration of protocols include the relevant items presented in Section 3. The options for subcommittee recommendations are approval, require minor clarifications/revisions (to

secure approval), or review at a convened meeting of the IACUC.

The recommendations of the subcommittee are shared electronically or by other means with the other members of the IACUC. If any member of the IACUC requests that a protocol be reviewed at a convened meeting of the IACUC, then the protocol is deferred until such time that a meeting can be convened (relevant to circumstances under (1) above) or the next regularly scheduled IACUC meeting (relevant to circumstances under (2) above).

The commitment to conducting designated-member reviews referenced under (1) above is set forth as a continuing IACUC policy. Whether or not reviews are conducted for circumstances presented in (2) above is left to the discretion of each IACUC, per majority vote of all IACUC members.

3.4.7. Duration of Approval

A protocol will be approved for up to three years. Continuation of the project/activities beyond three years requires submittal of a new ASRF or APMF for review by the IACUC. Notifications of impending expiration are sent to PIs and the relevant unit head at least 30 days in advance of the expiration date. Once a protocol has expired, a notification of expiration is sent to the PI; co-investigator(s); lead graduate student/resident; Project Veterinarian (PV); and relevant unit head; and copies of the notification are filed in the ORC.

Protocols for project continuation beyond three (3) years are reviewed by the Full Committee at a convened meeting of the IACUC unless the protocol meets the requirements for Designated Member Review as described previously. Regardless of the method, review of the protocol will include all criteria and procedures required for a new project.

3.4.8. Requests for Modifications

All modifications to an approved protocol requested by the PI must be approved by the IACUC Chair prior to being implemented. A Protocol Modification Form can be obtained on-line from the aforementioned website. At the Chair's discretion, the proposed modification may be referred to IACUC for full-committee review or to a subcommittee of IACUC as a designated-member review provided the modification meets the requirements of Section 3.4.6. A copy of the approved modification request must be sent to the PI;

co-investigator(s); lead graduate student/resident; PV; and relevant unit head; and be on file in the ORC.

In accordance with Office of Laboratory Animal Welfare (OLAW) and USDA, the IACUC classifies change of personnel on a protocol, excluding the PI, as minor. Following guidance from both OLAW and USDA, minor personnel modifications may be reviewed administratively by the ORC, provided that all such personnel are appropriately identified, adequately trained and qualified, enrolled in the occupational health and safety program, and meet other criteria as required by the IACUC.

3.4.9. Annual Review of Approved Protocols

a) Annual Reviews of protocols are conducted during October and November of each year. The ORC will send a reminder to PI's at least four weeks prior to the due date The Annual Review Report form also includes the information needed for the annual USDA report.
b) All changes to the approved protocol must be reported, and, if significant, will be reviewed by the IACUC at a convened meeting. Minor personnel changes will be reviewed administratively as described in 3.4.8.
c) Failure to submit an annual review report may result in closure of the protocol and activities being carried out.

3.4.10. Distribution of Approved Protocols

Upon final approval, a PRN will be assigned to the protocol and the final approved version with all required signatures will be provided electronically via emailed to the PI. The ORC which maintains all official files of the IACUC will retain the original. In addition, the following will be copied on the email to the PI: co-investigator(s); lead graduate student/resident; associated veterinarians; relevant unit head; the IAV, and other appropriate personnel.

3.4.11. Records

Official records of the IACUC shall be maintained by the ORC in accordance with federal and state regulations. Retention time shall be not less than three years past project end date. The State of Alabama and the federal regulatory agencies prescribe record retention periods. Records will be kept for the longer (federal or state) period of time before being destroyed or discarded.

3.4.12. Actions and Sanctions for Failure to Follow an Approved Protocol

As with any policy of AU, sanctions shall apply for non-compliance with this animal care and use policy. The appropriate Dean (or designated Associate Dean), Director, or Vice President shall utilize the standard disciplinary procedures set forth as a condition of each person's employment with AU. Other sanctions may be imposed in accordance with sponsor requirements and obligations or other applicable AU policies.

3.4.13. Appeal

If a PI disagrees with the revisions required by the IACUC to obtain approval of a protocol, or with the disapproval of a protocol, the investigator may, with the concurrence of the appropriate Dean/Department Head or Chair, submit a written appeal to the IACUC stating the reasons for objecting to the required changes and/or proposing an alternative resolution. The PI may also request a meeting with the IACUC to discuss the differences of opinion and resolve them.

If no satisfactory resolution is reached, the PI may submit a written appeal to the Associate Provost and Vice President for Research (VPR) requesting assistance. The VPR will attempt to mediate a solution to the situation. However, neither the VPR nor any other administrative official can override a disapproval by IACUC.

4 POST-APPROVAL MONITORING OF IACUC PROTOCOLS FOR COMPLIANCE

4.1 OBJECTIVE

The primary objective of post-approval monitoring (PAM) is to assure the institution that investigators and others involved in conducting and supporting research do not stray or drift from approved procedures and accepted practices.

4.2 RESPONSIBLE PARTIES FOR PAM

Individuals involved with PAM include the Principal Investigator, veterinarians (project and attending), research support staff, husbandry staff, and IACUC members. The process of monitoring includes observations by facility staff, walk-through of facilities, and review of charts/animal records.

4.3 EXAMPLES OF PROTOCOL DRIFT AND NONCOMPLIANCE

a) Unapproved increases in number of animals used

b) Change of species without authorization by IACUC

c) Use of animals in non-approved sites

d) Lack of adherence to humane endpoints

e) Method of euthanasia

f) Routes of administration of medications or test substances

g) Frequency of sample collection

h) Outdated drugs

i) Improper housing

j) Training of new hires

5. INSPECTION OF ANIMAL FACILITIES

5.1 ANIMAL FACILITY (DEFINITION)

An animal facility is defined as any place in which animals subject to approval of the Auburn University (AU) Institutional Animal Care and Use Committee (IACUC) are housed for greater than twelve consecutive hours exclusive of facilities located outside the state of Alabama.

