Animal Use Protocol - RESEARCH

***Please refer to the GPRC* ANIMAL CARE AND ANIMAL USAGE POLICY**

An Animal Use Protocol - Research (AUP-R) must be filed with and approved by the GPRC Animal Care Committee (ACC) prior to the acquisition of animals for research purposes.

DECLARATION:

1. I declare that have read and understand the GPRC **ANIMAL CARE AND ANIMAL USAGE POLICY and hereby agree to conduct the proposed research consistent with the principles, intents and specifics of the policy.**
2. As Principal Investigator, I declare that I will ensure that all persons involved with this research have read the GPRC **ANIMAL CARE AND ANIMAL USAGE POLICY and will abide by the principles, intents and specifics of the policy.**
3. **I declare that I have verified that all applicable external protocols and or approvals associated with the type of research and source of animals for this research have been identified and obtained.**
4. **I hereby agree that as Principal Investigator I am responsible for compliance on all matters associated with this research.**

5.

AUP-R Protocol # _____

_____

Principal Investigator Signature

1. PERSONNEL (while persons external to GPRC may be the Principal Investigator NO AUP-R will be approved without an appropriate GPRC staff member as an Associate Investigator)

Principal Investigator (PI)	Internal: Department External: Organization	Phone Number	E-mail
Designated Emergency Contact(s)	**Work Hours Phone Number**	**After Hours Phone Number**	**E-mail**
Associate Principal Investigator(s) (API) or Associate Investigator(s) (AI)	**Department**	**Phone Number**	**E-mail**
Technical Staff	**Department**	**Phone Number**	**E-mail**
Students	**Department**	Course # Casual	Current contact Information for all students involved must be maintained by the PI or lead API

2. PROJECT AND/OR COURSE INFORMATION:

Descriptive Title: **(Please give a descriptive title that indicates, in lay terms, the nature of the procedures used)**

Course Alignment: **(Please indicate which course this proposed research will align with; and please indicate degree of alignment i.e. 1. direct (embedded in course); 2. in-direct (learnings integrated into course materials); 3. ad hoc (casual student involvement); or 4. not aligned (student employment/engagement opportunity).** *[Note: all are good – just need to know for reporting purposes]*

Research Protocol(s): **(Please insert research protocol from the research proposal OR append and indicate within the text box.**

Does this proposed research use an existing Animal Care Protocol (ACP)?

[ ] No

[ ] Yes - List existing ACP Number(s)

Does this application replace an existing Animal Use Protocol – Research (AUP-R)?

[ ] No (this means you are asking for a new AUP-R to be approved)

[ ] Yes - List previous/current AUP-R Number

Does this proposed animal use require external approvals?

[ ] No

[ ] Yes - List previous approvals

From whom?	Status (submitted/pending/approved)

Describe as needed and attach copy:

Budget attached? [REQUIRED ELEMENT]

[ ] Yes [ ] No

Has funding been approved for this study?

[ ] Yes [ ] No, applying for funds

Research Funding Source(s): **(Please attach relevant portions of the grant proposal)**

Source (insert all in cell below)	Amount (total cash)	Amount (total in-kind)	Total Project Cost	Comments
(e.g. AHT Budget, Bayer Valley Feeds,)	*$12,000*	*$2,500*	*$14,500*	*This is an example*

Peer Review for Scientific Merit of Research Studies has been / will be performed by:

[ ] Granting Agency [ ] College Review Committee

[ ] Other (specify):-

NOTE: THE RESULTS OF SCIENTIFIC MERIT REVIEWS INITIATED BY THE INVESTIGATOR MUST BE COMPLETED AND BECOME PART OF THE AUP APPLICATION BEFORE THIS AUP CAN BE APPROVED.

Proposed Start Date:		Proposed Completion Date:	

NOTE: MULTIPLE YEAR PROJECTS REQUIRE ANNUAL REVIEWS

CANADIAN COUNCIL ON ANIMAL CARE CATEGORIZATIONS

Purpose of Animal Use (check all that apply):

[ ] (1) Studies of a fundamental nature in sciences relating to essential structure or function (i.e. biology, psychology, biochemistry, pharmacology, physiology, etc.)
[ ] (2) Studies for medical purposes, including veterinary medicine, that relate to human or animal disease or disorders.
[ ] (3) Studies for regulatory testing of products, for the protection of humans, animals, or the environment.
[ ] (4) Studies for the development of products or appliances for human or veterinary medicine, animal nutrition, animal reproduction and/or animal care**.**
[ ] (5) Education and training of individuals in post-secondary institutions or facilities.

