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APPLICATION TO USE VERTEBRATE ANIMALS

For Office Use Only

Three-year Approval Period: _____

Date Received _____

Application # _____

Approval Date _____

Institutional Animal Care and Use Committee (IACUC)
Eastern Michigan University
Refer to Instructions to Complete This Form, This application may be typed, printed legibly or computer generated.

○ New Application
○ Renewal Application
(Previous Application/Approval # _____.)

Principal Investigator/Course Director
(Must be a Faculty Member) _____.

Academic Rank/Title _____.

Department/Unit Administering Accounts _____.

Campus Address _____. Telephone # _____.

FAX # _____. E-mail address: _____.

Names and Telephone #'s of Other Contact Person(s):

Project/Course Title(s): (Enter Same Titles as Grant Applications)

(1) Title _____.
Funding Agency _____ Currently Funded? Yes* ○ No** ○.

(2) Title _____.
Funding Agency _____ Currently Funded? Yes* ○ No** ○.

(3) Title _____.
Funding Agency _____ Currently Funded? Yes* ○ No** ○.

* List the reviewing agencies again in Question 19 and attach a copy of the award notice. (If departmental funds are used, the signature of the Department Head or designate is required in Question 20).
** Forward a copy of the award notice to IACUC, Office of the Associate Provost when the grant is funded.

SUBMIT COMPLETED APPLICATIONS TO: INSTITUTIONAL ANIMAL CARE AND USE COMMITTEE (IACUC), OFFICE OF RESEARCH DEVELOPMENT, STARKWEATHER HALL, 2ND FLOOR. TELEPHONE: 487-3090. ALLOW 4-6 WEEKS FOR APPROVAL.

APPLICATION TO USE VERTEBRATE ANIMALS

DESCRIPTION OF PROJECT (QUESTIONS 1 - 5)

1. Which of the following describes the type of animal use proposed in this application? (Check all that apply.)

- ☐ Basic Research
- ☐ Applied Research
- ☐ Field Research
- ☐ Student Research
- ☐ Classroom Instruction or Training
- ☐ Testing (toxicology, etc.)
- ☐ Service (breeding, core facility, surveillance)
- ☐ Other (Specify _____)

2. Using language understandable t**o a non-scientist** explain the long-term or overall **scientific goals** of the proposed work.

3. Using language understandable **to a non-scientist,** describe the **specific objectives** of the proposed work.

4. Using language understandable **to a non-scientist,** describe the ways the proposed work will **benefit** human or animal health and welfare, serve the **advancement** of knowledge, and the **good** of society.

The IACUC Office is required to prepare a list of experimental or instructional procedures performed on animals to comply with USDA and NIH guidelines.

5. From the list below, check all experimental or instructional procedures that will be performed on the animals requested in this application. All procedures checked below require response in question 6. (Check all that apply.)

- ☐ Addiction or addiction withdrawal
- ☐ Amputation
- ☐ Anesthesia
- ☐ Antibody production
- ☐ Ascites production
- ☐ Behavior modification/operant conditioning
- ☐ Biopsy
- ☐ Blood collection
- ☐ Breeding
- ☐ Burn
- ☐ Cannulation
- ☐ Catheterization
- ☐ Capture of wildlife
- ☐ Cardiac puncture
- ☐ Dental procedure
- ☐ Environmental manipulation
- ☐ Euthanasia
- ☐ Food/water manipulation
- ☐ Gavage
- ☐ Immunization, experimental
- ☐ Immunosuppression
- ☐ Implant
- ☐ Injury/trauma
- ☐ Injection
- ☐ Innoculation, experimental
- ☐ Irradiation
- ☐ Irritation, experimental
- ☐ Lavage
- ☐ Myocardial infarction
- ☐ Noxious stimulus
- ☐ Obesity, experimental
- ☐ Observation only (no manipulations)
- ☐ Organ/system failure or dysfunction, experimentally induced
- ☐ Parabiosis
- ☐ Paralysis, experimentally induced
- ☐ Peritoneal lavage
- ☐ Prey, animal
- ☐ Radiography
- ☐ Restraint
- ☐ Sensory dysfunction
- ☐ Sepsis induction
- ☐ Stress
- ☐ Stroke
- ☐ Stun
- ☐ Surgical procedure, non-recovery
- ☐ Surgical procedure, recovery
- ☐ Toxicity test
- ☐ Transplantation
- ☐ Tumor growth, experimentally induced
- ☐ Other [ ].