5.2 INSPECTION SUBCOMMITTEE APPOINTMENT

The Chair of the IACUC or his/her designee will appoint an appropriate subcommittee to inspect assigned facilities. A member of each subcommittee will be responsible for contacting the individual responsible for the facility to be inspected and set a time for the inspection. No member of the IACUC shall inspect a facility for which they are directly responsible. All inspections must be completed within four weeks after assignment and written reports forwarded to the Director of the Office of Research Compliance (ORC) or the Chair of IACUC no later than two weeks after an inspection is completed.

5.3 FACILITIES INSPECTION REPORTING

The Director of ORC and/or the Chair of IACUC will prepare a report summarizing the inspection of facilities (from subcommittee reports) and will have it signed by the IACUC before submitting it to the Vice President for Research (VPR). Copies of the report will be maintained in the ORC.

5.4 DISSEMINATION OF FINDINGS

The Chair of the IACUC will notify the individual responsible for a facility regarding the findings of an inspection. If deficiencies are identified, a timetable to initiate corrective action will be included with the notification. Except for housekeeping items which should be corrected immediately, the target date for correction of minor deficiencies will usually be six months from date of citation or by the next IACUC facility inspection, whichever is sooner. Significant deficiencies (defined as those that are or may be a threat to animal health or safety) will require immediate corrective action. The urgency of the corrective action for a significant deficiency should be cited in the timetable to initiate the action. The responsible individual must respond in writing to the ORC within thirty days to define action taken to correct significant deficiencies. The IACUC Chair is responsible for assessing the corrective actions for significant deficiencies, and the next inspection team is responsible for assessing the corrective actions for minor deficiencies. Visual observation of corrective actions taken on significant deficiencies will be reported at the next regularly scheduled inspection.

5.5 RESPONSE TO FINDINGS

If a written response is not received within thirty days from the person responsible for a facility identified to have a significant deficiency or significant deficiencies are not corrected by the specified target date, a report detailing the alleged violation(s) will be sent to the VPR.

6. REVIEW AND EVALUATION OF ANIMAL CARE AND USE PROGRAMS

A subcommittee of the Institutional Animal Care and Use Committee (IACUC) consisting of at least 5 members (Chair of the IACUC, University Veterinarian, Director of the Office of Research Compliance; Associate Director of the Division of Laboratory Animal Health; Director, Outlying Units, Alabama Agricultural Experiment Station (AAES); community representative; and/or other IACUC members as appointed by the IACUC Chair) will conduct a review of the animal care and use program every six months. A report summarizing the review will be reviewed and approved by the IACUC committee. When approved, the report will be submitted to the Institutional Official.

7. SUBMISSION OF REPORTS BY IACUC

7.1 REPORTS SUBMITTED TO VICE PRESIDENT FOR RESEARCH (INSTITUTIONAL OFFICIAL)

The aforementioned reports (inspections of facilities that house animals, program reviews) will be submitted to the Institutional Official every six months.

7.2 REPORTING TO OLAW

At least every twelve (12) months, the Institutional Animal Care and Use Committee (IACUC), through the Vice President for Research, will report in writing to Office of Laboratory Animal Welfare (OLAW):

a) Any change in the status of the institution (e.g., receipt of AAALAC accreditation or revocation of AAALAC accreditation).
b) Any change in the description of the institution's program for animal care and use as described in the assurance.
c) Any changes in the IACUC membership.
d) If no changes are reported in the IACUC membership, the institution's program for animal care and use as described in the assurance, or in the accreditation status of the institution, a letter will be submitted to OLAW stating there are no changes.
e) The dates the IACUC conducted semiannual program evaluations and facility inspections and the dates the reports were submitted to the Institutional Official.
f) Any departures from the guide and state reasons for departure; and
g) Any minority views of the IACUC.

A new assurance must be prepared and submitted to OLAW every five years.

8. MECHANISM FOR RECEIPT AND REVIEW OF CONCERNS INVOLVING CARE AND USE OF ANIMALS AT THE INSTITUTION AS REGISTERED VIA PUBLIC COMPLAINTS AND BY EMPLOYEES OR STUDENTS

8.1 POLICY

The Office of Research Compliance (ORC), University Veterinarian, and/or the Institutional Animal Care and Use Committee (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 or IACUC Policy), or complaints regarding the care received by animals housed in Auburn University (AU) laboratory animal, wild animal or agricultural facilities.

8.2 STEPS IN THE PROCESS

a) Concerns should first be addressed to the individual(s) or unit at whom/which the complaint is directed. If the concern cannot be handled directly and an emergency situation exists, the University Veterinarian should be contacted immediately (334/844-8979, 334/844-4622 The University Veterinarian, or a designee, will take any necessary immediate action. If the concern is not an emergency, is not adequately addressed, and/or if there is fear of retribution, a formal complaint should be filed (see below).

b) A formal complaint is initiated by contacting one of the following individuals:

Director, ORC 334/844-5966

The Chair of the IACUC (Name and phone number may be obtained by calling ORC 334/844-5978)

University Veterinarian 334/844-8979

c) Information to be provided in the formal complaint shall include:

Complainant's name

Individual(s) or unit the complaint is against.

Description of the event or charges, including applicable dates of observations and documentation to substantiate the charges

Signature of complainant

d) A signed complaint must be submitted to an individual listed under b (above) for a formal review to be conducted.

While hearsay complaints cannot be formally filed, individuals who have serious concerns based on hearsay evidence can call any of the individuals listed in b (above). The individual contacted, or a designee, may follow-up on concerns by means other than the formal complaint process such as review of protocols, discussions with employees, or unannounced laboratory inspections. The process may lead to

the filing of a formal complaint.

