Animal Care and Use Committee For Administration Use Only

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| Protocol No. | Date Received: | Committee Meeting Date: |

**TEACHING PROTOCOL
New Application Form (Teaching)**

The use of animals for teaching is a privilege. Before a protocol to use animals in the classroom, teaching laboratory, or field exercise is approved, the instructor must show that the use of animals is justified, that the project has pedagogical merit, and that the procedure to which the animals will be subjected will be carried out humanely and in accordance with CCAC standards.

Approved protocols will be valid for a period of 1 year and may be renewed (with minor revisions if required) in years 2, 3 and 4 with re-application in year 5.

Please submit a **signed electronic version** of the completed form to acuc@unbc.ca.

**1. GENERAL INFORMATION**

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| Course Name and Number:  |
| Has this protocol been approved before? [ ]  Yes [ ]  No If yes, please provide previous protocol number:  |
| Instructor / Course Director: |  | UNBC Department: |  |
| Position/Rank: |  | Application Date: |  |
| Phone: |  | Email: |  |
| Start Date: Term and Year |  | End Date: Term and Year |  |
| Location Where Course Will Be Taught:  |
| CCAC Category of Invasiveness: [ ]  A [ ]  B [ ]  C [ ]  D [ ]  E(see *Definitions* in Section 13 of this document for details) | CCAC Purpose of Animal Use (PAU’s):[ ]  0 [ ]  1 [ ]  2 [ ]  3 [ ]  4 [ ]  5(see *Definitions* in Section 13 of this document for details) |

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| Declaration: I, the undersigned, will ensure that all animals used in this project will be treated and cared for in accordance with the policies and guidelines of the Canadian Council on Animal Care and the requirements of the relevant international, federal, provincial and municipal legislation. I accept responsibility for keeping the information in this application current and accurate and for notifying the Animal Care and Use Committee of any deviations from this proposal. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Instructor / Course Director Date |

**2. FUNDING AND PEDAGOGICAL MERIT**

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| Funding: [ ]  N/A [ ]  Internal, Specify: [ ]  External, Specify:  |
|  Proposed date(s) of animal use:  |
| *Before a protocol to use animals in the classroom, teaching laboratory, or field exercise is approved, the instructor must show that the use of animals is justified, and that the project has pedagogical merit. The ACUC does not assess pedagogical merit. The course instructor must discuss the use of animals, as well as describe the learning objectives and outcomes, with their Department Chair. It is the responsibility of the Department Chair to assess the pedagogical merit of the activity. For further details, please see Standard Operating Procedure G-02 Pedagogical Merit, available by contacting* *acuc@unbc.ca**.*Has this protocol been reviewed and approved by your Department Chair for pedagogical merit? Yes [ ]  No [ ] Has this protocol has been reviewed for pedagogical merit by a minimum of two people? Yes [ ]  No [ ] \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Department Chair Name \*Signature of Department Chair\***By signing above, you acknowledge that you have reviewed this protocol and agree that there is pedagogical value to support using live animals in this course.** |

**3. KEY WORD DESCRIPTION – PLEASE CHECK ALL THAT APPLY**

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| General | Procedures | Agents | Surgical |
| [ ]  Acute[ ]  Behavioural Study[ ]  Breeding[ ]  Cell Cultures[ ]  Chronic[ ]  Environmental Protection[ ]  Reinforcement/Motivation[ ]  Tissue/organ Collection [ ]  Transgenic Animal[ ]  Observational[ ]  Wild Animals[ ]  Other (please specify):  | [ ]  Blood Sampling[ ]  Euthanasia[ ]  Food Deprivation[ ]  Gavaging[ ]  Identification/Marking[ ]  Injections [ ] IP [ ] IV [ ] IM [ ] SQ [ ]  Physical Restraint[ ]  Special Diet[ ]  Trapping/Netting[ ]  Water Restriction[ ]  Other (Please specify):  | [ ]  Anesthetics[ ]  Bio-Hazardous[ ]  Carcinogens[ ]  Chemical[ ]  Infectious[ ]  Immunogenic[ ]  Inflammatory[ ]  Other (Please specify):  | [ ]  Cannulation[ ]  Major[ ]  Minor[ ]  Multiple[ ]  Survival[ ]  Terminal[ ]  Other (Please specify):  |