JUDICIOUS USE OF ANIMALS, SPECIES AND HUMANE USE CATEGORIES

The regulations of the Federal Animal Welfare Act require that animal use be reported annually according to the categories listed in Question 6 below.

6. For each species, estimate the total number of animals that will be used in each Humane Use Category over the next 3 years. A general description of the Humane Use Categories is provided below. Examples of procedures in each Humane Use Category can be found in the instructions. In Questions 9c, 9d, and 9e, you will be asked to justify the use of animals, the species selected and the number of animals requested.

	HUMANE USE CATEGORY* (Estimate the number of animals in each category that will be used in the next 3 years.)			
SPECIES (Common Name)	A	B	C**	TOTAL REQUESTED***

* Humane Use Categories

A ☐ Animals will not experience pain, discomfort, or distress for which pain relieving drugs would customarily be given in human medicine or standard veterinary practice.

B ☐ Animals might experience pain, discomfort or distress but appropriate anesthetics, analgesics, or tranquilizers will be used to prevent these effects.

C ☐ Animals might experience pain, discomfort or distress for which anesthetics, analgesics, or tranquilizers would customarily be given but these drugs cannot be used because their use would adversely affect the experimental results or interpretation.

** **If there are animals in Category C, attach to this application on a separate page a description of the procedures producing pain, discomfort or distress in animals and the reasons anesthetics, analgesics or tranquilizers cannot be used. This page will accompany the University's annual report to the United States Department of Agriculture and will be available to the public under the Federal Freedom of Information Act.**

*** For each species, the Total Requested = sum of columns A + B + C.

ANESTHETIC, ANALGESIC, TRANQUILIZING OR NEUROMUSCULAR BLOCKING AGENT(S) AND POST-ANESTHETIC RECOVERY (QUESTIONS 7a - 7l)

7a. Will anesthetic, analgesic, tranquilizing, or neuromuscular blocking agents be used? Check all that apply.

- ☐ Anesthetic agents — Answer Question 7b.
- ☐ Analgesic agents — Answer Question 7b.
- ☐ Tranquilizing agents — Answer Question 7b.
- ☐ Neuromuscular blocking agents — Answer Question 7b.
- ☐ None — Skip ahead to Question 8a.

7b. Complete the table below for all anesthetic, analgesic, tranquilizing, or neuromuscular blocking agents that will be administered to animals. Do not include agents used only for euthanasia. Complete this table even if the information may be provided elsewhere in this form. If more than four agents will be used, duplicate the table to accommodate additional entries.

Anesthetic, analgesic, tranquilizing or neuromuscular blocking agent(s) to be used.

	Agent 1	Agent 2	Agent 3	Agent 4
Name of agent				
Species				
Dose (mg/kg)				
Route of administration				
Frequency of administration				
Will drugs be given post-procedurally? (Yes/No)				

7c. Will any animals be **anesthetized**?

- ◯ No — Skip ahead to Question 7i.
- ◯ Yes — Answer Questions 7d - 7g.

7d. What will be the maximum duration of anesthesia?

7e. How will depth of anesthesia be monitored?

7f. What are the indications that you will use to determine that supplemental doses of anesthetics are necessary?

7g. Will any animals recover from anesthesia?

- ◯ No — Skip ahead to Question 7i.
- ◯ Yes — Answer Question 7h

7h. Describe below the postanesthetic/post surgical monitoring plan that you will use.

7i. Will **analgesics** be administered either postoperatively or postprocedurally?

- ◯ No — Skip ahead to Question 7k.
- ◯ Yes — Answer Question 7j.

7j. How will you determine whether **supplemental doses** of postoperative or postprocedural analgesics are necessary?

7k. Will **neuromuscular blocking agents** be used?

- ◯ No — Skip ahead to Question 8a.
- ◯ Yes — Answer Question 7l.

7l. If neuromuscular blocking agents are used, explain how you will determine whether the animal is adequately anesthetized.

EUTHANASIA (QUESTIONS 8a - 8h)

8a. In the event that it becomes necessary to euthanize animals during or following this project, specify in the table below the method(s) of euthanasia to be used for each species. If drugs will be used, specify the agent, dose and route of administration. Acceptable, conditionally acceptable, and unacceptable methods are listed in the IACUC document, "Methods of Euthanasia by Species", as adapted from the "Report of the AVMA Panel on Euthanasia". See Instructions for additional information. If more than four species will be used, duplicate the table to accommodate additional entries.

