

Sponsored Programs Administration  
Office of the Vice President for Research, Creative Activities and Technology Transfer  
1735 NDSU Research Park Drive, Dept. 4000, PO Box 6050  
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<i>Office Use Only:</i>			
IACUC #:	_____	Date Received:	_____
Full Board	_____	DR	_____
Approval Date:	_____	Protocols, PTF associated:	_____
Approval Period:	_____ - _____	Pilot Study:	Yes <input type="checkbox"/> No <input type="checkbox"/>

## Animal Care and Use Application

*For institutional review only*

Project Title

Principal Investigator

Department

Campus Address

Contact Phone

E-mail Address

List any additional contact information for animal-care issues (*optional*):

Anticipated duration of the study:  
(*Not to exceed three years*)

\_\_\_\_\_  
Principal Investigator

\_\_\_\_\_  
Date

\_\_\_\_\_  
Chair, Head, Director or Dean  
(if Pi is Dept. Chair/Head/Director, the Dean must sign)

\_\_\_\_\_  
Date

*The signature above certifies acknowledgment that this research is in keeping with the standards set by your department/unit, all NDSU policies and that facility, equipment and personnel are appropriately committed to this project*

\_\_\_\_\_  
IACUC Chair

\_\_\_\_\_  
Date

**Carefully review the application to ensure it is complete, contains sufficiently detailed responses to all questions and all attachments. Incomplete applications will be returned or held until completed, without IACUC review or approval, potentially delaying the research. Contact the IACUC office for questions or assistance at 231-8114 or 231-8995.**

**1. Classification and funding:**

- Category **B** (animals being bred, conditioned, or held for *but not yet used in* research or teaching)
- Category **C** (animals used for teaching or research causing no or only momentary pain or distress (i.e. routine venipuncture), not requiring the use of anesthetics or pain-relieving drugs)
- Category **D** (Animals used for teaching or research causing more than momentary pain or distress to the animals and for which appropriate anesthetic, analgesics, or tranquilizers will be used):  
*complete Search for Alternatives to Animal Use*
- Category **E** (Animals used for research or teaching causing more than momentary pain or distress, without the use of pain relieving drugs (analgesics, anesthetics, or tranquilizers), or protocols where animals will be allowed to die as a planned result of the study, with no intervention (i.e. euthanasia)): *complete Search for Alternatives to Animal Use and Justification for Unrelieved Pain and Distress*
  
- Internally Funded: no grant or contracts associated
- Externally Funded. Source:  
Associated NDSU Proposal Transmittal Form number or grant number:

**2. Additional documentation.** Check all that apply and provide appropriate form:

- Search for Alternatives to Animal Use (*classification D or E only*) – Appendix A
- Breeding – Appendix B
- Herd Management – Appendix C
- Justification for Unrelieved Pain and Distress – Appendix D
- Analgesics, Anesthetics, or Surgery – Appendix E
- Teaching or Classroom – Appendix F
- Wildlife and Free-Ranging Animals – Appendix G
  - Exempt from oversight (*Fill out and submit only the remainder of this form and the first page of the Wildlife and Free-Ranging Animals form*)

**3. Will the focus and intent of the project be biomedical in nature?**

- YES       NO

**4. Project activity.** Describe the specific goals of this project clearly and concisely. Use language understandable to nonscientists and avoid acronyms.

- What is the purpose of the study?
- What potential benefits might be derived from the study?

**5. Procedures to be applied to animals.**

**6a. Animals to be used in this activity:**

Species/strain* (include common name)	Sex	Age	Pain Category	Maximum Number of Animals used during project

\*Strain is required if you have animals that are of specific genetic interest or are inbred, outbred, or transgenic.

**6b. Source of animals.** List vendor/breeder, stockyard, institution, other NDSU unit or herd, etc.

\_\_\_\_\_

**6c. Justify the species and number of animals to be used, statistically when applicable.**

\_\_\_\_\_

**7. Where will the animals be housed/located?**

\_\_\_\_\_

**8. Where will procedures take place?**

\_\_\_\_\_

**9. Will your project require any specialized project related housing or husbandry?** (e.g. sterile cages, wire bottom cages, environmental enrichment devices, social isolation)

\_\_\_\_\_

**10. What known or potential animal-related problems can be anticipated during this project?**

\_\_\_\_\_

How will the above issues be addressed?