**4. COURSE Description (Summary)**

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| ***4.1*** *In lay terms, provide a brief description of teaching objectives involving animals for the course, including the benefits to the students, and the value of using animals.* |
| ***4.2*** *How many students are (or are likely to be) enrolled in the class?*  |
| ***4.3*** *What will be the ratio of instructors to students?* |

**5. Participants directly involved in the care and use of animals in this project**

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| --- | --- | --- | --- | --- |
| Name | Position | Responsibilities | Contact | Mandatory *Animal Training* Course Completed? |
|  |  |  |  | [ ]  Yes[ ]  No[ ]  N/A, please explain:  |
|  |  |  |  | [ ]  Yes[ ]  No[ ]  N/A, please explain:  |
|  |  |  |  | [ ]  Yes[ ]  No[ ]  N/A, please explain:  |
|  |  |  |  | [ ]  Yes[ ]  No[ ]  N/A, please explain: |
| *Describe the qualifications of each participant, including additional training that each participant has received or will receive (e.g., UNBC “Surgery and Anesthesia” course, etc.). Indicate the source of this training.* |

**6. LAB ANIMAL INFORMATION AND HOUSING -** Identify the total number of each species/strain of animal to be used in this project.

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| ***6.1*** *Identify the total number of each species/strain of animal to be used in this project.*[ ]  N/A, no laboratory animals will be used for teaching. Proceed to Section 7. |
| Species/strain | Number per year | Supplier/Source |
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| ***6.2*** *Indicate the location (room number(s)) where the animals will be housed:* |
| ***6.3*** *Indicate the location (room numbers(s)) where animal procedures will be conducted:* |
| ***6.4*** *If wild animals are to be used, provide the name of the agency issuing all necessary permits, permit numbers, and attach copies of permits.*[ ]  N/A |
| ***6.5*** *UNBC endeavors to provide an appropriate species-specific enriched environment for the maintenance of all animals during short- and long-term housing.* ***6.5.a*** *Using laboratory rodents:*[ ]  N/A, proceed to Section 6.6*Standard mouse housing and husbandry is described in SOP A1-2 “Rodent Husbandry”. All standard mouse cages will receive:** *1 cup of corn cob bedding*
* *¾ cup of crinkle paper*
* *1 nestlet for non-breeding animals, and 2 nestlets for breeding animals*
* *1 plastic house*

*Cages are changed weekly according to SOP A1-2. If this bedding or husbandry regime is not conducive to experiments, please provide proposed changes, and justification.****6.5.b.*** *Optional changes:*[ ]  Rotating enrichment (different materials weekly)[ ]  Trade plastic house for a plastic tunnel[ ]  Add running wheels [ ]  Add balcony [ ]  Add food treats[ ]  Add shred-able autoclaved paper products[ ]  Add shred-able autoclaved wooden tongue depressors[ ]  No additional items added to the cages*Please describe any specific instructions regarding optional items:* |
| ***6.6*** *Using laboratory fish:*[ ]  N/A*Standard housing for laboratory fish will vary from species to species. Please describe, in detail, the housing, enrichment, and tank commissioning plan for laboratory fish. Ensure to include the plan for husbandry.* |