	Species 1	Species 2	Species 3	Species 4
Species				
Method				
Agent				
Dose (mg/kg)				
Route of administration				
AVMA classification (Acceptable, conditionally acceptable, or unacceptable)				

8b. Are any of the methods of euthanasia listed in the table in Question 8a classified as either conditionally acceptable or unacceptable by IACUC as indicated in the IACUC document, "Methods of Euthanasia by Species", as adapted from the "Report of the AVMA Panel on Euthanasia"?

◯ No Skip ahead to Question 8d.

◯ Yes Answer Question 8c.

8c. Provide justification for selecting a method of euthanasia that is classified as either conditionally acceptable or unacceptable by IACUC as indicated in the IACUC document, "Methods of Euthanasia by Species", as adapted from the "Report of the AVMA Panel on Euthanasia". Justify why the recommended method should not be used.

8d. How will you ensure that the animal will not revive (for example, removal of heart, induction of bilateral pneumothorax, observation of rigor mortis, etc.)?

8e. Will **all** animals either die or be euthanized during or at the conclusion of this project?

- ◯ Yes — Skip ahead to Question 8g.
- ◯ No — Answer Question 8f.

8f. What will happen to the animals that do not die or are not euthanized during this project (sale, transfer to another investigator, adoption, release, etc.)?

8g. Will ether be used to euthanize animals?

- ◯ No — Skip ahead to Question 9.
- ◯ Yes — Answer Questions 8h.

8h. The Guide for the Care and Use of Laboratory Animals makes the following recommendation regarding the use of ether:

"Although ether [n.b. diethyl ether] is effective, it must be used with care because it is flammable and explosive and for safe use requires special precautions. Signs indicating that ether is present or in use should be posted conspicuously. To avoid explosions, the carcasses of animals euthanized with ether should be stored in explosion-safe refrigerators and should not be incinerated until the ether is volatilized."

Will you follow the recommendations in the Guide for the Care and Use of Laboratory Animals regarding the use of ether for euthanasia?

◯ Yes

◯ No Note: Do **not** use ether to euthanize animals.

8i. Why was this route of disposition of the animals selected?

ANIMAL USE PROCEDURES (QUESTION 9)

9. For each species, **describe in narrative form all experimental or instructional procedures to be performed on the animals** (e.g., blood collection, surgery, behavioral training, administration of substances or test compounds, breeding, tumor induction, etc.). Include the time frames and intervals and describe the procedures in the order in which they will be performed. Include a description of procedures performed on anesthetized animals. All procedures checked in Question 5 should be described below.

Include the rationale for use of tissues in vitro but do not describe in vitro procedures performed on tissues taken from animals or procedures performed on animals after they are euthanized.

[ATTACH PAGES AS SUPPLEMENT AS NEEDED]

9a. Describe expected adverse consequences that the animals may experience as a result of the procedures or test compounds described in Question 9. Examples of expected adverse consequences include loss of appetite, post-operative discomfort, pain at an injection site, or loss of animal life including euthanasia.

9b. List severe complications that the animals may experience as a result of the procedures or test compounds described in 9. above. Examples of severe complications include post-operative infections, wound dehiscences, hemorrhage, ventricular fibrillation, paralysis, anesthetic death, etc.

According to the regulations of the Federal Animal Welfare Act [9 CFR 2.31(e)(2)], a proposal to conduct research utilizing animals "must contain...a rationale for involving animals..."

9c. Why must animals be used to accomplish the proposed work?

The regulations of the Federal Animal Welfare Act [9 CFR 2.31(e)(2)], guidelines issued by the United States Government entitled Principles for the Utilization and Care of Vertebrate Animals Used in Testing, Research and Training, and University policy require that animals selected for a procedure should be of an appropriate species and that the minimum number required to obtain valid results should be used.

9d. Why were the requested species of animals chosen for the proposed work? Describe the biological characteristics of the animal that are essential to the proposed study. Describe any experience with the proposed animal model.

9e. For each species, show how you calculated the number of animals requested in each Humane Use Category in Question 6. **Justify the estimated numbers of animals used to achieve each scientific aim of your project.** If applicable, list the number of animals in experimental and control groups and those needed for procedure development. Use a table if necessary. NOTE: The total number of animals justified here must equal the total number requested in Question 6.