The signed formal complaint will be submitted to the Chair of the IACUC as soon as possible. A formal complaint should remain confidential to the extent possible to protect all concerned. The Chair, within three days of receiving the formal complaint, will appoint a subcommittee composed of three IACUC committee members to investigate the concern. In an initial inquiry phase, the subcommittee will focus on information gathering and fact-finding to confirm the concern as warranting a formal investigation and evaluation of all relevant facts versus a concern that may be based on mistaken allegations. At the inquiry phase, the individuals at whom the concern/complaint is directed will be informed of the nature of the concern/complaint and of the investigative procedures to be followed and given an opportunity to explain their side of the issue. As much documentation as is reasonably needed to support or refute concerns involving care and use of animals will be collected. Such information may include, but not necessarily be limited to, interviews of all parties involved, inspecting facilities, collection of pertinent documents, on-site evaluation of animals, and detailed review of procedures with responsible personnel.

The subcommittee will prepare a report for the IACUC. The IACUC will immediately review the concern or complaint and will determine what action will be taken (majority quorum vote and minority opinions will be recorded). The Chair of the IACUC will immediately notify the individual(s) at whom the concern/complaint is directed, the relevant facility director, department/unit head and dean/director, the Director of ORC, University Veterinarian and the complainant. The Director of ORC will inform the Office of the Vice-President for Research (OVPR) and others as directed by the OVPR.

Reports will be filed in the OVPR and in the ORC for documentation and investigation of the incident. No employee, student, IACUC member or laboratory personnel shall be discriminated against or be subject to any reprisal for reporting perceived noncompliance with any of the regulations or policies pertaining to animal care and treatment.

The IACUC, through the Institutional Official, shall file a report with appropriate federal or state agencies as dictated by the actions taken by IACUC and by applicable compliance standards.

9. SUSPENSION OF ANIMAL ACTIVITIES

The Institutional Animal Care and Use Committee (IACUC) may suspend any previously approved activity if it determines that the activity is not being conducted in accordance with an approved protocol, applicable provisions of the Animal Welfare Act, the *Guide for Care and Use of Laboratory Animals*, Public Health Service (PHS) Policy, and/or AU's Animal Welfare Assurance with the National Institutes of Health. The investigative process will coincide with the procedure described in Section 7 of this manual, "MECHANISM FOR RECEIPT AND REVIEW OF CONCERNS INVOLVING CARE AND USE OF ANIMALS AS REGISTERED BY PUBLIC COMPLAINTS AND BY EMPLOYEES OR STUDENTS." 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. A suspension will not occur prior to consultation with the responsible individual (that person in charge of the activity). Such consultation will allow the responsible individual to be informed of the cause for concern so that an opportunity is afforded to explain their side of the issue. 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 a full explanation to the PHS Office of Laboratory Animal Welfare (OLAW), the Animal and Plant Health Inspection Service (APHIS), United States Department of Agriculture (USDA), and/or any other Federal agency funding that activity.

10. VETERINARY CARE AND HEALTH SURVEILLANCE

Auburn University (AU) will ensure the provision of adequate veterinary care for animals used for research, teaching, and/or demonstration purposes. Such a program is to include animals held at the university but not yet used for such purposes (e.g., animals assigned to production/maintenance protocols). AU's program is guided by the following: *The Guide for the Care and Use of Laboratory Animals*, The PHS Policy for the Care and Use of Laboratory Animals, The Animal Welfare Act, and *The Guide for the Care and Use of Agricultural Animals in Research and Teaching*. Specifically, these documents outline the requirements of an adequate veterinary care program. The AU veterinary care program affords the following: veterinary medical care provided as necessary by qualified veterinarians and support personnel, facilities, and equipment (to include the availability of emergency care twenty-four hours a day including weekends and holidays); the daily observation of all animals guidance in the

appropriate care and use of the animals; and appropriate methods for disease surveillance and diagnosis.

Subclinical microbial infections may occur in animals that have profound, adverse effects on research. This may be particularly true for research involving rodents. For this reason, health surveillance programs and other strategies for keeping animals free of specific pathogens should be assessed. A health surveillance program is in place to address such concerns for colonies of rodents.

The Project Veterinarian (PV) signs a certification statement on the Animal Subjects Review Form (ASRF) to indicate that the provision of adequate veterinary care will be met. In addition, this certification statement addresses an assurance that any personal interest the PV may have in the protocol will not conflict with his/her responsibility for the provision of adequate veterinary care. PV may utilize, when needed, the assistance of the College of Veterinary Medicine (CVM) and its staff veterinarians (many board certified) in the large and small animal clinics. The CVM also has significant diagnostic resources. These resources are available and can be arranged through the admissions desks of the clinics.

11. TRAINING POLICY

The Office of Research Compliance (ORC) and Office of the University Veterinarian (OUV) will provide or coordinate training for faculty, staff, students and others (e.g., visiting faculty) engaged in the care and use of animals for research, teaching and/or demonstration purposes. Training will include review of institutional policies and procedures governing all activities involving live vertebrate animals, as well as species-specific technical training in animal husbandry, handling and related areas of animal care and use in research and education.

The Auburn University (AU) animal care and use training program is provided in accordance with recommendations in *The Guide for the Care and Use of Laboratory Animals*, The PHS Policy for the Care and Use of Laboratory Animals, The Animal Welfare Act, and *The Guide for the Care and Use of Agricultural Animals in Research and Teaching*. Specific elements of the training program are defined in the context of and tailored to institutional needs at AU, and in light of federal policies governing animal use, all of which are likely to be dynamic.

