

Vertebrate Animal Project Guidelines

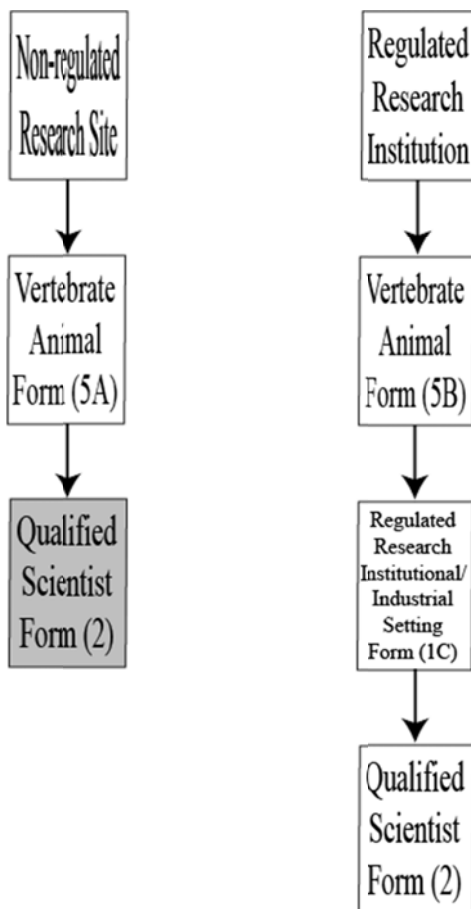
CSEF strongly encourages Student Researchers to use alternatives to animal research if at all possible. If the use of vertebrate animals is absolutely necessary, Student Researchers must follow **federal guidelines** to protect the welfare of both the animal subjects and the Student Researcher(s). When students conduct research with animal subjects, health and well-being are of the highest priority.

Vertebrate animals are defined as:

- Live, nonhuman vertebrate mammalian embryos or fetuses;
- Tadpoles;
- Bird and reptile eggs within three days (72 hours) prior to hatching; and
- All other nonhuman vertebrates (including fish) at hatching or birth.

One exception to these guidelines are zebrafish. Because of their delayed cognitive neural development, zebrafish embryos are not considered vertebrate animals until 7 days (168 hours) post-fertilization.

Note: A project is considered a tissue study and NOT a vertebrate animal study if the tissue is obtained from an animal that was euthanized for a purpose OTHER THAN the Student Researcher's project. In these cases, Student Researchers may observe the vertebrate animal study, but may not have any direct involvement with the vertebrate animal experimental procedures. See the guidelines regarding Tissue studies on page 30.



ALL vertebrate animal studies must be reviewed and approved before experimentation begins by the appropriate review board: IACUC (Institutional Animal Care & Use Committee for studies done at a research institution) or SRC (Scientific Review Committee for studies done in a school, home or field setting). The ONLY exception to this is as follows in regards to behavioral observations.

Studies involving behavioral observations of animals are exempt from prior SRC review as long as ALL of the following apply:

- There is NO INTERACTION with the animals being observed;
- There is NO MANIPULATION of the animal's environment in any way; AND
- The study meets all federal and state agriculture, fish, game and wildlife laws and regulations.

ALL Vertebrate Animal Study Guidelines

The following are various guidelines that may or may not apply to a student's project.

- Student Researchers must include ALL parts (a-e) of the Vertebrate Animals Research Plan requirements found on page 9.
- Student Researchers performing vertebrate animal research must follow US federal laws as well as local and state laws and regulations of the jurisdiction in which the research is performed.
- ALL vertebrate animal studies require the DIRECT supervision of a Qualified Scientist/Mentor or Designated Supervisor (except for observational studies).