According to the regulations of the Federal Animal Welfare Act [9 CFR 2.31(d)(ii)], the institutional animal care and use committee shall determine that "...The principal investigator has considered alternatives to procedures that may cause more than momentary or slight pain or distress to the animals, and has provided a written narrative description of the methods and sources...used to determine that alternatives were not available."

[Note: Alternatives to procedures that may cause more than momentary or slight pain or distress may include 1) the use of procedures that cause less pain or distress, 2) the use of anesthetics, analgesics or tranquilizers that would reduce pain or distress, or 3) the use of methods that do not utilize animals.]

9f. If you requested use of animals in Categories B or C, how do you monitor scientific advances that would enable you to use less painful or distressful procedures? Examples of methods to monitor scientific advances would include: a literature search using a database, review of scientific journals, and attendance at scientific meetings. Check all that apply and provide the additional information.

☐ Literature search
Specify which databases:

☐ Review of scientific journals
Specify which journals:

☐ Attendance at scientific meetings
Specify which meetings:

☐ Discussion with colleagues
Specify which colleagues:

SURGICAL PROCEDURES

10. Will recovery surgical procedures be performed on vertebrate animals?

◯ No Skip ahead to Question 11.

◯ Yes Complete Appendix A.

RESTRAINT (QUESTIONS 11a - 11d)

11a. Will unanesthetized animals undergo physical restraint for more than 30 minutes?

◯ No Skip ahead to Question 12a.

◯ Yes Answer Questions 11b, 11c, and 11d.

11b. For each species, list the type(s) of restraint devices to be used.

11c. Specify the maximum duration and frequency of restraint the animal will experience?

11d. Briefly describe the purpose of the physical restraint.

BREEDING COLONIES

12. If a breeding colony is to be maintained as part of this project, complete the following table for each colony maintained (see instructions). If more than four colonies will be maintained, duplicate the table to accommodate additional entries.

	Colony 1	Colony 2	Colony 3	Colony 4
Species				
Strain / Stock				
Generation				
Breeding scheme				
Genetic monitoring program (Yes/No)				
Subline or substrain designation used in research reports				

ACQUISITION, QUARANTINE, CONDITIONING, ANIMAL HEALTH, ANIMAL HOUSING AND ANIMAL USE FACILITIES

13. Identify the source from which you will acquire the animals to be used in this project.

NOTE: Purchase requisitions for animals must carry the signature of the Chair of IACUC (or designate) and display the PAN.

14. Complete the table below for all locations (rooms) where the animal use procedures described in Question 9 will be performed.

		Room 1	Room 2	Room 3	Room 4	Other
	Room Number					
	Building					
	Species					
For **all species** of animals that you have requested, answer these two questions.	Are **non-surgical** procedures performed in this room? (Yes/No)					
	If this is a laboratory, are animals **housed in it for more than 12 hours**? (Yes/No/Not Applicable)					
For **rodents**, **birds**, **fish**, **amphibians**, or **reptiles** requested, answer this question.	Are **recovery** surgical procedures performed on **rodents**, **birds**, **fish**, **amphibians**, or **reptiles** in this room? (Yes/No)					

BIOHAZARD USE

15. Will you house animals in the animal facility after they have been given agents (infectious, carcinogenic, radioactive, toxic, or chemical) that may be hazardous to humans or other animals ? You do not need to report experiments in which the exposed animals are retained in the laboratory in an approved setting and never returned to the animal facility or released.

◯ No Skip ahead to Question 16.

◯ Yes Complete Appendix B.

PERSONNEL

16. Who will insure that all personnel participating in this project are properly trained (if other than the principal investigator)?

17. Briefly describe the education, training, or experience which qualifies these individuals to train others in the animal use procedures to be used in this project.

18. In the table below, list all personnel who will perform the procedures described in Question 9 and attached appendices. Indicate which individuals should participate in the EMU OSEH Health Program for Animal Handlers (see instructions).

Name	Department	Phone	Campus Address Including ZIP	OSEH Program? (Yes/No)

APPROVAL OF SCIENTIFIC MERIT

Before any project utilizing animals can be initiated it must be reviewed and approved based on scientific or instructional merit. IACUC is charged with assuring that this scientific or instructional merit review is complete prior to issuing an approval number for acquisition of animals. To assure that this review is in place, the IACUC needs to know some details about the review process you have selected.