The AU training program addresses:

a) Origins and evolution of institutional animal care and use programs and the regulations, policies and laws governing their operation.
b) Organization of the AU Animal Care and Use Program.
c) The role of the Institutional Animal Care and Use Committee (IACUC) and procedures necessary for completion of the Animal Subjects Review Form (ASRF).
d) The “three R’s” - Replacement, Reduction, and Refinement - as defined by Russell and Burch (*The Principles of Humane Experimental Technique*, 1959) and their application to the design of activities involving animals.
e) Requirements and procedures for identification and evaluation of alternatives to animal use.
f) Procedures for reporting animal welfare concerns and for responding to such reports.
g) Occupational health and safety issues.
h) Other such topics and issues as may be essential to satisfy regulations, policy or law governing animal use.

In addition, species-specific training addresses:

a) Basic biology, handling, husbandry and care of live vertebrate animals used in teaching, research and demonstration.
b) Basic techniques for intradermal, intraperitoneal, intramuscular and intravenous administration of drugs and for collection of blood and body fluids.
c) Methods of tranquilization, analgesia, anesthesia, and euthanasia.
d) Principles and applications of surgery and guidelines for planning invasive procedures involving animals.

All Principal animal users (i.e., PIs and/or course instructors; hereinafter referred to as Principals), as well as staff and students with assigned responsibilities for animal care and use in the context of research, teaching or demonstration activities, will receive and/or document training appropriate to their qualifications, experience and the specific circumstances of animal use proposed by them, in the case of Principals, or assigned to them, in the case of staff and students. Principals must be members of the AU faculty and/or a unit director with primary oversight responsibility for design and management of research, teaching and/or demonstration activities involving animals. Principals are identified through ASRF review

by the IACUC. Each principal, as part of completing the ASRF, agrees (by signature) to a certification statement assuring that all individuals performing animal procedures as a component of activities described in the ASRF either are, or will be, prepared to perform their particular animal-related duties through documentable training and/or experience. To facilitate their own training and training of staff and students, Principals will be referred to the ORC IACUC Administration website, where information regarding training opportunities is posted.

Individuals to be engaged in activities involving animals must be apprised of relevant occupational health and safety risks before being allowed to work with the particular species. In addition, individuals must have the appropriate animal care and use training before being allowed to execute their particular duties without supervision or assistance. The Principal will have his/her staff sign a training certification form to assure and document the appropriate level of training or experience is in place. The Principal will keep a copy of this form and must submit a copy of the training certification form to the ORC prior to protocol approval.

12. OCCUPATIONAL HEALTH AND SAFETY PROGRAM

An Occupational Health and Safety (OHS) program for employees and students involved in animal care and use is an important component of the institution's overall animal care and use program. Topics addressed include risk assessment; personnel training; standard operating procedures; facilities, medical evaluation, and preventive medicine. Health and safety needs are addressed in the context of existing environmental health and safety programs at Auburn University (AU), e.g., blood-borne pathogens, chemical hygiene, respiratory protection, handling/disposal of hazardous waste materials, radiological safety, biological use authorization, and containment and handling requirements for biological agents.

Animal protocol approval by the Institutional Animal Care and Use Committee (IACUC) is contingent upon enrollment in the AU OHS Program and documentation of relevant core, specific and procedural-specific training for all personnel involved in care and maintenance and/or conduct of animal related procedures pertinent to the protocol.

The OHS program is facilitated and monitored as a continuing activity of the Office of Research Compliance, Department of Risk Management and Safety (DRMS), Alabama Occupational Medicine, and

the IACUC. The IACUC, for example, conducts a programmatic review of the institution's animal care and use program at 6-month intervals, and the OHS program is always a topic for review and evaluation in these reviews. Guidelines, recommendations, and requirements for the AU OHS program are derived or influenced by relevant resource materials: *Guide for the Care and Use of Laboratory Animals* (National Research Council, 1996 or current version); *Guide for the Care and Use of Agricultural Animals in Research and Teaching* (Federation of Animal Science Societies, 2010); *Occupational Health and Safety in the Care and Use of Research Animals* (National Research Council, 1997); and *Biosafety in Microbiological and Biomedical Laboratories* (Centers for Disease Control and Prevention and National Institutes of Health, 1999). A description of our OHS program must be included in the AU Assurance of Compliance that is required by the Public Health Service.

The effectiveness of AU's OHS program ultimately relies on effective interactions among several institutional functions or activities: e.g., research and teaching program directors; the IACUC; providers of veterinary care; environmental health and safety program; DRMS; medical services; facility-maintenance personnel and administrative support. Essential to effectiveness, of course, is a continuing performance of safe practices by all personnel with exposure to animals or animal tissues.

13. INCIDENT OR ACCIDENT REPORTING

Employees or students shall promptly inform their supervisors of all on-the-job injuries, disabilities, or illness, regardless of their severity. The employee or student must then report to the On the Job Injury OJI program claim manager within 72 hours of the incident. Instructions for reporting claims through the OJI program can be found at: http://www.auburn.edu/administration/rms/pdf/oji-contact.pdf.

If the employee or student is unable to report the incident, the supervisor will be responsible for reporting to the OJI Claims Manager. Department of Risk Management and Safety (DRMS) will review all injuries and follow-up with an incident investigation if necessary. Records are available to the Institutional Animal Care and Use Committee (IACUC), University Attending Veterinarian, and the Office of Research Compliance (ORC).

In addition to reporting to the OJI Claims Manager as described above, all accidents or incidents judged to be serious by the Principal Investigator (PI), director or instructor/course director shall be reported

promptly to DRMS; and to the chief administrator (e.g., Chair, Head, Director, etc.) of the reporting unit. DRMS will notify the IACUC through the ORC of any serious incidents. Subsequently, and promptly, the ORC shall inform the Office of the Vice President for Research (OVPR). Deans and Associate Deans will be notified by the chief administrator of the reporting unit. Communication of a serious incident or accident to the President, Provost, or Public Relations is the responsibility of the OVPR. Examples of serious accidents or incidents include injuries involving hospitalization or extended recovery periods; loss of consciousness; fractures; severe hemorrhages; nerve, muscle or tendon damage; and exposure to toxic chemicals.