- Once the study has been approved, a Student Researcher with any proposed changes to the methods and/or procedures must repeat the review process before continuing with data collection/experimentation.
- Student Researchers are PROHIBITED from designing or participating in any experiment associated with the following types of studies on vertebrate animals:
 - Those which cause more than momentary or slight pain or distress;
 - Those that induce toxicity with known toxic substances that could cause pain, distress or death; including, but not limited to alcohol, acid rain, pesticides or heavy metals;
 - Those using conditioning with aversive stimuli, mother/infant separation or induced helplessness; AND
 - Those involving predator/prey interactions.
- All animals must be monitored for signs of distress. One sign of stress is significant weight loss. The maximum permissible weight loss or growth retardation (as compared to the controls) of any experimental or control animal is 15%.
- Any illness or unexpected weight loss must be investigated and a veterinarian consulted to receive required medical care. This investigation must be documented by the Qualified Scientist/Mentor or a veterinarian. **If the illness or distress is found to be caused by the study, the experiment must be terminated IMMEDIATELY.**
- Studies that are designed or anticipated to cause vertebrate animal death are PROHIBITED.
 - ANY death of a vertebrate animal subject that occurs must be investigated by a veterinarian or Qualified Scientist/Mentor to determine the cause of death. The project MUST BE SUSPENDED until the cause of death is determined and the results of the investigation must be in writing.
 - **If the cause of death was due to the experimental procedure, the study MUST BE TERMINATED IMMEDIATELY and the project will not qualify for science fair competition.**
- Justification is required for any experiment design that involves food or fluid restrictions and must be appropriate to the species. These studies MUST be conducted at a regulated research institution and reviewed and approved by their IACUC.
- Animals may not be captured from or released into the wild without documented approval of authorized wildlife officials. All appropriate methods and precautions must be used to decrease stress to the animal.
- Fish may be obtained from the wild only if the Student Researcher(s) releases the fish unharmed, has the proper license and adheres to state, local and national fishing laws and regulations. Students are prohibited from performing electrofishing.
- A veterinarian must supervise Student Researcher administration of any prescribed drugs to vertebrate animals.

Animal Care

Animals must be treated kindly and cared for properly.

- Animals must be housed in a clean, ventilated, comfortable environment appropriate for the species.
- Animals must be given a continuous, clean water and food supply.
- Cages, pens and fish tanks must be cleaned frequently.
- Proper care must be provided at all times, including weekends, holidays and vacation periods.
- Animals must be observed daily to assess their health and well-being.
- A Designated Supervisor is required to oversee the daily husbandry of the animals.

Guidelines for Studies Conducted at a School, Home or Field Site

Vertebrate animal studies that may be conducted at a home, school, farm, ranch, field setting, etc. include:

- Studies of animals in their natural environment;
- Studies of animals in zoological parks;
- Studies of livestock that use standard agricultural practices; and
- Studies of fish that use standard aquaculture practices.

These projects must adhere to BOTH of the following:

- The research involves only agriculture, behavioral, observational or supplemental nutritional studies on animals.

AND

- The research involves only non-invasive and non-intrusive methods that do not negatively affect an animal's health or well-being.

Vertebrate animal studies that do not meet the above guidelines MUST be conducted at a Regulated Research Institution and reviewed and approved by their IACUC.

The local SRC must determine if a veterinarian's review and certification of the research plan and animal husbandry is required prior to experimentation. A veterinarian must certify experiments that involve supplemental nutrition, administration of prescription drugs and/or activities that would not be ordinarily encountered in the animal's daily life.

Studies in which livestock or fish are being raised for food using standard agricultural practices are allowed. The livestock or fish raised may be euthanized by a qualified adult for carcass evaluation. Euthanasia for tissue removal and/or pathological analysis is not permitted for a project conducted in a school, home or field site setting.

Guidelines for Studies Conducted at a Regulated Research Institution Site

A Regulated Research Institution is defined as a professional research/teaching institution that is regularly inspected by the USDA and is licensed to use animals covered by the Animal Welfare Act and may also be subject to the US Public Health Service Policy. Also included are all federal laboratories such as National Institutes of Health, Veteran's Affairs Medical Centers and the Centers for Disease Control. In addition, pharmaceutical and biotechnology companies and research institutions that utilize research animals that are not covered by the Animal Care and Use Act, but have an operational IACUC and are in compliance with US federal laws are included in this definition.

There are some protocols that may be permitted in a Regulated Research Institution, but are not permitted by Student Researchers. These include:

- Student Researchers are prohibited from performing euthanasia. Euthanasia at the end of experimentation for tissue removal and/or pathological analysis is permitted when done by the Qualified Scientist/Mentor or Designated Supervisor. All methods of euthanasia must adhere to current American Veterinarian Medical Association Guidelines.
- Studies that cause more than momentary or slight pain or distress to vertebrate animals are prohibited unless approved anesthetics, analgesics and/or tranquilizers are used by the Qualified Scientist/Mentor or Designated Supervisor.
- Research in nutritional deficiency or research involving substances or drugs of unknown effect are permitted to the point that any clinical sign of distress is noted. If distress is observed, the project must be suspended and measures taken to correct the deficiency or drug effect. Only when the appropriate steps are taken to correct the causing factors may the project resume.