\_\_\_\_\_

Under what circumstances will animals be removed from the project?

\_\_\_\_\_

**11. What will be the disposition of the animals used in this project?**

- Euthanized in the lab, with or without further sampling postmortem; carcasses disposed of by incineration or other approved method
- Harvested in commercial facilities under state or federal inspection with carcasses entering the food chain
- Released back into the natural habitat
- Maintained under animal management conditions for future use in research
- Transferred to another project – list protocol number and investigator
- Other (describe)

\_\_\_\_\_  
\_\_\_\_\_

**12. Euthanasia.** Describe euthanasia method(s) used as part of the study; also, for all projects, describe the method of euthanasia to be used in emergencies.

\_\_\_\_\_

**13. Is animal death (without euthanasia) a planned endpoint of the study?**

- No  Yes. If yes, provide a scientific justification.

\_\_\_\_\_

**14. Training documentation**

Complete below for each person who will have any contact with live animals, *including the PI*, so that the IACUC can adequately assess qualifications and training for this protocol.

If the PI is not the person responsible for supervision of students or employees, provide the supervisor's name. *Supervisor training must be completed.*

Name	Position within University	Animal-related project duties	For IACUC office use only	
			Training Core module completed	Certification of Qualifications

**\* To add personnel to after initial approval, complete the Addition of Personnel Form, sign and forward to the IACUC office.**

**15. Principal investigator certifications:**

By signing the cover page of this protocol, I certify that:

- all the information provided is accurate to the best of my knowledge and I will adhere to the procedures described;
- all individuals listed as personnel on this project are trained and qualified for their specific duties involving animals under this proposal;
- all persons listed on this protocol have read the protocol or will be provided access to the complete protocol approved by the committee before engaging in any animal use related to this project;
- the activities described in this study do not *unnecessarily* duplicate previous experiments. If activities will duplicate previous experiments, I have included a written explanation and justification for the duplicative procedures.

and I agree to:

- obtain approval from the IACUC *in advance* of any changes in the project;

- notify the Attending Veterinarian and/or the IACUC of any unexpected study results that impact animal welfare;
- comply with guidelines in *The Care and Use of Vertebrate Animals at NDSU* and with NDSU Occupational Health and Safety Guidelines;
- be familiar with and comply with all pertinent institutional, state, and federal rules and policies;
- be responsible for the supervision and work of my staff;
- retain copies of this protocol and all correspondence associated with it for three years beyond the completion of the animal use;

<b>Search for Alternatives to Animal Use</b>	Appendix A
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**Federal regulations require the consideration of alternatives to procedures that may cause more than momentary or slight pain or distress to animals** (USDA Policy 12 - Written Narrative for Alternatives to Painful Procedures: <http://www.aphis.usda.gov/ac/policy/policy12>).

- **Replacement** of vertebrate animals with *in vitro* models, computer models, or less-sentient animal species.
  - **Refinement** of experimental procedures to minimize pain or distress (e.g., early endpoints, use of analgesics, anesthetics, or sedatives; techniques that reduce stress in the animal).
  - **Reduction** in the number of animals by using appropriate statistical methods in the design and analysis of the study, reduction in variability by using animals of defined genetic or microbiological status, and maximizing the data gained from an individual animal.
1. **Alternatives.** Describe how you have incorporated each of the above alternatives in the design of the study (*practicing the Three R's*), or what alternatives were considered and why they were not found to be suitable for accomplishing the goals of the study.

2. **Methods used to search for alternatives (indicate all that apply)**

**Literature Search**

Name of database(s)/search(es) utilized (e.g., AGRICOLA, NORINA, ALTWEB, PUBMED, MEDLINE, etc):

Key words:

Years searched (inclusive): from \_\_\_\_\_ to \_\_\_\_\_

Date the search was completed:

**Consultation with colleague(s)**

Name(s):

Date of consult:

Qualifications of consultant:

Content of consult:

**Other information services** (provide specific information):

3. **Attending Veterinarian Consultation**  No  Yes Date contacted:

The AWA requires that the attending veterinarian must be consulted in the planning stage for projects *with animals listed in Category D or E*. Please contact NDSU Attending Veterinarian Dr. Scott Walden if you have not consulted with him already on *this specific project* (231-7830).