Investigation of serious accidents or incidents will be conducted by the IACUC and by DRMS. The investigation by IACUC will focus on determining probable cause and identifying any violation of an approved animal use protocol, animal care and use guidelines, or acceptable safety practices. Upon completing the investigation, the Chair of the IACUC will prepare a written report of findings for review and possible action by IACUC and the OVPR. The incident investigation by DRMS will focus on cause. DRMS's investigation report will be forwarded to the relevant Dean and/or chief administrator of the reporting unit.

AUBURN UNIVERSITY

POLICIES FOR CARE AND USE OF LIVE VERTEBRATE ANIMALS

APPENDIX

AU IACUC POLICY STATEMENTS

Revised September 1, 2010

AU IACUC Policy
Significant Changes to Approved Protocols

Background: Changes in vertebrate animal use in research and teaching are inevitable, but federal regulations and AU university policy require review and approval by the IACUC of significant changes in any activity involving the use of animals. Such changes must not be implemented prior to IACUC review and approval. The Principal Investigator is responsible for informing the IACUC of any significant changes by filing a Protocol Modification Form. Protocol Modification Forms will be scheduled for review at a scheduled IACUC meeting. In some cases, the IACUC Chair may judge that changes are sufficiently different from the original protocol to warrant that a new protocol be submitted.

Policy: Significant changes include but are not limited to changes that:

- result in increased animal distress or pain or increase in the invasiveness of the procedures
- result in changes in veterinary care, such as anesthetic agent(s), use or withholding of analgesics, and methods of euthanasia
- result in using a different species
- result in an increase in animal numbers
- result in a change in the overall aims or objectives of the study
- result in a switch from non-survival to survival surgery
- result in performing additional procedures not described in the approved IACUC protocol
- result in a change in hazardous substance use
- result in allowing other investigators to use your animals on their protocols, or using animals approved for use on one of your protocols for use on another of your IACUC-approved protocols.

AU IACUC Policy
Multiple Major Survival Surgery on a Single Animal

Major surgery penetrates and exposes a body cavity, involves orthopedic surgery, or produces significant impairment of physical or physiological function. Multiple major survival surgical procedures on a single animal are discouraged, but may be approved by the IACUC if scientifically justified by the investigator. It is preferable to use more animals, if possible, to reduce the amount of pain/distress individual animals may experience. Multiple major survival surgeries can be justified if they are related components of a research or teaching project; conserve scarce animal resources, or if needed for veterinary care reasons. Cost-savings alone is not an adequate reason for performing multiple major survival surgeries. A major survival operative procedure must not be performed a second time on an animal in a separate IACUC proposal. Animals surviving a major operative procedure must be identified (written documentation) to prevent their use in a second major survival operative procedure. Each animal-use protocol proposing multiple survival surgeries will be considered and reviewed by the IACUC on a case-by-case basis.

AU IACUC Policy
Physical Restraint

Physical restraint is the use of manual or mechanical means to limit some or all of an animal's normal movement for the purpose of examination, collection of samples, drug administration, therapy, or experimental manipulation. Animals are restrained for brief periods, usually minutes, in most research applications.

Animals can be physically restrained briefly either manually or with restraint devices. Restraint devices should be suitable in size, design, and operation to minimize discomfort or injury to the animal. Many dogs and other animals can be trained, through use of positive reinforcement, to present limbs or remain immobile for brief procedures.

Prolonged restraint should be avoided unless it is essential for achieving research objectives and is approved by the IACUC. Less-restrictive systems that do not limit an animal's ability to make normal postural adjustments, such as stanchions for farm animals, should be used when compatible with protocol objectives. When restraint devices are used, they should be specifically designed to accomplish research goals that are impossible or impractical to accomplish by other means or to prevent injury to animals or personnel.

The following are important guidelines for restraint:

- Restraint devices are not to be considered normal methods of housing.
- Restraint devices should not be used simply as a convenience in handling or managing animals.
- The period of restraint should be the minimum required to accomplish the research objectives.
- Animals to be placed in restraint devices should be given training to adapt to the equipment and personnel.
- Provision should be made for observation of the animal at appropriate intervals, as determined by the IACUC.
- Veterinary care should be provided if lesions or illnesses associated with restraint are observed. The presence of lesions, illness, or severe behavioral change often necessitates temporary or permanent removal of the animal from restraint.

AU IACUC Policy
Food or Water Restriction

For the purposes of this policy, food or water deprivation is defined as any restriction in access to food or water. The rationale may be to establish food or water as reinforcers, to study caloric restriction, or to prevent obesity and protect the health of the animals. Restricted access to food is neither unusual nor undesirable. Nevertheless, restrictions must be conducted with care and tailored to the feeding patterns and nutritional requirements of the strain and species as well as the requirements of the study.

The delivery of food or fluids is commonly used to maintain extended sequences of behavior in studies with a wide range of animals. When restriction is used to establish food or water as reinforcers, a common rule of thumb has historically been to maintain body weight at 80% of free-feeding weight or to deprive of water for 12 to 23 hours. Such an all-encompassing definition of food restriction is inappropriate and cannot be applied to all species. Rodents are nearly continuous feeders and will continue to gain weight through their life, so an absolute "80%" target can never be identified. Moreover, appropriate body weights will depend on the age and strain of the animal. On the other hand, an "80%" target would be too restrictive and may jeopardize the health of other species. Restricted access to food or water must be tailored to the species under study. When beginning work with a new species, consult with the project veterinarian as well as the literature when designing and describing protocols for fluid or food restriction.

