Institutional Animal Care and Use Committee (IACUC)
Animal Use Protocol Form

IACUC DATE STAMP: Shaded Areas for IACUC use only.	PROTOCOL NUMBER:
APPROVAL DATES:	MODIFICATION DATE(S):
Date Filed:	
Approval:	
1st Renewal:	
2nd Renewal:	

PROTOCOL SUMMARY

PROTOCOL TITLE

PRINCIPAL INVESTIGATOR (PI) NAME AND ADDRESS

First Name:		Department:	
Last Name:		Phone Number:	
WPI ID Number:		Email Address:	
Campus Address:			

PROJECT PERSONNEL

NAME(S) of all individuals involved in project	**ROLE IN PROJECT** (Indicate who will do euthanasia, anesthesia, surgery, and any other non-surgical procedure).

STUDENT STATUS (COMPLETE THIS SECTION IF PI IS A STUDENT)

Status (Graduate/Undergraduate):	
Faculty Sponsor/Supervisor Name:	

Sponsor/Supervisor's Signature:		Date:	

TYPE OF SUBMISSION (CHECK ONE) AND PROVIDE RELATED IACUC NUMBERS

		(Not applicable for new protocols)
	New Protocol	
	Replacement for IACUC Protocol #	
	Year 3 Renewal of IACUC Protocol #	
	Salary Support/Fellowship-related IACUC #	
	Identical to IACUC Protocol #	

FUNDING SOURCE(S):

PROJECT START DATE: **PROJECT END DATE:**

SPECIES

	COMMON NAME AND STRAIN	#/YR	EST. PROJ. TOT.	PROCEDURES: Check ALL that apply (See below for corresponding *List of Procedures*) a	b	c	d	e	f	g	h	i	j	k	l	m	z	USDA PAIN LEVEL
1																		
2																		
3																		
4																		
5																		

LIST OF PROCEDURES:

a. Survival Surgery
b. Non-survival Surgery
c. Multiple Survival Surgery
d. Prolonged Restraint
e. Collection of Cells, Tissues, or Organs
f. Aversive Conditioning
g. Special Diet
h. Food / Water Deprivation
i. Biohazard (i.e. Radioisotopes, Infectious Agents, Toxin/Mutagen/Carcinogen, Recombinant DNA)
j. Burns or Trauma
k. Drugs
l. Antibody production
m Diagnostic X-rays
z. Other (Specify:)

USDA PAIN LEVELS: 1 = negligible, **2** = pain/distress avoided by appropriate drug use, **3** = pain/distress NOT avoided by appropriate drug use. (Level 3 procedures require appropriate documentation and justification)

FACILITY AND ROOM # WHERE PROCEDURES WILL TAKE PLACE (IF MULTIPLE, SO INDICATE)

PROPOSED FACILITY WHERE ANIMALS WILL BE HOUSED (MUST BE AN IACUC APPROVED FACILITY)

SPECIAL CONDITIONS / SITUATIONS	YES	NO
Housing Outside of the Central Animal Facility for More than 12 Hours (in a Study Area)		
Teaching / Training Protocol (If YES, complete "Teaching/Training Protocol" section in this packet)		
Will animals require care above the standard care levels (i.e. frequent cage changing; frequent monitoring, special bedding, etc.) Consult with the Vivarium Director to determine if additional costs are associated with this level of care.		

DRUG USE SUMMARY

ANALGESICS / ANESTHETICS

	GENERIC NAME	SPECIES	DOSE (MG/KG)	ROUTE
1				
2				
3				
4				
5				
6				

SEDATIVES / TRANQUILIZERS

	GENERIC NAME	SPECIES	DOSE (MG/KG)	ROUTE
1				
2				
3				

ANTIBIOTICS

	GENERIC NAME	SPECIES	DOSE (MG/KG)	ROUTE
1				
2				
3				

MISCELLANEOUS AND OTHER DRUGS (INCLUDING IV FLUIDS)

	GENERIC NAME	SPECIES	DOSE (MG/KG)	ROUTE
1				
2				
3				
4				

EUTHANASIA METHOD(S) / DRUG(S)

	EUTHANASIA METHOD / GENERIC DRUG NAME	SPECIES	DOSE (MG/KG)	ROUTE
1				
2				
3				
4				
5				
6				

Note: All drugs used on animals before, during, or after an experiment or surgical procedure must be obtained from legal sources. All controlled substances should be kept in a double-locked compartment. Records should be kept documenting each use of a controlled substance. USE ONLY DRUGS THAT ARE WITHIN THEIR EXPIRATION DATE. All drugs should be disposed of properly when out of date or no longer needed. This applies to IV fluids as well.

