

## **WVU IACUC Guidelines: Housing Multiple Species of Laboratory Animals in the Same Room or Area**

### **Purpose**

This document provides guidelines for housing more than one species in the same room or area. The request to house different species in the same room should be addressed and justified in the animal use protocol, then submitted to the IACUC for approval.

### **Background and Regulations**

Typically, all animals at WVU are separated by species and pathogen status. Housing different species in the same room may be considered by the IACUC, and approval is based on current standards of best veterinary practice, considering species-specific behaviors, and infectious disease control. Animals should not be housed with or near another species that might compromise the health or welfare of either species.

The *Guide for the Care and Use of Laboratory Animals* states (p.111): “Physical separation of animals by species is recommended to prevent interspecies disease transmission and to eliminate the potential for anxiety and behavioral changes due to interspecies conflict.”

The *Guide for the Care and Use of Agricultural Animals in Agricultural Research and Teaching* states (p.22): “Agricultural animals of different species are typically kept in different enclosures to reduce interspecies conflict, meet the husbandry and environmental needs of the animals, and facilitate research and teaching.”

Animals **must** have an appropriate level of separation during quarantine and acclimation periods. The following recommendations refer to animals that are considered free of transmissible diseases, unless otherwise specified.

### **Rodents – Housing multiple rodent species in the same room (mice/rats/hamsters)**

There are currently no diseases that have been detected in mouse or rat populations that place either species at greater risk of interspecies exposure to a pathogenic organism. The literature on housing mice and rats in the same room is limited. In the wild, rats can be predators of mice. Some studies have shown that mice co-housed with rats can exhibit signs of acute and chronic stress, while other studies have found negligible stress-related effects. Given the potential negative impact on animal welfare associated with co-housing, efforts should be made to house mice and rats in separate rooms.

#### ***Guidelines for housing mice and rats in the same room:***

- Individually ventilated caging is preferred, along with housing different species on different racks, if available.
- When possible, direct ducting for ventilated housing racks is recommended.
- Consideration should be given to visual separation or barriers between different species.
- All animal manipulations **must** be conducted within a change station or biosafety cabinet, with proper disinfection between cages.

- Housing of rodent species in the same room may be necessary due to limited space designed for hazard containment (ABSL2, ABSL3, chemical, radiation hazards, inhalation facility), special project needs (reverse light cycles/CLAMS) and quarantine.

### **Agricultural Animals**

When possible, farm animals should be housed by species. Historically different species of farm animals have been housed in the same pasture and in the same barn, but usually in separate pens. However, mixed species grazing has benefits for both the animals and the environment, co-housing can be used for species enrichment, and guard animals are sometimes helpful to minimize predation. A precedent has therefore been established for housing different agricultural species together. A veterinarian must be consulted prior to housing multiple agricultural species together or in close proximity (nose-to-nose contact) to ensure appropriate health and welfare.

Agriculture animals used in biomedical research setting it is recommended that mixing of different species of farm animals be kept to a minimum. The *Ag Guide* states (p.22): “a qualified veterinarian or scientist should recommend appropriate health and biosecurity practices if species are to be co-housed.” If needed, this practice should be approved by the IACUC committee.

#### ***Guidelines for co-housing animals in an agricultural setting:***

- In a farm-type operation, animals may be housed in pens or pastures adjacent to other species. IF any of the animals have a communicable disease, measures should be taken to reduce nose-to-nose interspecies contact by use of a double fence or solid wall.
- All domesticated ungulates may be housed in adjacent indoor or outdoor pens or box stalls, provided animals are free of transmissible disease.
- It is common practice to co-house “guard animals” (llamas or donkeys) with sheep while on pasture to provide protection from predation.
- Poultry should be housed in an area separate from all other animals.
- When possible, farm animals should be housed with a companion of the same species.

### **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, 2010.
4. CDC/NIH Biosafety for Microbiological and Biomedical Laboratories, 5th edition, 2009, US Government Printing Office, Washington, DC.
5. “Guidelines for Co-Housing Multiple Species of Laboratory Animals”, NIH Office of Intramural Research, Office of Animal Care and Use.
6. [IACUC Considerations for the Use of Livestock in Translational Research](#), Institute for Laboratory Animal Research Journal, Volume 56, Issue 1, 2015.
7. Pritchett-Corning KR, Chang FT, and Festing MF. “Breeding and housing laboratory rats and mice in the same room does not affect the growth or reproduction of either species.” *Journal of the American Association for Laboratory Animal Science*, 48(5), 2009, 492-8.
8. Arndt SS, Lohavech D, van’t Klooster J, and Ohl F. “Co-species housing in mice and rats: Effects on physiological and behavioral stress responsivity.” *Hormones and Behavior*, 57(3), 2010, 342-51.
9. Yang M, Augustsson H, Markham CM, Hubbard DT, Webster D, Wall PM, Blanchard RJ and Blanchard DC. “The rat exposure test: a model of mouse defensive behaviors.” *Physiology & Behavior*, 81(3), 2004, 465-73.