Guidelines for the Use of Live Vertebrate Animals in Teaching

The study of animals is an important part of many courses at Iowa State University. Courses using animals run the gamut from those in zoology, animal production, and veterinary medicine in which the animal itself is the main subject matter to those in molecular biology, biochemistry, foods and nutrition, psychology, and others in which animals and animal cells are models for the study of mechanisms common to all animals, including humans.

Before animals are used in a course, a properly completed Teaching Protocol Review Form must be submitted to the Institutional Animal Care and Use Committee (IACUC). The instructor may be asked to meet with the committee to answer in detail questions such as those below concerning the use of animals in a course.

Animal use is not to be taken lightly. Instructors should determine first whether animal use is the most effective and efficient means to accomplish instructional objectives and be able to state why alternative methods are not suitable. If a decision is made to use animals, it is critical that animals are treated humanely and respectfully and that every aspect of animal use is done responsibly. Before approval of a teaching protocol is granted, instructors must state the number and training of the laboratory instructors to be involved in the course and specify the preparation the students will have prior to the laboratory.

The following questions should be addressed before animals are used in any aspect of the course:

- Do the instructional objectives of the course require the use of live animals?
- Are there other equally efficient and effective means, such as computer simulations or videotapes, to accomplish the learning objectives?
- If experiments or exercises are done in which results are already known or stereotypical, is it necessary to perform the experiment with live animals?
- Are instructors prepared to justify the use of animals in accomplishing their teaching objectives?
- Are alternatives available for students who are opposed to the use of animals on ethical grounds? Have students been informed that alternatives exist?
- Is the species of animal to be used appropriate for the learning objectives?
- Will use of this species negatively impact the natural environment?
- Can a species from a taxonomically lower vertebrate or invertebrate class be used meaningfully? Can fewer animals be used to accomplish the learning objectives?
- Have all precautions been taken to assure that animals will not suffer undue physiological, psychological, and/or behavioral distress in the experiment or exercise?
- Have proper handling and restraint techniques been discussed for each species to be used?
- Are students made aware of signs of illness and discomfort in the species to be used?
- Are students made aware of a readily available contact person who can assist with problems in animal use and care?
- Need every student perform the required procedure?
- Are students and instructors informed of possible zoonotic diseases?
- Have students been informed early in the course and before using animals
  - that live animals will be used in the course?
  - which species of animals are to be used in the course?
  - the general procedures to be performed?
  - whether or not euthanasia will be performed, and if so, by what method and by whom?
  - that the use of animals in the university is monitored by the University Institutional Animal Care and Use Committee?
  - how and to whom they should report problems and concerns related to animal use in the course?
- Are students, instructors, and teaching assistants properly prepared before laboratory use of animals to derive maximum meaning from the use of the animal?
- Are the users prepared to deal expediently with medical and procedural emergencies?
- What measures are taken to insure that instructors and assistants have the proper training and attitudes to use animals humanely and respectfully?
- Is adequate housing provided for the animals with respect to space, sanitation, food, water, ventilation, etc., according to appropriate guidelines?
- The following points must be addressed for all courses using anesthesia:
  - In any course involving anesthesia, whether or not surgery is to be done, students must receive prior instruction on the administration and monitoring of anesthesia or the students must be provided with animals already anesthetized by experienced personnel. Induction techniques such as the anesthesia jar for rodents may be demonstrated by the instructor in a pre-lab. Students must practice techniques such as IV injections on a previously anesthetized animal before attempting the technique as part of a laboratory exercise. In all cases, students must receive prior instruction on monitoring anesthesia.
  - IACUC suggests the following limits on the number of times an individual animal may be anesthetized. An animal should not be anesthetized more than twice in one week at an interval of at least 72 hours. An animal should not be anesthetized a total of more than 4 times before it is euthanized.

All departments using animals should evaluate required courses in undergraduate and graduate majors that involve the use of animals for the appropriateness of animal use in those courses. The appropriateness/necessity of each student of a given major, at a given level, performing the specified procedures on live animals must be evaluated.

Undergraduate, graduate, and professional courses using animals should be evaluated for similarity of content. Combining courses with similar content which are being offered in different colleges may decrease the number of animals used.