PRINCIPAL INVESTIGATOR'S ASSURANCE

READ CAREFULLY, THEN SIGN AND DATE BELOW

I have provided an accurate description of the proposed animal care and use protocol and agree to the following conditions:

All experiments involving live animals will be performed under my supervision or that of other qualified individuals as indicated on this form. The personnel involved have been, or will be, trained prior to any animal work in proper procedures of animal handling, administration of anesthetics and analgesics, and the AVMA recommended methods of euthanasia to be used in this project.

No animal will be used in more than one major operative procedure from which it is allowed to recover, unless scientifically justified or required as a veterinary procedure. Paralytics will not be used without appropriate anesthesia. Medical care for animals will not be withheld and will be available and provided or supervised as necessary by a veterinarian. Animals that would otherwise experience severe or chronic pain/distress that cannot be relieved will be euthanized at the end of the procedure or, if appropriate, during the procedure.

I agree to report all animal purchases to the WPI Institutional Animal Care and Use Committee (IACUC) and to purchase only those animals approved for use and only up the maximum allowed by the IACUC. I understand that a failure to report all animal purchases to IACUC or to exceed the maximum number allowed is a violation and may result in the suspension of my approved protocol.

All personnel will be informed that any concerns for inhumane care and treatment of animals or unlawful acts involving animals should be reported to the IACUC and that anyone reporting such concerns cannot be discriminated against or be subject to any reprisal for reporting their concerns. Contact information for reporting, including names and telephone numbers, can be found at http://www.wpi.edu/Admin/Research/IACUC/.

I agree to abide by governmental regulations and WPI policies concerning the use of animals.

I will ensure that veterinary care is provided to animals showing evidence of pain or illness.

I agree to give consideration to tissue sharing and will do so whenever possible.

I certify that any animal use proposed in a grant or contract proposal to support this research corresponds to the information provided herein.

If the procedures concerning animal use in this research activity are to be revised or changed, I will so notify the IACUC of these changes before the change is implemented. I understand that failure to request an amendment for changes in animal use may place WPI and myself in violation of Federal regulations and the Animal Welfare Act.

As required by Federal regulations, I assure that the activities described do not unnecessarily duplicate previous experiments and I assure the animal models proposed are the most appropriate for achieving the objectives of this project and have provided justification for each model used in the protocol (Animal Research Plan Rationale below).

Principal Investigator Signature:		**Date:**	

CONFIRMATION OF SCIENTIFIC / INSTRUCTIONAL MERIT REVIEW

Before any project utilizing animals can be initiated, it must be reviewed and approved based on scientific or instructional merit. To assure the IACUC that this review is in place, the following information is needed regarding the review process that is applicable for this protocol. (**check one of the two boxes below far left**).

☐ This project will only be initiated after it has been peer-reviewed outside of WPI (e.g. NIH, NSF, etc.) or within WPI by a formal *inter*departmental review group. If so, identify which group, agency or board has reviewed or will review this project for scientific or instructional merit. (Note: a signature is not required if you checked this box)

Name of Review Agency, Committee, or Board:

OR

☐ This project is 1) ONLY being reviewed *within* a department; or 2) you would like to initiate the project prior to receipt of an extramural award notice. If so, the chairperson of your department must attest to the scientific or instructional merit of this project. Please have him/her sign below on the signature line and indicate who conducted the review (**check one of the two boxes below**):

☐ **Departmental Committee**

Name of Committee

Name of Committee Chairperson or Official Designee

OR

☐ **Other Review Process**

Describe Review Process

Name of Department Chairperson

Department Chairperson Signature: **Date:**

ANIMAL RESEARCH PLAN

PROJECT OVERVIEW / OBJECTIVE

PROTOCOL SYNOPSIS / EXPERIMENTAL PLAN

RATIONALE, APPROPRIATENESS, ALTERNATIVES, AND NUMBERS

VERY BRIEFLY STATE THE OBJECTIVE(S) AND POTENTIAL SIGNIFICANCE OF THE ACTIVITIES INVOLVING ANIMAL USE (EXPLAIN WHY ANIMALS ARE REQUIRED FOR YOUR STUDIES)