**7. WILD ANIMAL INFORMATION**

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| ***7.1*** *Species**Identify the total number of each species of wild animal to be used in this project.*[ ]  N/A, proceed to section 8. |
| Species | Location | Animal Total / Year | Housing (if used)  |
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| ***7.2******Permits****It is the responsibility of the instructor to obtain all necessary permits for work with wild animals. Please provide the name of the agency issuing all necessary permits, permit numbers, and attach copies of permits* |
| ***7.3 Capture of wildlife****Describe the method of capture in detail, including all details related to type of capture, ideal capture environment, time and frequency for checking traps, chase times, immobilization agents, etc. Provide descriptions of the physical, physiological or behavioral health indicators to determine whether an animal will be captured. Justify why this is the most appropriate capture method for the teaching objectives.*  |
| ***7.4 Handling and restraint of wildlife****Describe all details related to the restraint and handling of wild animals. Include details related to handling times, handling and restraint methods, personal hazards, monitoring methods, etc. Please provide justification for methods.* |
| ***7.5 Housing and transportation****Describe if animals will be transported from the location of capture or held/housed during the capture event. Describe all details including the use of pens and/or enclosures, duration, and nutritional supplementation provided. Please provide justification for methods.* |
| ***7.6 Release of wildlife****Describe the recovery techniques and criteria for suitability of release. Please include monitoring details, additional agent administered, expected time frames, follow-up monitoring (post release), etc.* |

**8. REPLACEMENT, REDUCTION AND REFINEMENT**

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| ***8.1 Replacement****Non-animal alternatives should be used whenever possible. Please explain why available non-animal alternatives are not suitable for meeting the objectives of this course. Justify the benefits to students by using live animals that cannot be gained through non-animal alternatives, if available.* |
| ***8.2 Reduction****Please justify the number of animals requested for each species listed above, and indicate the student to animal ratio. Describe how the numbers were determined, and how they relate to the objectives of the course.* |
| ***8.3******Refinement / Procedure****Provide rationale for the choice of species. Describe the characteristics of the animal species that justifies their use in the proposed course such as body size, species, strain, etc.* |

**9. PROCEDURES INVOLVING ANIMALS**

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| ***9.1******Procedures****Describe all teaching activities involving animals. Include details on capture, restraint, surgical procedures, anesthesia, sample collection, tests, and procedures related to the teaching objectives. Please describe any marking, tagging, banding, or permanent / temporary identification; include the weight of the equipment as a percent of expected animal body weight, the impact on the animals including potential long-term effects, and if equipment is to be removed in the future.* |
| ***9.2******Morbidity, mortality, and endpoints.****Describe any morbidity (injury) or mortality (death) that could be associated with the activities listed above. Please describe mitigation techniques, reporting lines, monitoring, and humane intervention points / endpoints and actions. Provide details of the anticipated numbers / percentages of potentially affected animals.* |
| ***9.3******Monitoring and animal welfare assessments*** *Please describe all monitoring activities and welfare assessments in this protocol. Refer to applicable UNBC SOPs if necessary.* |
| ***9.4 Cumulative endpoints / reuse****Will animals be transferred to or from this protocol to or from another existing protocol? If free-ranging wildlife are being used, is there potential for recapture of the same animal at any point? Please describe precautionary measures to protect the animal’s health and wellbeing if potentially being used multiple times in its lifetime.* |
| ***9.5******Anesthetic/Analgesic Agents****List all anesthetic/analgesic agents to be administered to the animals. Please remember, analgesia should be provided for any potentially painful procedures\*\*.*[ ]  N/A |
| *Species/Strain* | *Agent/Drug* | *Purpose* | *Route**(SQ, IM, etc.)* | *Dosage**(e.g., mg/kg)* | *Amount**(e.g., mL)* | *Frequency* |
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| \*\* If you are *NOT* providing any analgesia, please specify the reason why. |
| ***9.6*** *Other agents to be administered to animals (indicate bio-hazardous material with \*\* and complete Section 10)*[ ]  N/A |
| *Species/Strain* | *Agent/Drug* | *Purpose* | *Route**(SQ, IM, etc.)* | *Dosage**(e.g., mg/kg)* | *Amount**(e.g., mL)* |
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| ***9.7*** *Indicate all samples to be taken for each species / strain.*[ ]  N/A |
| *Species/Strain* | *Type of Sample* | *Site* | *Amount* | *Procedure* | *Frequency* |
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**10. HAZARDOUS MATERIALS**