Food and water consumption are interdependent, but species differ in their circadian or other patterns of drinking and their response to food restriction. Unless specific protocols require exemption, allowing most laboratory animal species to feed at least once per day is consistent with standards of humane care and is required for species covered by USDA regulations. Constant access to water typically is provided under food control regimens, but requirements of the species and the scientific protocols may require different patterns of access. Conversely, water-deprived animals often have non-restricted access to food, but investigators should be aware that most food consumption occurs only when water is available. Water should be available long enough to maintain sufficient food intake.

Food-restricted animals typically are weighed frequently, usually 5-7 times per week. Species whose

weights change slowly or for which sedatives or anesthetics must be used to determine body weights may be weighed less frequently. If so, other tactics to ensure appropriate caloric and nutritional intake must be specified. Where possible, highly desirable foods (fatty or sweet "treats") may be used as reinforcers and this could reduce the degree of food or water restriction imposed, but even under these conditions, some restriction enhances their reinforcing efficacy. In all cases, records should be kept of measures taken to ensure appropriate nutrition or hydration.

Animals tolerate food restriction physiologically better than water restriction, so food restriction should be used if possible. Fluid reinforcers often have advantages, however, such as in procedures that must control the position of the subjects' head or limit jaw movements. When water, sweet drinks, or fruit-flavored drinks are used as a reinforcer, access to water outside the experimental session needs to be controlled. Determining parameters of water restriction, including especially the period(s) of access during the day that do not produce dehydration or excessive weight loss requires careful consideration and sensitivity to the species. When this is done, animals need not be at risk. Careful observation of behavior, regular clinical monitoring of the animal's health, and records of measures taken are critical for ensuring successful application of fluid control procedures.

AU IACUC Policy
Weight Loss

Immature animals: maximum weight loss is a deviation of 15% from recognized growth curves or age-matched control animals.

All protocols involving excessive weight loss will be evaluated on a case-by-case basis.

Background: Weight losses may occur in research animals in association with a variety of experimental regimens including studies where feed and essential nutrients are withheld, such as studies of nutritional deficiencies, toxicology or cancer. Weight loss also occurs in association with many spontaneous diseases and is a prime indicator of declining clinical condition. Moderate food restriction and weight loss, rather than being detrimental, has been shown to promote health and extend the life of laboratory rodents and other species. The IACUC has accepted weight losses of up to 20% as a general humane limit. However, some studies may result in weight losses of greater than 20% that can be scientifically justified.

Policy: The upper limit of acceptable weight loss in animals on experimental regimens shall generally be 20%. Written scientific justification must be provided to the IACUC for approval of a greater than 20% weight loss. In studies where weight loss is expected to occur, monitoring must be done by investigative staff trained and experienced in recognizing clinical signs of illness and distress in study animals. Weights must also be taken at least weekly under such circumstances and be readily available for review by the veterinary staff and the IACUC. In their protocol submissions, investigators must address situations where weight loss will exceed limits that are being proposed, and remedial measures that will be taken. Veterinary staff may intervene when such remedial measures prove ineffective or to address weight losses that occur in excess of 20% of pre-study body weight in any research animal, or when other limits approved by the IACUC have been reached or exceeded. Such intervention may include euthanasia. Exceptions to this policy will be allowed only if there is a veterinary determination that weight losses exceeding approved limits are not endangering animal health and well-being and a specific waiver is obtained from the IACUC.

AU IACUC Policy
Humane Endpoints

Discomfort to animals must be limited to that which is unavoidable for the conduct of scientifically valuable research, and that unrelieved pain and distress will only continue for the duration necessary to accomplish the scientific objectives.

The criteria used for intervention in research studies to prevent unnecessary pain and distress are called "humane endpoints" because they describe when it is time to either:

- Euthanize an animal to prevent suffering;
- Discontinue a painful procedure; or
- Remove an animal from a study

Common examples of endpoint criteria include a limit on weight loss as a percentage of body weight; anorexia for an extended time; sudden pain or distress that cannot be controlled with analgesics, sedatives or tranquilizers; impaired ambulation (unable to reach food or water easily, inability to remain upright); difficulty breathing; central nervous system disturbances; or severe medical conditions that cannot be controlled with appropriate therapy (e.g., severe systemic infections, kidney or liver failure, heart disease).

More specific criteria are often used for certain types of studies. For example, endpoint criteria used for rodent cancer studies involving the growth of tumors under the skin often include maximum tumor volumes or tumor weight as a percentage of body weight, skin ulceration over the tumor, interference with normal gait or movement, and interference with normal feeding and drinking behaviors.

The use of death as an endpoint in animal experiments is strongly discouraged. Investigators are encouraged to administer euthanasia in death-end-point experiments prior to the actual death of the animal unless a compelling case can be made that experimental validity would be irrevocably compromised. If experimental death itself is the required endpoint, the investigator must first receive approval to conduct such studies by providing strong scientific justification to the IACUC. Inconvenience

or increased costs alone are not justifiable reasons.

Federal law authorizes veterinary staff to euthanize animals in states of unauthorized, uncontrolled pain or distress. The PI should work closely with the Project Veterinarian in cases where uncontrolled pain or distress may develop.

Humane endpoint criteria should be addressed on the IACUC protocol form when it is anticipated that an animal will endure painful or distressful conditions.

AU IACUC Policy
Carbon Dioxide Euthanasia

Carbon dioxide (CO_2), when used properly, is classified by the 2000 Report of the American Veterinary Medical Association Panel on Euthanasia as a safe method of euthanasia for many small laboratory animals. CO_2 has many advantages including: (1) rapid depressant, analgesic, and anesthetic effects; (2) easy availability in compressed gas cylinders; and (3) inexpensive, nonflammable, non-explosive, and poses minimal hazard to personnel when used with properly designed equipment.