LIST EACH SPECIES SELECTED AND DISCUSS ITS APPROPRIATENESS

DISCUSS THE APPROPRIATENESS OF THE NUMBER OF ANIMALS TO BE USED

SUMMARIZE THE EXPERIMENTAL DESIGN IN A SIMPLE TABLE OR OTHER FORM THAT CLARIFIES HOW THE GROUPS, TIME FRAMES, AND TOTALS OF ANIMAL USED ARE BROKEN DOWN

DESCRIBE HOW YOU WILL PREVENT OR MINIMIZE PAIN OR DISCOMFORT TO THE ANIMALS THROUGH THE USE OF ANESTHETICS, ANALGESICS, SUPPORTIVE CARE, OR REFINEMENT OF INVASIVE TECHNIQUES

DISCUSS HOW HAVE YOU DETERMINED THAT YOUR PROPOSED RESEARCH DOES NOT UNNECESSARILY DUPLICATE PREVIOUS EXPERIMENTS (FOR USDA PAIN LEVEL 2 OR 3, ADDITIONAL JUSTIFICATION IS REQUIRED IN THE SECTION TITLED "JUDICIOUS USE OF ANIMALS")

JUDICIOUS USE OF ANIMALS

DOES THIS PROJECT INVOLVE PROCEDURES THAT MAY CAUSE MORE THAN MOMENTARY OR SLIGHT PAIN OR DISTRESS TO ANIMALS? (USDA PAIN LEVEL 2 OR 3. IF YES, COMPLETE BELOW)	YES	NO

DATABASE(S) SEARCHED, INCLUDING THE DATE RANGE OF THE SEARCH AND THE DATE SEARCH WAS DONE

KEYWORDS USED

BRIEF NARRATIVE DESCRIPTION OF SEARCH THAT LED YOU TO BELIEVE THAT NO ALTERNATIVE WAS AVAILABLE

ARE "WHOLE LIVE ANIMALS" REQUIRED FOR THIS PROJECT RATHER THAN ALTERNATIVES, SUCH AS CULTURED CELLS? (IF YES, PROVIDE A BRIEF EXPLANATION OF WHY BELOW)	YES	NO

ANIMAL TRACKING (PURCHASE, HOUSING, USAGE, AND OUTCOME)

ANIMAL PURCHASE

Source or vendor used for animal purchase or acquisition:

Evidence or assurances of animal's health status:

ANIMAL HOUSING IN THE CENTRAL ANIMAL FACILITY

Will animals be housed for more than 12 hours in the Central Animal Facility (Gateway Vivarium)? (If YES, complete below) — YES ☐ NO ☐

How long is the quarantine period?

How long is the stabilization period?

How long will the animals be housed (estimate)?

LOCATION OF ANIMAL USE

Will animals be used in the Central Animal Facility (Gateway Vivarium)? (If YES, skip forward to section titled "Animal Outcome") — YES ☐ NO ☐

Will animals be used (but not housed) in a laboratory outside of the animal facility? (If YES, complete below and then skip forward to section titled "Animal Outcome") — YES ☐ NO ☐

Building:

Room:

Duration:

Frequency:

Method of transportation (include safety precautions for animals and personnel):

Will animals be housed (more than 12 hours) and used in a study area? (If YES, complete below) — YES ☐ NO ☐

Building:

Room:

Duration:

Frequency:

Method of transportation (include safety precautions for animals and personnel):

Who provides husbandry:

ANIMAL OUTCOME

Will the animal survive the research with no harm (#1)? (If YES, complete below) — YES ☐ NO ☐

Will the animals be used in another protocol? (If YES, indicate protocol number and PI) — Yes ☐ No ☐

Protocol #: PI:

Will the animals be adopted? (If YES, indicate arrangements that have been made, including the use of appropriate animal adoption forms) — Yes ☐ No ☐

STOP: Skip forward to section titled "Anesthesia"

Will animal be euthanized at the end of the research (#2)? (If YES, complete below) — YES ☐ NO ☐

Describe and justify the procedure for euthanasia:

How will death be determined:

STOP: Skip forward to section titled “Anesthesia”.