## Breeding

Appendix B

1. **Source (name of company or group)**


2. **Extra/overstock animals.** In the process of breeding animals for specific purposes, not all animals may be needed in or meet requirements for the study. What are the specific criteria for removal and the estimated number that will not be used? What other factors may determine removal from the colony? How will culled animals be removed/disposed? Include method(s) of euthanasia.

3. **Transgenic lines**

Will you be *breeding* transgenic lines?

No  Yes

Will you be *creating* transgenic lines?

No  Yes  (*separate IBC approval must be obtained in addition to IACUC approval*)

Describe the DNA/transgene or gene that is needed/of interest/to be disrupted.

Method to monitor the presence of transgene in line.

Anticipated inherent problems associated with and special care needed by this line.

<b>Herd Management</b>	Appendix C
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Animals under this management protocol will not have to be transferred to another protocol if they are moved to other facilities for shows, demonstrations, and programs other than NDSU courses, research and testing. Filing this protocol indicates your understanding that even observation of the animals by students of practices that normally occur as part of your production management do not need further approval.

1. **Animal Source** (public market, private cooperator/producer, legal vendor of research animals, etc.) Only animals that are *newly acquired* need be listed below. It is understood that animals will flow from active protocols back to this general herd management protocol, and those returning to the herd management protocol from a research/teaching protocol need not be included here again.

Source Name	Address	City	State

2. **Are health records provided with the shipment from the vendor?**

Yes

No (describe procedure for monitoring health of animals coming in to your facility)

3. **Breeding and parturition.** Describe normal practices for breeding (e.g., AI, natural service, harem) and parturition (e.g., calving, lambing) at your facility.

Who will be the primary person responsible during the breeding season?

Describe semen collection methods including frequency per male if applicable.

4. **Housing and Husbandry.** It is understood that when animals are housed for special events and demonstrations, similar and adequate care will be provided at facilities other than the primary location, as acceptably outlined in this protocol.

Is special housing required outside of general production management standards?

No

Yes (describe)

Describe the housing provided, the number of animals per unit (cage, shoebox, pen, pasture, etc.), and size of unit(s); describe seasonal differences in housing, if any.

**Describe the following:**

Isolation and quarantine areas:

Water source and watering frequency:

\_\_\_\_\_

Frequency of water changes and cleaning bottles, sippers and stoppers:

\_\_\_\_\_

Source of feed and feeding frequency:

\_\_\_\_\_

Frequency of cleaning food holders/bins:

\_\_\_\_\_

Bedding type:

\_\_\_\_\_

Bedding change frequency:

\_\_\_\_\_

Enrichment devices (scratchers, toys, exercise items, etc.):

\_\_\_\_\_

**5. Veterinary Care**

Vaccination schedule and specific vaccines, anthelmintics, or other treatments provided to all animals.

\_\_\_\_\_

Primary veterinary source if not the NDSU Attending Veterinarian. Include name, clinic, and contact information.


\_\_\_\_\_

**Justification for Unrelieved Pain and Distress**

Appendix D

Per USDA regulations 9 CFR section 2.31 (d) (iv) (A), a **scientific justification is required** if anesthetics, analgesics, sedatives, or tranquilizers are to be withheld following painful or distressful procedures.

**In the space below, provide a scientific justification for why pain and distress must remain unrelieved, and submit this form with your protocol.**



<b>Analgesics, Anesthetics, or Surgery</b>	Appendix E
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**1. Surgeon**

Name	Training/Qualifications

**2. Will this be a major or minor surgery?**

*Major Surgery* penetrates and exposes a body cavity or produces substantial impairment of physical or physiological function.

*Minor surgery* is less invasive, e.g., venous cutdown, muscle biopsy, and subcutaneous osmotic-pump placement.

Multiple major survival surgical procedure on any animal are discouraged but may be permitted if scientifically justified by the user and approved by the IACUC: for example, if they are related components of a research project, will conserve scarce animal resources, or are needed for clinical reasons.

*Aseptic/sterile procedures must be followed for all survival surgeries.*

- Minor       Major. Complete the following:
- Sterile survival surgery       Nonsurvival surgery
- Multiple survival surgery (justify need for multiple survival surgeries; include recovery time between procedures)

**3. Presurgical procedure(s)/medications.** Include location (including pen type and whether group housed if animals are treated while in pens) and regimen, dose, and frequency of all presurgical medications.
**4. Surgery Location.**

Building	Room Number(s)
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**5. Surgical Procedure.** Describe in detail.
**6. Postsurgical procedure(s).** Provide the location (including pen type and whether group housed), medication regimen and doses (describe analgesics in #8 below), and frequency of all cares/observation.