Vertebrate Animal Form (5A) – Middle School

This form is only required for projects involving vertebrate animals being conducted in a school, home or field research setting and **MUST** be completed and approved by the SRC PRIOR to experimentation.

To be completed by the Student Researcher(s) in collaboration with the Adult Sponsor, Designated Supervisor and/or Qualified Scientist/Mentor. All questions **MUST** be answered and additional pages may be attached.

1. Student's Name(s): _____
2. Project Title: _____
3. Common name (or Genus, species) and number of each animal used.
4. Describe in detail the housing and husbandry to be provided for each type of animal. Include the cage/pen size, number of animals per cage, environment, bedding, type of food, frequency of food and water, how often animal is observed, etc.
5. What will happen to the animals after experimentation?
6. If applicable, attach a copy of wildlife licenses or approval forms.

The CSEF Vertebrate Animal Rules require that ANY death, illness or unexpected weight loss be investigated, explained, and documented by a letter from the qualified scientist, designated supervisor or veterinarian. Attach this letter to this form when submitting paperwork to the SRC prior to competition. ***If the death, illness or unexpected weight loss is found to be due to the experiment, then it must be terminated IMMEDIATELY.***

To be completed by the local or school Scientific Review Committee PRIOR to experimentation.

The SRC has carefully reviewed this study and finds it is an appropriate study and may be conducted in a non-regulated research site. The Student Researcher(s) **MUST** have at least the following level of supervision (mark highest level required):

- Designated Supervisor **REQUIRED**. Please have applicable person sign in the appropriate box below.
- Veterinarian and Designated Supervisor **REQUIRED**. Please have the applicable people sign in the appropriate boxes below.
- Veterinarian, Designated Supervisor and Qualified Scientist/Mentor **REQUIRED**. Please have the applicable people sign in the appropriate boxes below and complete a Qualified Scientist/Mentor Form 2.

SRC Chair's Printed Name

SRC Chair's Signature

Date of Approval (mm/dd/yy)

Veterinarian

- I have reviewed this research plan and animal husbandry with the student(s) **PRIOR** to the start of experimentation.
- I have approved the use and dosages of prescription drugs and/or nutritional supplements (if applicable).
- I will provide veterinary medical and nursing care in case of illness or emergency.

Veterinarian's Printed Name

Email or Phone

Veterinarian's Signature

Date of Approval

Designated Supervisor or Qualified Scientist/Mentor

- I have reviewed this research and animal husbandry with the student(s) **PRIOR** to experimentation and I accept primary responsibility for the care and handling of the animals in this project.
- I will provide **DIRECT** supervision during experimentation.

Designated Supervisor's Printed Name

Email or Phone

Designated Supervisor's Signature

Date of Approval

Vertebrate Animal Form (5B) – Middle School

This form is only required for projects involving vertebrate animals being conducted at a Regulated Research Institution and may be completed after experimentation. IACUC approval is required PRIOR to experimentation.

To be completed by the Qualified Scientist or Principal Investigator. The Student Researcher(s) are NOT to complete any part of this form! All questions MUST be answered and additional pages may be attached.

1. Student's Name(s): _____
2. Project Title: _____

3. Title and Protocol Number of IACUC Approved Project: _____

4. Species and number of each animal used.
5. Describe, in detail, the role of the student in this project: animal procedures and related equipment that were involved, oversight provided and safety precautions employed.
6. Was there any weight loss or death of any animal? If yes, attach a letter obtained from the Student Researcher(s)' qualified scientist, designated supervisor or veterinarian documenting the situation and the results of the investigation.
7. The Student Researcher(s)' project _____ *did* / _____ *did not* involve the use of tissues? If yes, Forms 6A and 6B must be completed.
8. What laboratory training (include specific dates) was provided to the student?

A copy of the Regulated Research Institution IACUC Approval MUST be attached to this form. *A letter from the Qualified Scientist or Principal Investigator will NOT satisfy this requirement.*

Qualified Scientist/Mentor or Principal Investigator:

Printed Name

Signature

Date (mm/dd/yy)