# Rules for ALL Vertebrate Animal Studies

1. The use of vertebrate animals in science projects is allowable under the conditions and rules in the following sections. Vertebrate animals, as covered by these rules, are defined as:

    a. Live, nonhuman vertebrate mammalian embryos or fetuses
    b. Tadpoles
    c. Bird and reptile eggs within three days (72 hours) of hatching
    d. All other nonhuman vertebrates (including fish) at hatching or birth.

    Exception: Because of their delayed cognitive neural development, zebrafish embryos are not considered vertebrate animals until 7 days (168 hours) post-fertilization.

2. Alternatives to the use of vertebrate animals for research must be explored and discussed in the research plan. The guiding principles for the use of animals in research include the following “Four R’s”:

    a. Replace vertebrate animals with invertebrates, lower life forms, tissue/cell cultures and/or computer simulations where possible.
    b. Reduce the number of animals without compromising statistical validity.
    c. Refine the experimental protocol to minimize pain or distress to the animals.
    d. Respect animals and their contribution to research.

3) All vertebrate animal studies must be reviewed and approved before experimentation begins. An Institutional Animal Care and Use Committee, known as an IACUC, is the institutional animal oversight review and approval body for all animal studies at a Regulated Research Institution. The affiliated fair SRC serves in this capacity for vertebrate animals studies performed in a school, home or field. Any affiliated fair SRC serving in this capacity must include a veterinarian or an animal care provider with training and/or experience in the species being studied.

4) All vertebrate animal studies must have a research plan that includes:

    a. Justification why animals must be used, including the reasons for the choice of species, the source of animals and the number of animals to be used; description, explanation, or identification of alternatives to animal use that were considered, and the reasons these alternatives were unacceptable; explanation of the potential impact or contribution this research may have on the broad fields of biology or medicine.
    b. Description of how the animals will be used. Include methods and procedures, such as experimental design and data analysis; description of the procedures that will minimize the potential for discomfort, distress, pain and injury to the animals during the course of experimentation; identification

of the species, strain, sex, age, weight, source and number of animals proposed for use.

5. Studies involving behavioral observations of animals are exempt from advance SRC review if ALL of the following apply:
   a. There is no interaction with the animals being observed,
   b. There is no manipulation of the animal environment in any way, and
   c. The study meets all federal and state agriculture, fish, game and wildlife laws and regulations.

6. Students performing vertebrate animal research must satisfy US federal law as well as local, state, and country laws and regulations of the jurisdiction in which research is performed.

7. Research projects which cause more than momentary or slight pain or distress are prohibited. If there is illness or unexpected weight loss this must be investigated and a veterinarian must be consulted to oversee any indicated medical care. This investigation must be documented by the Qualified Scientist, Designated Supervisor who is qualified to determine the illness or a veterinarian. If the illness or distress is caused by the study, the experiment must be terminated immediately.

8. No vertebrate animal deaths due to the experimental procedures are permitted in any group or subgroup. Such a project will fail to qualify for competition.
   a. Studies that are designed or anticipated to cause vertebrate animal death are prohibited.
   b. Any death that occurs must be investigated by a veterinarian, the Qualified Scientist or the Designated Supervisor who is qualified to determine the cause of death. The project must be suspended until such investigation occurs and the results must be documented in writing.
   c. If death was the result of the experimental procedure, the study must be terminated, and the study will not qualify for competition.

9. All animals must be monitored for signs of distress. Because significant weight loss is one sign of stress, the maximum permissible weight loss or growth retardation (compared to controls) of any experimental or control animal is 15%.

10. Students are prohibited from designing or participating in an experiment associated with the following types of studies on vertebrate animals:
    a. Induced toxicity studies with known toxic substances that could impair health or end life, including, but not limited to, alcohol, acid rain, pesticides, or heavy metals.
    b. Behavioral experiments using conditioning with aversive stimuli, mother/infant separation or induced helplessness.
    c. Studies of pain.
    d. Predator/vertebrate prey experiments.

11. Justification is required for an experimental design that involves food or fluid restriction and must be appropriate to the species. If the restriction exceeds 18 hours, the project must be reviewed and approved by an IACUC and conducted at a Regulated Research Institution.

12. Animals may not be captured from or released into the wild without approval of authorized wildlife or other regulatory officials. All appropriate methods and precautions must be used to decrease stress. Fish may be obtained from the wild only if the researcher releases the fish unharmed, has the proper license, and adheres to state, local and national fishing laws and regulations. The use of electrofishing is permissible only if conducted by a trained supervisor; students are prohibited from performing electrofishing.

13. A Qualified Scientist or Designated Supervisor must directly supervise all research involving vertebrate animals, except for observational studies.

14. After initial SRC approval, a student with any proposed changes in the Research Plan of the project must repeat the approval process before laboratory experimentation/data collection resumes.