**7. Anesthesia**

Anesthetic agent:	
Route of administration:	
Frequency of anesthesia:	
Duration of anesthesia:	
Methods used to monitor anesthesia:	
If inhalation anesthetics are used, describe the system for scavenging waste anesthetic gas:	
Who is responsible for maintaining the anesthesia?	

**8. Analgesics/tranquilizers/sedatives:**

Analgesic/tranquilizer/sedative to be used:	
Dose:	
Frequency:	
Route of Administration:	

**9. Prolonged Restraint (greater than 1 hour)**

Restraint Devices:	
Preconditioning of animal to restraint:	
Duration of restraint:	

**10. Who is responsible for pre and post-operative care?**

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**Teaching and Classroom**

Appendix F

1. **Location.** *This does not include demonstrations outside of the course or moving the animals out of state.* Will the animals be utilized or transported outside of their normal housing area?

No *if no, skip to section 10.*  Yes

If yes, how will they be transported?

\_\_\_\_\_

How will they be housed in this alternate area (include duration); who is responsible for care while in the alternate area?

\_\_\_\_\_

2. **Prolonged Restraint.** Will the animals be restrained for longer than one hour for procedures relating to the study?

No  Yes

If yes, describe the manner and duration of restraint. You may refer to an IACUC-approved Standard Operating Procedure (SOP) here, if applicable.

\_\_\_\_\_

**Wildlife and Free-ranging Animals**

Appendix G

Research and/or teaching field studies are **exempt from animal care and use approval** provided that the study is only **observational** in nature: i.e., it does not involve any habitat disturbance, capture/trapping, physical/chemical restraint, and/or invasive procedures. **Fill out and submit only the Animal Care and Use Application and the first page of this form for observational studies.**

1. **Permits.** It is up to each PI to ascertain the need for permits/permission for research on private and public lands.

Are federal or state permits required?

- No
  Yes. *If yes, have they been obtained? (submit copies to the IACUC office)*  
 Yes       No       Pending

Permitting Agency	Federal/State?	Permitted Activities	Permit Number

Do the permits cover all personnel involved in this project and listed on the protocol?

- Yes     No: explain below. *The IACUC must see updated permits for approval.*

2. **Location.** Provide as detailed a description as possible for where the study will take place: state, county, township, city, street address if available, landowner, etc.

If this project is only observational in nature; you may skip the following questions on this appendix. If you plan to make changes that will alter the activities to include more than just observation (activities including capturing/trapping, physical/chemical restraint, disturbance of habitat and or invasive procedures), notify the IACUC in advance by submitting in writing the completed wildlife protocol, following.

3. **Will there be any manipulations to the surrounding environment?** (e.g., vocalizations broadcast, food or breeding sites altered, models of conspecifics presented)

No  Yes. Describe specific manipulations below.

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4. **Capture.** Describe capture method(s) fully if non-standard technique, or cite literature references if the method is standard procedure. Provide an estimate of the expected mortality for each capture method.

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5. **Sampling.** Indicate the type of samples to be obtained (blood, teeth, feces, specific tissues, etc.), the method used, and a literature reference if the method is standard procedure or a detailed description if it is a non-standard procedure. Include an estimate of the expected mortality for each sampling method.

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6. **Transport/Captivity.** If the animals are held in captivity for longer than is necessary to band, mark, measure, or take samples, indicate the type of enclosure or cage and provide details on the care to be provided.

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Will the animals be brought back to an alternate housing location for an extended period of time?

No  Yes. If yes, describe the housing, period of time they will be housed, how they will be cared for, and intent of housing them at this location.

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How will they be transported? (Describing caging, vehicles, provisions for food and water, and access/interaction/sight of other animals during transportation.)