Will death be the endpoint, i.e. animal will be in experiment until its death (#3)? (If YES, complete below) YES NO

Briefly justify why death is the end point rather than euthanasia:

Will euthanasia ever be considered or is there any other condition or stage (such as "moribund") at which euthanasia will be performed? (If YES, explain below) Yes No

What sign is the animal expected to exhibit as it goes through the terminal stages?

What measures can be taken to alleviate pain (e.g. analgesics)? (If NONE, please justify)

Who will observe the animal during the terminal stages?

What will be the frequency of observation?

ANESTHESIA

YES NO

Will animals be anesthetized?

(If NO, explain why not below)

(If YES, complete below)

Who will administer the anesthesia:

What anesthetic will be used and how:

Who will fill out the anesthesia record:

Who will monitor recovery (if allowed to recover):

Explain anesthetic recovery monitoring (if applicable):

DISPOSITION OF SICK OR INJURED ANIMALS

YES NO

Should the PI be called? (If YES, complete below)

Work Phone Home/Cell Phone

Alternate person is Home/Cell Phone

In case of an emergency, should the Veterinarian or staff treat the animals? (If NO, information and justification must be included above in section titled “Animal Outcome“. If YES, explain any restrictions on treatment below.) YES NO

DISPOSITION OF DEAD ANIMALS / TISSUES

YES NO

Call investigator?

Comments:

Necropsy special instructions (All unexpected deaths require necropsy)

YES NO

Refrigerate carcass?		
Freeze carcass?		
Bag for disposal?		
Other? (If YES, explain below)		

PAIN, DISTRESS, AND SUFFERING

CONSIDERATION OF PAIN, DISTRESS, AND SUFFERING

What pain or distress is anticipated? (Be explicit and include potential for pain or distress while under anesthesia)

The PI, the project personnel, and the IACUC must observe for the following signs of pain or distress:

* Loss of appetite
* Loss of weight
* Failure to groom, causing an unkempt appearance
* Loss of mobility
* Guarding (protecting the painful area)
* Abnormal resting postures in which the animal appears to be sleeping or is hunched up
* Restlessness
* Teeth grinding
* Licking, biting, scratching, or shaking a particular area
* Vocalizing
* Failure to show normal patterns of inquisitiveness

	YES	NO
Are there other signs that will be used to assess pain and distress? (If YES, explain below)		

PAIN / DISTRESS CARE

	YES	NO
All animals must be observed on a daily basis in the animal care facilities and laboratories.		
Does this protocol require special observation?(If YES, complete below)		

Frequency:

By whom:

Beginning:

Ending

	YES	NO
Will the WPI Veterinarian NOT be notified if UNANTICIPATED pain, distress, or suffering occurs? (If YES, explain below)		
Will other actions be taken? (If YES, complete below)		

What actions will be taken:

By whom:

When:

	YES	NO
Will drugs or other pain relieving methods be used for the relief of pain or distress?		

If YES, list on the Drug Use Summary page. If NO [i.e. drugs WILL NOT BE USED for one or more procedures involving potential pain], provide a brief statement describing the painful procedure(s) and explain and fully justify why pain-relieving methods, including administration of analgesics, are believed to be inappropriate.

ANIMAL SURGERY INFORMATION

YES NO

Does this protocol involve ANY type of surgical procedure(s)?

Surgical procedures include non-survival, single-survival, and multiple-survival surgeries. If YES, complete below. (Anesthetic induction is NOT normally considered a surgical procedure)
If NO, skip forward to section titled "Animal Use Procedures"

Where:

PRE-OPERATIVE PROCEDURES

Describe how animals will be prepared for surgery:

YES NO

Do you plan to use specially modified animals (e.g. diabetics)? (If YES, complete below)

Justify:

Who is the person responsible for evaluating the health status of these animals:

YES NO

Pre-operative anesthetics? (If YES, list both below and in the "Drug Use Summary" section)

YES NO

Will food be withheld? (If YES, complete below)