Category of Invasiveness:

Refer to 'Categories of Invasiveness in Animal Experiments' (Appendix 1).
(Check the highest level.)

[ ] B [ ] C [ ] D [ ] E

3. LAY SUMMARY / PUBLIC RELATIONS (250 words maximum)

The Animal Emergency Management Committee for public relations purposes may use this information.
In LAY TERMINOLOGY, please provide concise summaries of the following information:

a) Research problem(s) or instructional principles(s) this project addresses (Background, Objectives, Methods)

b) Anticipated impact (specific), potential benefits to human and/or animal well-being (Relevance of Research or Instruction) [this should answer the why]

4. ANIMAL USE

For RESEARCH projects, is this a pilot / preliminary study? [ ] YES [ ] NO [ ] OTHER

a) List all animals involved in the study.

Quantity	Species /Strain	Weight/Age	Gender	Accommodation Building & Room	Experimental Area Building & Room (surgery or procedure rooms)

b) Explain how the total number of animals to be used was determined.

i.e. number of groups, replicates, etc. Attach a flow chart or table outlining total numbers e.g. 5 animals x 3 treatments x 2 replicates = 30 animals.

c) Indicate consideration given to reduce the use of animals.

i.e. minimize numbers and maximize education or research gain.

5. SOURCE of ANIMALS

Indicate the source(s) or supplier(s):

[ ] Animal Care Services [ ] Client owned [ ] Client Donated [ ] Wildlife/field studies [approvals required]

[ ] Colony / Herd / Stock* [ ] Teaching stock* [ ] Purchased (i.e. farms)*

*** [ ] Specified below (single source) OR [ ] appended (multiple sources):**

Source or Supplier	
Address / Location	
Phone Number	
Mode of Transportation	

6. ANIMAL MODEL

Explain the characteristics of the animal that make the species or strain appropriate for the research or teaching objectives, i.e. structural behavioural, physiological, biochemical or other features or considerations. Cost may not be used as a justification.

7. ALTERNATIVES

The Canadian Council on Animal Care requires that explicit reasoning be provided for the selection of an animal model over alternatives such as an <u>in vitro</u> biological system, a computer simulation, or mathematical model.

a) Explain the necessity of using animals in this study, and why alternatives (in-vitro and ex-vivo systems) **would be inappropriate to meet your project.** *The CCAC requires more than a simple statement that a replacement alternative is not available.*
b) Indicate any alternatives to animal use that are already incorporated into the project (in vitro & ex vivo systems).
c) Specify the environmental enrichment provisions, i.e. social housing, specific materials, space, objects etc. Refer to the Canadian Council on Animal Care's *'Social & Behavioural Requirements of Experimental Animals'*.**(Appendix 2)**, or CCAC Guide to the Care & Use of Experimental Animals.

8. PROCEDURES

a) List *<u>all</u>* procedures, restraint, manipulations, &/or measurements that will be performed on the animals. Indicate what measures will be taken to alleviate or minimize any pain, distress or discomfort. Include post-operative care, specify analgesics & anaesthetics with dosages and routes of administration, and special procedures used.

PROCEDURES **INCLUDING INJECTION OF COMPOUNDS, E.G. ANTIBIOTICS, EXPERIMENTAL CHEMICAL, ETC.**	**Animals involved in each procedure (species/strain & quantity)**	**Distress or Pain (B-E)***	**ANALGESIC / ANAESTHETIC**		
			Drug	Dosage	Route
1.					
2.					

* Indicate the Category for each procedure listed (refer to the Canadian Council on Animal Care's 'Categories of Invasiveness in Animal Experiments', Appendix 1).

b) Specify the criteria that will be used to assess the level of analgesia / anaesthesia required.

c) Give a ***sequential*** description of the use of animals in this research project.