19. If you will initiate the project only after it has been reviewed outside Eastern Michigan University (e.g., NIH, NSF, AHA, etc.) or within the University by a formal review group please, identify which group, agency or board has reviewed or will review this project for scientific or instructional merit. (Attach award notice for currently funded projects. Forward award notice when proposed projects become funded.)

20. The head of your department or his/her Official Designate* must assure the scientific or instructional merit of this project. Please have her/him sign below on the signature line and indicate whether the review was conducted by (check one):

- ◯ Department Head: _____
- ◯ Department Head's designate: _____
- ◯ Departmental Committee: _____
  - Committee Chairperson: _____
- ◯ Other review process (Please describe): _____

_____.
Name (Typed) of Department Head or Official Designate

_____.
Signature of Department Head or Official Designate

* The Official Designate must be a faculty member and the name(s) of Official Designates must be on file with the IACUC Office.

21. PRINCIPAL INVESTIGATOR'S ASSURANCE

- I acknowledge responsibility for this project.
- I have read the Eastern Michigan University Principles for the Care and Use of Laboratory Animals and certify that this project will be conducted in compliance with those principles.
- I assure that I will obtain IACUC approval prior to significant changes in the protocol.
- I assure that this project does not unnecessarily duplicate previous research or instructional projects.
- I assure that students, staff and faculty on the project are qualified or will be trained to conduct the project in a humane and scientific manner.

_____.
Signature of Principal Investigator/Course Director
(Must be a Faculty Member)

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Veterinary Faculty Reviewer	Date
Biohazard Reviewer	Date
Administrative Reviewer	Date

APPENDIX A: SURGICAL PROCEDURES

A 1. Who will perform the surgical procedures? For each name listed, quantify their experience in performing the surgical procedures described in Question 9.

A 2. Describe the area (laboratory, dedicated surgical facility, etc.) where rodent recovery surgery will be performed.

A 3. How will the rodent surgery instruments be cleaned and sterilized? If multiple surgical procedures are performed, describe how instruments will be cleaned and disinfected between rodents.

A 4. How will the rodent's skin surface be prepared?

A 5. What procedures will the surgeon follow (e.g., preoperative scrub) and what equipment will the surgeon use (sterile gloves, mask, etc.) to maintain asepsis during rodent surgery?

A 6. Will the animals undergo more than one major surgical procedure from which they are allowed to recover?

- ◯ No
- ◯ Yes Answer Questions A 8, A 9 and A 10.

A 7. List these major recovery surgical procedures. (Do not repeat descriptions of procedures from Question 9.)

A 8. Indicate the minimum interval of time between procedures.

A 9. Briefly describe the purpose of the multiple major surgical procedures?

A 10. If animals have undergone major surgical procedures prior to use in this project , briefly describe why an animal will be used in a second project involving major surgical procedures from which the animal is allowed to recover.

APPENDIX B BIOHAZARD USE

B 1. For each hazardous agent that is given to animals that are subsequently housed in the animal facility, list the following information in the table below: type of hazard (infectious, carcinogenic, radioactive, toxic, chemical), amount administered, route of administration, duration of exposure (single dose, number of days, etc.), whether the hazard will be brought into the animal facility, whether the hazard will be excreted or shed by animals in the animal facility, and the duration the hazard will be present in the animal housing facility. If more than four agents are used, duplicate the table to accommodate additional entries.

	Agent 1	Agent 2	Agent 3	Agent 4
Hazardous agent				
Type of hazard				
Amount administered				
Route of administration				
Duration of exposure of animals				
Will the hazard be brought into the animal facility? (Yes/No)				
Will the hazard be excreted or shed by animals while they are housed in the animal facility? (Yes/No)				
Duration of hazard in animal facility				

B 2. Were any of the hazards listed in the table above classified as infectious? **NOTE: EMU does not have facilities to allow the appropriate biosafety protocol for infectious agents in animal experiments.**

B 3. Were any of the hazards listed in the table above classified as radioactive?

- ◯ No — Skip ahead to Question B 5.
- ◯ Yes — Answer Question B 4.

B 4. Will you follow the Radiation Control Committee's "Standard Procedures and Protocols for Using Radioactive Material in Animals"?

- ◯ Yes — Skip ahead to Question B 5.
- ◯ No — Attach a copy of the protocols to be used to prevent exposure of personnel and other animals to radioactive materials.

B 6. If any of the hazards listed in the table above are classified as carcinogenic, toxic, or chemical, attach a copy of the protocols to be used to prevent exposure of personnel and other animals to carcinogenic, toxic, or chemical hazards.