Explain:

How long:

Why:

OPERATIVE PROCEDURE

Approach:

Procedure:

Closure:

List any organ(s) or tissue(s) involved:

Who will fill out the Operative Report:

POST-OPERATIVE PROCEDURES / SURVIVAL SURGERY

YES NO

Will the animal survive the surgical procedure? (If YES, complete below)

Who will keep the post-operative record:

Veterinarian / Individual who will monitor care:

Who will observe and care for the animal daily:

Who will administer post-operative analgesia:

What analgesia will be given:

When will post-operative analgesia begin:

How often will post-operative analgesics be given (specify times):

When will sutures be removed:

Will an individual animal be subjected to more than one survival surgery? (If YES, explain below how surgeries are related and justify the scientific need for more than one surgery per animal) YES NO

ANIMAL USE PROCEDURES

COLLECTION OF CELLS, TISSUES, AND ORGANS

YES NO

Blood Sampling? (If YES, complete below)

Technique:

Site:

Volume:

Frequency:

YES NO

Urine/Feces Sampling? (If YES, complete below)

Method:

Frequency:

Duration:

YES NO

Collection of tissue(s) BEFORE euthanasia? (If YES, complete below)

Tissues:

To Protocol No.:

By Whom:

Method of Disposal:

YES NO

Collection of tissue(s) AFTER euthanasia? (If YES, complete below)

Tissues:

To Protocol No:

By Whom:

Method of Disposal:

BEHAVIORAL / RESTRAINT / DIETARY

YES NO

Behavioral testing of animals? (If YES, complete below)

Describe the procedure, including any use of noxious stimuli:

YES NO

Brief physical OR prolonged restraint of animals? (If YES, complete below) YES NO

Brief physical restraint or induction of stress in animals for examination, collection of samples, and a variety of other clinical and experimental manipulations can be accomplished manually or with devices such as restraint stocks or squeeze cages. It is important that such devices be suitable in size and design for the animal and operated properly to minimize stress and avoid injury to the animal. Prolonged restraint or induction of stress in any animal, including the chairing of non-human primates, should be avoided unless essential to the research objectives.

Explain rationale for use of restraint or induction of stress:

Describe the device and include dimensions or other specific features. Include pictures or diagrams if available (May be attached separately):

Duration the animal will be confined to the device each time:

Frequency animal will be confined to the device:

Observation intervals during confinement:

Qualified faculty or staff making the observations:

Name: Phone:

Will pain or discomfort be induced? (If YES, describe in detail below) YES NO

Will analgesics, sedatives or tranquilizers be used to provide additional restraint? (If YES, describe in detail below) YES NO

Will electrical or other forms of stimulation, including light and sound, be used to modify animal behavior? (If YES, describe in detail below) YES NO

Will food be withheld for 24 hours or more? (If YES, describe in detail below) YES NO

Will water be withheld for 12 hours or more? (If YES, describe in detail below) YES NO

Will a special diet be used (nutritional deficit / supplementation)? (If YES, complete below) YES NO

Describe anticipated nutritional deficit/supplementation:

Reason for and treatment of deficit/supplementation:

How long will the diet be used:

How will the general well-being of the animal be determined:

How often will animals be weighed:

How much weight change will be permitted before the study is terminated:

PROCEDURES AND IMPLANTS

Administration of agents, other than anesthetics or analgesics, such as: drugs / reagents / cells, etc.? (If YES, complete below and in the "Drug Use Summary" section) YES NO

Agent:

Route:

Frequency:

Side Effects:

Treatment:

Needle Size:

Volume of Injection:

	YES	NO
Indwelling catheters or implants? (If YES, complete below)		

Size:

Type:

Maintenance:

Duration:

	YES	NO
Tumor Transplantation? (If YES, complete below)		

Anticipated functional deficit:

Treatment:

Monitoring:

End Point:

	YES	NO
Other procedures not covered above? (If YES, explain below)		

TEACHING / TRAINING PROTOCOL

	YES	NO
Is this protocol for teaching / training / or education? (If YES, complete below)		

Check all that apply:

