

## **WVU IACUC Guidelines:**

### **Discussion of Species, Strains and Breeds in Animal Use Protocols**

#### **Background**

The Animal Welfare Act, the *Guide for the Care and Use of Laboratory Animals (The Guide)* and the *Guide for the Care and Use of Agricultural Animals in Research and Teaching (The Ag Guide)* primarily focus discussion on individual species of animals. *The Guide* expands some descriptions to include various transgenic and genetically modified strains of certain species (e.g. transgenic mice). *The Ag Guide* breaks down various species according to their use (e.g. dairy cattle and beef cattle).

#### **Guidelines**

1. Animal numbers described in the protocol can be based on species. Protocols should address specific strains, breeds or other subspecies classifications in the protocol under *Experimental Design* when such distinction involves unique animal welfare concerns or are vital to an understanding of the study.

#### **2. Biomedical Research and Teaching**

- **Genetically Modified Animals (GMAs)**

GMAs, particularly mice and fish, are important animal models and new methods and combinations of genetic manipulation are constantly being developed. Because of the nature of genetic manipulation, the phenotype that initially results is often unpredictable and may affect the animal's well-being or survival at any stage of life. Researchers should include discussion of increased monitoring for these animals from birth to early adulthood to identify unexpected outcomes that may result from genetic manipulation. Furthermore, the researcher should define a humane endpoint for anticipated or observed symptoms that indicate the animal is in pain or distress. Otherwise, follow guidelines detailed in the WVU IACUC Policy: Pain and Distress Recognition – Humane Endpoints.

Creation of new transgenic animals at WVU falls under NIH (National Institutes of Health) guidelines and will require an IBC (Institutional Biosafety Committee) protocol. In addition, if a transgenic animal is created at another institution or facility specifically for a PHS (Public Health Service)-funded project, further regulatory documentation may be required, and the IACUC should be made aware of this arrangement.

- **Specific housing/husbandry needs for GMA animals**

Certain strains or groups of strains of various species may require adjustments to the normal husbandry provided to that species. For instance, albino animals would be more susceptible to studies involving irradiation, diabetic animals may require more frequent cage cleaning, nude animals may require nesting enrichment or mandatory group housing, animals with immune system deficiencies may require sterile housing. Researchers should identify these strains and indicate how they intend to address these unique considerations within their protocol.

- Disease Models

Animal models of diseases can occur spontaneously in specific strains or can be induced via chemical manipulation. Researchers should specifically identify either the strains, or the common affliction of the group of strains they intend to use to model disease. For these animals the researcher should indicate the life expectancy (if an abbreviated survival time is expected), expected symptoms along with a timeline of disease progression, and a criterion to identify and euthanize animals prior to expiration. Other considerations such as special diets, breeding efficiency and litter expectations should also be included. Any additional manipulations (e.g. compound administration, gene induction, specialized diets, etc.) used to induce disease should be described in the protocol.

### 3. **Agricultural Research and Teaching**

- Breeds

Researchers should include discussion of specific breeds as it pertains to the experimental design. If a specific breed has known susceptibility to substances used, disease susceptibility or other concerns affecting animal welfare and care:

- a) include these remarks in the protocol under *Experimental Design*
- b) make sure to clarify any special needs to Davis College Research, Education and Outreach Centers (REOC) farm and vet staff

### 4. **Wildlife Research and Teaching**

- Species

Field researchers may engage in types of research such as surveys that involve hundreds of different species. The IACUC encourages field researchers to present species information in a logical organization based upon the procedures or the objectives within the protocol. For instance, for reviewers to understand the differences in how various species will be affected in the study, it may be logical to segregate snakes into land species and water species in relation to method of capture for each type. In contrast, predatory birds and non-predatory birds may be captured using the same procedure, but it would be important to identify their differences in the study objective.

## **References**

1. [Animal Welfare Act and Animal Welfare Regulations](#), United States Department of Agriculture, 2017.
2. [Guide for the Care and Use of Laboratory Animals](#), National Research Council, 2011.
3. [Guide for the Care and Use of Agricultural Animals in Agricultural Research and Teaching](#), Federation of Animal Science Societies, 2020.