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### **Adding a person to an approved project**

- *To add persons to an approved protocol, complete the following certifying the individual's training, the protocol on which s/he will be working, and submit the form to the IACUC office (Campus Mail: IACUC Office, Research 1 or e-mail: [ndsu.iacuc@ndsu.edu](mailto:ndsu.iacuc@ndsu.edu)).*
- *Individuals may be added to the protocol and begin work with animals AFTER completing IACUC Core module, certification of training in species specific and protocol specific procedure.*

# Training Certification

## North Dakota State University Institutional Animal Care and Use Committee

Supervisors of all undergraduate and graduate students and research assistants must complete this form *before any unsupervised animal-related techniques or husbandry procedures may be performed*. A separate form is required for each person trained. Only the supervisor or other trainer approved by the IACUC may provide certification of training. Appropriate experience/education may substitute for specific training. The Attending Veterinarian also may use this form to certify investigators.

**Department:** \_\_\_\_\_

**Species covered:** \_\_\_\_\_

### TRAINER CERTIFICATION:

I hereby certify that \_\_\_\_\_ has completed training by the following date(s) \_\_\_\_\_ and has demonstrated competence to perform the following techniques and/or husbandry procedures without direct supervision:

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Husbandry           | <input type="checkbox"/> Anesthetics/Analgesics | <input type="checkbox"/> Other :<br>_____ |
| <input type="checkbox"/> Record keeping      | <input type="checkbox"/> Surgery                | _____                                     |
| <input type="checkbox"/> Injections          | <input type="checkbox"/> Gavage                 | _____                                     |
| <input type="checkbox"/> Vaccinations        | <input type="checkbox"/> Fluid and or Diet      |   |
| <input type="checkbox"/> Euthanasia          | <input type="checkbox"/> Restriction            |   |
| <input type="checkbox"/> Sampling Techniques | <input type="checkbox"/> Prolonged Restraint    |   |

***Review the key (reverse side) for descriptions of above topics. If your training is not covered, please indicate "Other" and identify the technique/procedure.***

I further certify that this student/research assistant will not perform any animal research procedures for which s/he is not certified except under my direct personal supervision.

\_\_\_\_\_  
*Signature of supervisor*                      *Printed name of supervisor*                      *Date*

\_\_\_\_\_  
*Signature of trainee*                      *Printed name of trainee*                      *Date*

***This form may also be used to add trained personnel to a protocol: Protocol number:*** \_\_\_\_\_

***Send completed, signed form to the IACUC Office, Research 1***

## Training Certification

**Key for techniques and husbandry practices covered by checkboxes on reverse side.** Training is protocol-specific and employee-specific. While an individual may not have received training for every point within a category below, each person on a protocol must receive the training required to perform his or her duties for that protocol.

### **Husbandry**

General animal care including dietary requirements, physiological data, breeding (AI, synchronizing), sexing, quarantine, behavioral and illness observations, isolation and monitoring of sick animals, specific needs of transgenics or special breeds, handling parturition assistance, waste disposal, use of Personal Protective Equipment, housekeeping practices, emergency care, exercise, environmental enrichment, habituation, sentinel programs, biosecurity, animal handling, capture, palpation and ultrasound, acceptable agricultural husbandry procedures (e.g., docking, hoof trimming, and castration), transport

### **Record Keeping**

Daily observations, health records, surgical records, controlled-substances documentation

**Injections** (*Intramuscular, subcutaneous, intravenous, intradermal, intravaginal, implants*), drug preparation, placement, humane practices, relevant anatomy, pharmacology, disposal of used needles, Personal Protective Equipment

### **Vaccinations**

Placement, holding, devices, expiration dates

### **Euthanasia**

Agents, physical/mechanical methods, restraint, Personal Protective Equipment, humane practice, disposal, chemical versus pharmaceutical grade

### **Sampling Techniques**

Blood sampling (retro-orbital, IV, and tail snips), semen collection, in-vivo neuro-chemical sampling, rectal fecal sampling, and percutaneous biopsy

### **Anesthetics/Analgesics**

Routes, doses, sterile technique, monitoring plane of anesthesia, documentation, Personal Protective Equipment, disposal of used needles, scavenging practices

### **Surgery**

Pre- and post-surgical care, aseptic technique, recovery, specific procedures as outlined in protocol, FDA wash-out periods, tracheal intubation, embryo transfer

### **Gavage, Oral or Nasogastric**

Routes, lengths, needle gauge, handling, volume, anatomy, drenching

### **Fluid and Diet**

#### **Restrictions/alterations**

Caloric, mineral, fat, protein, fiber etc. requirements, habituation, phasing in/out, prolonged restrictions, fading,

#### **Prolonged Restraint > 1 hour**

Habituation, devices (collars, slings, tethers, etc.)