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| [ ] No hazardous materials will be used in this study (*Go to Section 11)* |
| *Indicate which of the following will be used in animals (\*\*complete details must be listed in Section 11, marked as \*\*)*[ ]  Infectious agents (includes vectors) [ ]  Toxic chemicals [ ]  Radioisotopes [ ]  Carcinogens[ ]  Other (please specify):  |
| *Has the use of hazardous materials been reviewed by the Laboratory Safety Committee?* [ ]  Yes [ ]  No |
| *Describe potential health risk(s) to humans or animals. Indicate duration of the effects of the agent****.*** |
| *Describe measures that will be used to reduce risk to the environment, the project and personnel.*  |

**11. ENDPOINTS AND EUTHANASIA**

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| ***11.1 Endpoints****Endpoints are clear criteria to define the point at which humane intervention must be implemented to prevent or relieve unnecessary pain and/or distress. What are the criteria to terminate the procedure/study and potentially the animal if unanticipated pain and/or distress occur?* |
| ***11.2 Euthanasia****If euthanasia is necessary upon termination of the study, or where pain and/or distress exceeds the threshold, specify the method of euthanasia.****Acceptable methods of Euthanasia:*** *Please specify the method of euthanasia.*[ ]  Injection of diluted/buffered barbiturate\* [ ]  Exsanguination with anesthesia[ ]  Decapitation with anesthesia, list agent/dose/route\* [ ]  Maceration (for fish less than 2cm in length)[ ]  Cervical dislocation with anesthesia, list agent/dose/route\* [ ]  Overdose of inhalant anesthetics with C02[ ]  Immersion or injection of buffered TMS/MS222 (Fish/Frogs) [ ]  Clove oil (Fish)[ ]  Other (please specify):\*List agent/dose/route:***Conditionally Acceptable Methods****: Please specify the method of euthanasia* [ ]  Decapitation *without* anesthesia [ ]  Cervical dislocation *without* anesthesia[ ]  C02 only (Rodents) [ ] Concussion (Fish)[ ]  Other (please specify): *The use of any Conditionally Acceptable Method must be justified. Please explain the reason why this method of euthanasia is required:* |
| ***11.3*** *If an animal needs to be euthanized, how will the carcass be disposed of?* |
| ***11.4*** *What is the intended fate of the animals used in the teaching activity?*[ ]  Nothing, observations only [ ]  Released, at or near capture site[ ]  Released, at other location [ ]  Euthanized [ ]  Other, please specify: |

**12. Emergency PlAN**

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| *Provide the contact information of a veterinarian(s) when consultation may be necessary.* |
| Name and Address of Contact |  | Phone Number |  |

**13. DEFINITIONS**

**Description of Purpose of Animal Use (PAUs)**

**0: Breeding Colony/Stock** – Animals held in breeding colonies (e.g., fish, rodents) that have not been assigned to a particular research or teaching protocol.

**1: Fundamental Nature Studies** – Studies of a fundamental nature in sciences relating to essential structure or function (e.g., biology. psycho-biochemistry, pharmacology, physiology, etc.). Possible examples are studies designed to understand: the cellular and/or molecular basis of inflammatory reactions or basic physiological or biochemical reactions; one of the various roles played by a hormone or other compound in mammals; the behavior of species; the population dynamics of various species.

**2: Medical Purposes -** Studies for medical purposes, including veterinary medicine, that relate to human or animal diseases. These are studies carried out to better understand a specific disease or disorder and to possibly find therapies for it. Possible examples: development of a mouse model for a specific type of cancer or other disease; studies to determine which antibodies are the most likely to contribute positively to the therapy of a specific type of cancer; studies to determine which molecule within a particular class of compounds is the most likely to contribute to maintaining stable blood glucose levels in an animal model of diabetes.

**3: Regulatory Testing** - Studies for regulatory testing of products for the protection of humans, animals, or the environment. Possible examples: safety testing, regulatory toxicology, vaccine efficacy trials and testing of new therapeutic compounds.

**4: Development of Products** - Studies for the developmentofproducts or appliances for human or veterinary medicine. These are studies that investigate potential therapies (as determined following studies of PAU 2) for humans or animals, before regulatory testing. PAU 3 is carried out on the most promising therapies. **Possible examples** include studies undertaken to: investigate the role and effects of a specific drug or immunotherapy candidate for cancer; develop physical devices to assist heart function; develop artificial organs.