Although CO_2 is generally considered an acceptable form of euthanasia for small laboratory animals when properly administered, its acceptability is predicated on the following:

It is not desirable to prefill (pre-charge) the euthanasia chamber with CO_2, since high concentrations (>70%) can cause nasal irritation, discomfort, and excitability. Rather, the animals should first be placed into the chamber, followed by the addition of CO_2 at a low flow rate (e.g., a rate sufficient to displace approximately 20% of the chamber volume per minute) to complete the process. Rapid gas flows should be avoided since excessive noises ("winds") can develop and induce excitement and distress in the animals. Gas flow should be maintained for at least 1 minute after apparent clinical death (e.g., at least one minute after the animal has quit breathing). It is important to confirm that an animal is dead after removing it from the chamber. Unintended recovery must be obviated by the use of appropriate CO_2 concentrations and exposure times or by other means.

According to the 2000 Report of the AVMA Panel on Euthanasia, "Compressed CO_2 gas in cylinders is the only recommended source of carbon dioxide because the inflow to the chamber can be regulated precisely. CO_2 generated by other methods such as from dry ice, fire extinguishers, or chemical means (e.g., antacids) is unacceptable." Only one species at a time should be placed into a chamber, and the chamber must not be overcrowded. When placed into the chamber, all animals must have floor space. Euthanasia should always be done in cohorts (live animals should not be placed in the chamber with dead animals). Chambers should be kept clean to minimize odors that might distress animals prior to euthanasia. Animals must not be euthanized in animal housing rooms, except under special circumstances such as during quarantine for infectious disease agents.

Neonates: Since the time period for euthanasia is substantially prolonged in neonatal animals due to their inherent resistance to hypoxia, CO_2 narcosis must be followed by a physical means of euthanasia after the animals lose consciousness to ensure irreversibility of the procedure (e.g., decapitation, cervical dislocation, or thoracotomy).

AU IACUC Policy
Monitoring of Biological Materials

The injection of transplantable tumors, hybridomas, cultured cell lines, or other biological materials into rodents can pose a health risk to animals and personnel. These biological materials have been a source of mouse hepatitis virus, mousepox, and other significant disease agents at research facilities. Moreover, rodent pathogens can be carried and propagated by non-rodent (e.g., human) cell lines when these cell lines have been propagated in rodents or rodent biological materials.

Biological materials should be evaluated for rodent pathogenic microorganisms by polymerase chain reaction (PCR) or mouse antibody production (MAP) tests. The major disadvantage of MAP testing is the 6 to 8 weeks required to obtain results. The Research Animal Diagnostic and Investigative Laboratory (RADIL) at the University of Missouri offers a PCR-based alternative to MAP testing, the Infectious Microbe PCR Amplification Test or IMPACT, which is a panel of PCR assays that detects murine pathogens. Typically, IMPACT testing requires 2 vials of each sample with a minimum of 1×10^7 cells/ vial and a turnaround time of 7-10 business days.

If your protocol involves the injection of transplantable tumors, hybridomas, cultured cell lines, or other biological materials into rodents, please provide the Division of Laboratory Animal Health (DLAH) the name of the cell line(s), source, test, and results of tests performed to evaluate the presence of rodent pathogenic microorganisms. If the cells are not of rodent origin and have not been tested for the presence of rodent pathogens, please confirm that the materials (cells) to be used have not been propagated in rodents or rodent biological materials. Alternatively, please contact DLAH to make arrangements to have biological specimens tested before use. Approval for the use of biological materials in animals housed at the Division of Laboratory Animal Health facilities will only be given after the Director of DLAH has assessed the test results to determine their adequacy.

AU IACUC Policy
Use of Adjuvants

There are a number of adjuvants of interest to the IACUC. Of principal interest is the nature of the adjuvant, especially if it is Freund's Complete Adjuvant (FCA) injected with the antigen to augment the antibody response. FCA commonly causes adverse side effects. Negative effects routinely seen include granuloma formation, tissue necrosis and sloughing, abscessation, and fever. Other deleterious systemic effects, such as polyarthritis, have been reported. FCA is considered a human biohazard, such that accidental self-inoculation or splashing in the eye has been shown to cause painful sequelae not readily amenable to treatment, as well as sensitization to tuberculin. Adverse reactions to FCA vary according to the anatomical site in which it is placed, the volume of antigen used, and the purity of the antigen. Due to the occurrence of adverse reactions, discontinuance of the use of FCA has been advocated in favor of alternative adjuvants such as Ribi's and TitreMax.

Policy:

Less inflammatory alternatives to Freund's adjuvant are available and should be considered. Ribi Adjuvant System® and TiterMax® are commonly cited as appropriate alternatives. Non-inflammatory adsorptive adjuvants such as alum and aluminum hydroxide gel may also be considered. The use of FCA as an adjuvant is permitted if the investigator provides scientific justification for its use, rather than less irritating adjuvants.

In regard to the use of FCA in rabbits for polyclonal antibody production, the following guidelines apply:

If FCA is to be used, it should only be used for the first (priming) antigenic dose. Using two or more doses of FCA is rarely warranted. Subsequent doses with antigen should utilize Freund's Incomplete Adjuvant (FIA) or another appropriate adjuvant.

The recommended injection protocol for FCA and FIA in rabbit immunizations are:*

IM 0.5 cc (in two 0.25 aliquots)

SQ 1.0 cc (in four 0.25 aliquots)

ID 0.5 cc (in five 0.1 aliquots)

*Please note that the alternative adjuvants such as the Ribi Adjuvant System® provide specific guidance regarding injection sites and volumes in the various species.