- [ ] Undergraduate students
- [ ] Graduate students
- [ ] Course # / Title
- [ ] Only dead animals or tissues obtained through euthanasia by the PI
- [ ] Non-survival surgery (complete the section titled “Animal Surgery Information”)
- [ ] Demonstration only by PI
- [ ] Student involvement - live animal observation and handling
- [ ] Student involvement - exposure to research
- [ ] Student involvement - gain skills, more than just handling (Explain below)
- [ ] Other (Explain below)

HAZARDOUS AGENTS

	YES	NO
Will hazardous agents be used? (If YES, complete all below to section titled "Antibodies")		

Study Involves (Check ALL that apply):

- [ ] Radioactive Materials
- [ ] Infectious Agents (pathogenic to human or animal)
- [ ] Acute Toxins
- [ ] Known or suspect chemical carcinogens or mutagens
- [ ] Recombinant DNA/RNA
- [ ] Other (Describe)

STATUS OF REVIEW by the appropriate Hazards Committee(s) (Attach approval(s))
(If pending approval, a copy must be submitted as soon as approval is obtained)
Committee Name(s) Approval date(s)

Identify Agent(s)

Agents(s):

Species:

Dose (Volume):

Route:

Needle Size:

Frequency:

	Yes	No
Are there risks to humans? (If YES, complete below)		

Method of exposure:

Signs/Symptoms:

Treatment:

Protection:

	Yes	No
Are there risks to other animals in the room or animal facility? (If YES, complete below)		

Method of exposure:

Signs:

Treatment:

Protection:

Describe experimental procedures involving hazardous agents

Is the duration of use of hazardous agents the same as the total project duration? (If YES, complete below) Yes No

Start Date | Stop Date

Is there special animal care required relating to the use of hazardous materials? (If YES, describe below) Yes No

Are there special containment facility requirements? (If YES, describe below) Yes No

Are there waste and animal disposal requirements? (If YES, describe below) Yes No

ANTIBODY INFORMATION

Complete this section only if antibodies will be produced.

POLYCLONAL ANTIBODIES

YES NO

Will polyclonal antibodies be produced? (If YES, complete below)

Explain:

Animal(s) to be used (list all species):

Approximate number of antibodies per year:	
Approximate number of animals needed per antibody:	
TOTAL number of animals requested per year:	

Statistical justification of the TOTAL number:

MONOCLONAL ANTIBODIES

YES NO

Will monoclonal antibodies be produced? (If YES, complete below)

Explain:

Animal(s) to be used (list all species):

Approximate number of antibodies per year:	
Approximate number of animals needed per antibody:	
TOTAL number of animals requested per year:	

Statistical justification of the TOTAL number:

IMMUNIZATION PROCEDURES

YES NO

Will you immunize animals? (If YES, complete below)

Explain the procedure:

Yes No

Will Freund's Complete Adjuvant be used? (If YES, complete below)

Justify:

Site:

Site preparation:

Number of sites:	
Route:	
Total volume:	
How many times:	

Yes No

Will Freund's Incomplete Adjuvant be used? (If YES, complete below)

Justify:

Site:

Site preparation:

Number of sites:	
Route:	
Total volume:	
How many times:	

Will media other than Freund's Complete Adjuvant be used, such as Ribi or Hunter TiterMax? (If YES, complete below) Yes ☐ No ☐

Name:

Site:

Site preparation:

Number of sites:	
Route:	
Total volume:	
How many times:	

ANTIBODY POST-PROCEDURE CARE

Will post-procedure care be required? (If YES, complete below) YES ☐ NO ☐

Who will provide care:

What post-procedure care is required:

When will post-procedure care be given:

What analgesics will be given? (If none, explain)

What will be the endpoint:

ANTIBODY COLLECTION PROCEDURES

Will a chemical restraint be used? (If YES, complete below) YES ☐ NO ☐

Generic name of drug:	
Dose:	
Route:	
Frequency:	
Who:	

Will blood be collected prior to death? (If YES, complete below) YES ☐ NO ☐

Method:	
Frequency:	
Total number of collections:	

If ascites occurs, will fluids be removed from the abdomen prior to death? (If YES, complete below) YES ☐ NO ☐

Method:	
Frequency:	
Total number of collections:	

Describe and fully justify what anticipated unalleviated pain, stress, or discomfort may be expected to be associate with antibody production and collection