9. ANIMAL CARE

a) List **all** the individuals who will carry out the above procedures. Provide their technical qualifications and relevant experience in performing these procedures.		
NAME	**PROCEDURE(S)TO BE PERFORMED**	**QUALIFICATIONS / EXPERIENCE WITH THESE PROCEDURES**

b) Specify the frequency of observations and methods for monitoring the condition of the animals. Refer to the above listed procedures, e.g. anaesthesia & surgery, as well as the daily routine observations planned.

c) Explain refinements that have been made to minimize pain, distress and/or discomfort to the animals, i.e. modified procedures.

10. END POINT

a) Indicate the disposition of the animals following this study:

Retained: ***(specify location)***	***Sold To:***	***Donated to:***	***Humanely euthanized:*** ***(specify method)***	***Other – specify:*** *If a physical method of euthanasia is to be used, i.e. cervical dislocation, justify its use.*

b) Indicate any clinical conditions or abnormalities *expected or that could arise* as a result of the proposed study or research project (e.g. behavioural changes such as increased grooming, vocalization or postural changes, or physical abnormalities such as anorexia, dehydration, diarrhea, etc.)

c) In terms of species-specific behavioural changes and physiological signs, what criteria will trigger the decision to 1. remove an animal from the research project; and or 2. terminate the project?

11. EMERGENCY VETERINARY CARE

IN THE EVENT OF AN ANIMAL HEALTH EMERGENCY, IF CONTACT CANNOT BE MADE WITH THE LISTED INDIVIDUALS, THE DECISION OF A CLINICAL VETERINARIAN WILL BE FINAL.

Is normal veterinary care appropriate for animals in this project?

[ ] YES

[ ] NO *Veterinary care is the responsibility of the facilities provided for the research*

If NO, attach specific instructions on any veterinary indications / contra-indications that are on file with the animal facility supervisor in case an emergency should arise.

12. HAZARDS:

TYPE:	SPECIFY AGENT:

Specify what special animal care is required because of the hazard(s) involved:

ADDITIONAL INFORMATION **required by the Canadian Council on Animal Care.**

For studies involving the following, additional forms must be completed as appendices to your Animal Utilization Protocol.

CHECK OFF ALL / ANY THAT ARE ATTACHED:

Appendix 1:	Categories of Invasiveness	[ ] Indicated above	[ ] Not required
Appendix 2:	Pegagogical Merit Review	[ ] Appended	[ ] Not applicable
Appendix 3:	Teaching / Display	[ ] Appended	[ ] Not applicable
Appendix 3:	Surgical Procedures	[ ] Appended	[ ] Not applicable

Animal Use Protocol- Research GPRC Fairview ANIMAL CARE COMMITTEE

APPENDIX 1 CANADIAN COUNCIL ON ANIMAL CARE

CATEGORIES OF INVASIVENESS IN ANIMAL EXPERIMENTS

THE FOLLOWING LIST OF CATEGORIES PROVIDES POSSIBLE EXAMPLES OF EXPERIMENTAL PROCEDURES WHICH ARE CONSIDERED TO BE REPRESENTATIVE OF EACH CATEGORY.

A. Experiments on most invertebrates or on live isolates.

Possible examples:

- 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.

Note: Animal Utilization Protocols are not required for projects involving 'A' Categories of Invasiveness.

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 skilful restraint of animals for purposes of observation or physical examination;
- blood sampling (venipuncture only, **not cardiac**);
- 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); (or intradermal);
- acute non-survival studies in which the animals are completely anesthetized and do not regain consciousness;
- approved methods of euthanasia following rapid unconsciousness, such as anesthetic overdose, or decapitation preceded by sedation or light anesthesia;
- short periods of food and/or water deprivation equivalent to periods of abstinence in nature;
- treadmill for normal horses;
- digital retrieval of feces from calves, dogs, horses;
- obtaining rumen fluid samples through rumen fistula of cows;
- dip-netting fish;
- weighing fish by mass;
- measuring fish e.g. length, width under anaesthetic;
- bleeding fish under anaesthetic;

- ear treatments/medication;
- implantation of hormone e.g. cattle;
- Rectal and AI for management purposes (not research);
- feeding electrolytes to colostrum deprived calves;
- cannulating teats of cows;
- intramammary infusion of mastitis medications;
- less than ~18 hour fasting period in rodents;
- leg banding;
- colostrum deprivation of calves;
- removing calves from cows at birth;
- clipping $\leq$ 1 mm. of tail of tadpoles.