A total volume of 1.5 cc of the FCA or FIA/antigen mixture could be injected in a single immunization by injecting 1.0 cc SQ and 0.5 cc either IM or ID (intradermal). Injecting too large a volume in one site is a major cause of rabbit problems so it is important to follow the dosing aliquots given above. On the IACUC form you must describe the route of administration, the volume injected per site, and the number of sites injected.

Footpad or intravenous injections of FCA are not recommended.

With the injection of any material, the inoculum must be free of extraneous microbial contamination. Millipore filtration of the antigen before mixing with adjuvant is recommended when possible.

Injection sites should be cleaned and free from debris and contamination. This is probably the major cause of abscess formation in animals, and it is why some investigators have little problems with FCA and why others have big problems.

The frequency of boosters needs to be addressed in the animal use protocol. Two to three weeks is generally considered the minimum time period between the initial and subsequent immunizations. Booster immunizations are sometimes delayed if significant inflammatory reactions are still present from the initial immunization.

An *in vitro* method, such as culturing hybridomas in hollow fiber bioreactors or semipermeable plastic bags, is an alternative to *in vivo* ascites production. Assurances must be provided to the IACUC that use of such alternatives has been tried and not been successful before approval for ascites production in animals will be granted.

Typically, monoclonal antibody secreting tumor cells (hybridomas) are injected into the peritoneal cavity of mice 10-14 days after a "priming" dose of pristane has been given. The severity of the reaction and the amount of ascitic fluid produced are related to the doses of the adjuvant (pristane) and hybridoma cells administered. The volume of pristane should not exceed 0.2 ml in mice unless specifically justified. Cell suspensions must be in sterile physiologic solutions and the inoculations must be aseptically performed. Hybridoma cells are usually given at doses averaging 1,000,000 cells (concentrations of 100,000 cells or less generally elicit fewer ascitic tumors, produce less ascitic fluid, and are far less likely to be effective).

The increased volume and pressure resulting from the accumulations of neoplastic cells and ascitic fluid can impair breathing and cause asphyxia if monitoring and removal of fluid are inadequate. Excessive quantities of fluid in the peritoneal cavity may be painful and shock may occur from the sudden decrease in fluid volume following harvest. The number of times such withdrawals should be performed should accordingly be minimized. It is customary to limit withdrawals to a total of two taps, unless the investigator provides evidence that the hybridoma is slow growing and additional taps can be accomplished in a humane fashion.

Monitoring of inoculated animals must be done by investigative staff at least three times a week for the first week after inoculation of the hybridoma and daily thereafter. Monitoring personnel must be trained and experienced in recognizing clinical signs associated with problems.

Ascitic fluid must be aseptically withdrawn before abdominal distension becomes great enough to interfere with normal activity. In no case should such distension be allowed to increase more than 20% beyond the normal diameter of the abdomen. While use of an anesthetic is preferred, manual restraint may be used, particularly in cases where anesthetic risk is increased. The smallest needle that allows for good flow

should be used; needles larger than 18 gauge should not be used. The number of taps may not exceed a single survival tap and a second terminal tap, unless justified in the protocol and specifically approved by the IACUC. Following survival taps, animals must be monitored and treated for shock if indicated. The animal must be immediately treated or euthanized if found to be in respiratory distress or shock due to what is determined to be an excessive accumulation of ascitic fluid.

Animals should be euthanized appropriately before the final tap or at any point if there are signs of uncorrectable debilitation, pain or suffering. Signs can include hunched posture, rough hair coat, reduced food consumption, emaciation, inactivity, difficulty in ambulation, or respiratory problems.

AU IACUC Policy
Auburn University College of Veterinary Medicine Animal Stabilization Policy Pertaining to Newly Acquired Animals on IACUC Protocols

Newly received animals must be provided a period of acclimatization before their use, consistent with the recommendations in 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*. Animals new to a protocol, but received as an internal transfer, may not require a stabilization period. All animals utilized on IACUC-approved protocols must be provided an appropriate stabilization period after arrival before they may be used on one's protocol. The unit attending veterinarian will provide input regarding what an appropriate stabilization period may be, taking into consideration the animal species, the proposed use of the animal, and the facts concerning the origin and transportation of the animal(s). This policy does not preclude the conduct of non-invasive procedures during the stabilization period (e.g., routine blood collections) but does preclude the conduct of invasive procedures and procedures requiring sedation or anesthesia.

AU IACUC Policy
Medical Records Policy Pertaining to Animals Used on IACUC Protocols

Health records are meant to convey necessary information to all people involved in an animal's care. Every facility is expected to have a system of health records sufficiently comprehensive to demonstrate the delivery of adequate health care. It is expected there will be an established health records system consistent with professional standards that meets and probably exceeds, the minimum requirements set forth in this policy. For all facilities, health records must be current, legible, and include, at a minimum, the following information:

- Identity of the animal
- Descriptions of any illness or injury and the resolution of any noted problem.
- Dates, details, and results (if appropriate) of all medically-related observations, examinations, tests, and other such procedures.
- Dates and other details of all treatments, including the name, dose, route, frequency, and duration of treatment with medications (a "check-off" system to record when treatment is given each day may be beneficial).

Examples of procedures that should be adequately documented in health records include, but are not limited to, vaccinations, fecal examinations, radiographs, surgeries, medical treatments, and necropsies. Routine husbandry and preventive medical procedures (e.g., vaccinations and dewormings) performed on a group of animals may be recorded on herd-health-type records. As long as all required information is readily available, records may be kept in any convenient format.

Health records must be readily available for review as requested (e.g., by an attending veterinarian, federal regulators, members of the IACUC, and AAALAC site visitors).

An animal's health record must be held for at least 3 years after the animal's disposition (e.g., adoption, sale or death). When an animal is transferred to another party or location, a copy of the animal's health record must be transferred with the animal.