**5: Education and training** – Education and training of individuals in post-secondary institutions or facilities. These are teaching or training programs where animals are used to introduce students to scientific work and teach manual skills and techniques.

**Category of Invasiveness\***\*(Excerpt from the 1991 CCAC policy statement on: Categories of Invasiveness in Animal Experiments)

**A: Experiments on most invertebrates or on live isolates**. **Possible examples** are the use of tissue culture and tissues obtained at necropsy or from the slaughterhouse; the use of eggs, protozoa or other single-celled organisms; experiments involving containment, incision or other invasive procedures on metazoa.

**B: Experiments which cause little or no discomfort or stress.** **Possible examples:** domestic flocks or herds being maintained in simulated or actual commercial production management systems; the short-term and skillful restraint of animals for purposes of observation or physical examination; blood sampling; injection of material in amounts that will not cause adverse reactions by the following routes: intravenous, subcutaneous, intramuscular, intraperitoneal, or oral, but not intrathoracic or intracardiac (Category C); acute non-survival studies in which the animals are completely anesthetized and do not regain consciousness prior to euthanasia; short periods of food and/or water deprivation equivalent to periods of abstinence in nature.

**C Experiments which cause minor stress or pain of short duration. Possible examples:** cannulation or catheterization of blood vessels or body cavities under anesthesia; minor surgical procedures under anesthesia, such as biopsies, laparoscopy; short periods of restraint beyond that for simple observation or examination, but consistent with minimal distress; short periods of food and/or water deprivation which exceed periods of abstinence in nature; behavioural experiments on conscious animals that involve short-term, stressful restraint; exposure to non-lethal levels of drugs or chemicals. Such procedures should not cause significant changes in the animal's appearance, in physiological parameters such as respiratory or cardiac rate, fecal or urinary output, or in social responses. Note: During or after Category C studies, animals must not show self-mutilation, anorexia, dehydration, hyperactivity, increased recumbency or dormancy, increased vocalization, aggressive-defensive behaviour or demonstrate social withdrawal and self-isolation.

**D: Experiments which cause moderate to severe distress or discomfort. Possible examples:** major surgical procedures conducted under general anesthesia, with subsequent recovery; prolonged (several hours or more) periods of physical restraint; induction of behavioural stresses such as maternal deprivation, aggression, predator-prey interactions; procedures which cause severe, persistent or irreversible disruption of sensorimotor organization; the use of Freund's Complete Adjuvant (FCA) (see CCAC policy statement on: acceptable immunological procedures). **Other examples** include induction of anatomical and physiological abnormalities that will result in pain or distress; the exposure of an animal to noxious stimuli from which escape is impossible; the production of radiation sickness; exposure to drugs or chemicals at levels that impair physiological systems. Note: Procedures used in Category D studies should not cause prolonged or severe clinical distress as may be exhibited by a wide range of clinical signs, such as marked abnormalities in behavioural patterns or attitudes, the absence of grooming, dehydration, abnormal vocalization, prolonged anorexia, circulatory collapse, extreme lethargy or disinclination to move, and clinical signs of severe or advanced local or systemic infection, etc.

**E: Procedures which cause severe pain near, at, or above the pain tolerance threshold of an unanesthetized conscious animal.** This Category of Invasiveness is not necessarily confined to surgical procedures, but may include exposure to noxious stimuli or agents whose effects are unknown; exposure to drugs or chemicals at levels that (may) markedly impair physiological systems and which cause death, severe pain, or extreme distress; completely new biomedical experiments which have a high degree of invasiveness; behavioural studies about which the effects of the degree of distress are not known; use of muscle relaxants or paralytic drugs without anesthetics; burn or trauma infliction on unanesthetized animals; a euthanasia method not approved by the CCAC; any procedures (e.g., the injection of noxious agents or the induction of severe stress or shock) that will result in pain which approaches the pain tolerance threshold and cannot be relieved by analgesia (e.g., when toxicity testing and experimentally-induced infectious disease studies have death as the endpoint).