C. Experiments which cause minor stress or pain of short duration.

Such procedures should not cause significant changes in the animal's appearance, in physiological parameters such as respiratory or cardiac rate, or fecal or urinary output, or in social responses.

Possible examples:

- cannulation or catheterization 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;
- nose bars in birds;
- wingbanding in birds;
- intravaginal examinations;
- vaginal swabs;
- induction of general anaesthesia in horses;
- intubation;
- periorbital bleeding in pigs without anaesthetic; periorbital bleeding in other species under anaesthetic;
- pesseries in cows and sheep (intravaginally);
- ultrasound (per rectum);
- cervical dislocation of rodents without sedation; also chickens, turtles;
- decapitation of small rabbits and rodents;
- nylon bags incubated in rumen fistulated cattle;
- eartagging;
- intradermal injections (ID injections) unless a significant inflammatory reaction will occur;
- gavage/orogastric tubing; stomach tubing;
- swim mills for fish;
- measurement (length and width) of individual fish without anaesthetic;
- tagging fish under anaesthetic;
- electroshocking fish;

- >24 hour fast for large mammals;
- > 18 hour fast for mice/rats;
- FCA, RIBI, titremax, Quil A if the adjuvant/antigen combination has few deleterious effects;
- castration;
- beak trimming;
- teeth clipping (piglets);
- tattooing;
- removal of calves from dams at birth (no suckling);
- multiple rectal examinations;
- metabolic caging if it is short term and animals are exercised regularly, do not show signs of distress and have olfactory, visual and auditory contact with conspecifics;
- delayed type hypersensitivity;
- Alzec (osmotic) pump;
- microchipping (<2mm diameter);
- euthanasia of young piglets using intracardiac injection of pentobarbital;
- dehorning calves with Lidocaine or other topical.

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.

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 sings of severe or advanced local or systemic infection, etc.

Possible examples:

- major surgical procedures conducted under general anesthesia, with subsequent recovery;
- prolonged (several hours or more) periods of physical restraint;
- indication 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 (see CCAC Guidelines on Acceptable Immunological Procedures);
- 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;
- Ascites production;

- creation of transgenic animals before phenotype is known;
- metabolic caging of longer duration or where animals are in isolation;
- subcutaneous xenotransplantations;
- laparotomy e.g. ovariectomy;
- FIA, RIBI, Quil A may be categorized as a "D" until the effects on animal welfare can be recorded;

E. Procedures which cause severe pain near, at, or above the pain tolerance threshold or unanesthetized conscious animals.

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).

Revised (CCAC) February 1991
Revised Draft March 2014 PJ

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Appendix 2 – CANADIAN COUNCIL ON ANIMAL CARE
TEACHING / DISPLAY COMPONENT of the RESEARCH PROJECT (if yes then complete this section)

Please attach the course outline, ***laboratory exercise notes or lab manual(s)*** *and any other relevant information pertaining to animal care and use.*

Comment briefly on:

1. the advantages of using live animals or animal preparations over a demonstration, film, videotape, computer simulation or other model.

2. how you are maximizing the educational gain from the animals used.

3. the on-site supervision provided for the participant working on animals during the laboratory.

4. the expected number of participants.

5. the number of participants per animal or group of animals.

6. the participant / instructor ratio.

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Appendix 3 – CANADIAN COUNCIL ON ANIMAL CARE
SURGICAL PROCEDURES:

Provide a description of the preparative regimen which includes:

1. the patient preparation procedures.

2. the details on pain/distress management throughout the project.
   Note: Analgesics should be given to animals prior to recovery from anaesthesia & for a minimum of 24 hours following surgery. Thereafter, the animal(s) will be assessed and if there is continuing pain or distress, analgesics will be continued in conjunction with appropriate care.

3. the antibiotic to be administered (dosage and route).

4. if applicable, the ventilation procedures.

5. instrumentation of the animal(s), such as IV lines, catheters, etc.

6. the type of monitoring during and following surgery.

7. a brief technical description of the surgical procedure(s).