



## STANDARD OPERATING PROCEDURE

### ENVIRONMENTAL ENRICHMENT FOR DOGS USED IN RESEARCH AND TEACHING

#### 1.0 PURPOSE:

- 1.1 This standard operating procedure (SOP) describes the methods for environmental enrichment of dogs (*Canis familiaris*) used for research and teaching purposes.
- 1.2 These methods are intended to improve the well-being of these animals by increasing species-specific behaviors and reducing maladaptive behaviors.
- 1.3 This SOP is part of the UGA Environmental Enrichment Program that fully complies with the requirements of the National Research Council, *Guide for the Care and Use of Laboratory Animal*, 8<sup>th</sup> edition and the Animal Welfare Act and Regulations: Public Law 99-198 – The Improved Standards for Laboratory Animal Act.

#### 2.0 STANDARDS:

##### 2.1 Natural Behavior:

Recent archeological records suggest that domestication of dogs could have occurred some 33,000 years ago. (Pappas, 2013) Despite the millennia of domestication, modern dogs have many similar traits to their wolf cousins. Dogs are a highly social species which will still form packs. Dogs normally spend three-fourths of their time with pack members (Bayne, 2003) Dominance hierarchies exist within the pack. Dogs communicate primarily through auditory, visual and olfactory cues. Early socialization is critical in behavioral development, allowing a dog to develop normal social relationships with other dogs and adjust more easily to unfamiliar stimuli and environmental changes. (Bradshaw and Nott, 1995) Positive interactions between staff and dogs can be a key element of enhancing the well-being of research dogs. (Bayne, 2003) Dogs are members of the order Carnivora and are primarily meat-eating. However, their natural feeding habits do include ingestion of some limited plant material, making them debatable omnivores. (Merck, 2005) Dogs naturally hunt for their food and have a strong sense of smell. They also have a strong instinct to gnaw.

##### 2.2 Environmental enrichment must be evaluated by taking into account the following:

- 2.2.1 The Natural Behavior and needs of dogs (see above)
- 2.2.2 Social Enrichment – Housing of compatible co specific offers a high level of enrichment. Every effort will be made socially house social species. If social housing is not possible, animals should be housed in a manner that allows for as much tactile, auditory, visual or olfactory contact as possible. Social housing is a recognized and important part of the Environment Enrichment Program but should not be viewed as the sole means of meeting the enrichment needs of animals.
- 2.2.3 Physical Enrichment (devices, toys, etc) – Physical enrichment can be an important part of the Environmental Enrichment Program. However the selection of physical enrichment should take into account the safety of the device, its ability to stimulate and maintain the animal's interest and its impact on the research being conducted. Physical enrichment should be carefully monitored to assess its impact of the goals of increasing natural behaviors.

- 2.2.4 Activity/Food Enrichment – Activity/food enrichment can be an important part of the Environmental Enrichment Program. However, the selection of activity/food enrichment should take into account the health of the animal, the limitations of its confines and its impact on the research being conducted. Any activity/food enrichment should be planned in consultation with the Attending Veterinarian (AV) and the Principal Investigator (PI).
- 2.3 The enrichment program is carried out by University Research Animal Resources (URAR). Specific needs and requirements should be communicated to the Assistant Director of the Animal Resources (AR) Unit.
- 2.4 Unless specifically justified by the PI in the Animal Use Proposal (AUP), all animals will receive enrichment. It is recognized that animal enrichment can be a research variable. In caring for the psychological well-being of animals, it is important to recognize limitations and use a balanced approach in providing the best possible care and allowing for the expression of species-typical behavior within a functioning research environment.
- 2.5 Abnormal Behavior:

The Environmental Enrichment Program is a dynamic process. Ongoing evaluation is a necessary component to meeting the goal of more species-specific natural behaviors. University Research Animal Resources (URAR) will regularly monitor all enrichment, in part, by looking for stereotypical behaviors that might indicate animal stress or maladaptation to the laboratory environment.

Abnormal behavior in dogs includes:

- Depression and Apathy
- Pacing and Circling
- Anorexia
- Isolation and Sleeping excessively
- Increased Aggression

When these behaviors are observed, URAR will evaluate the need for additional environmental enrichment. All changes to enrichment will be approved by the AV and the PI. Enrichment changes will be made for all animals on study, in order to minimize research variability, even if all of the animals are not showing the stereotypical behavior.

### **3.0 PROCEDURES:**

- 3.1 Social Enrichment – Dogs, especially females and neutered males, will be pair-housed whenever possible. Dogs will be separated temporarily, if necessary, during feeding. If pair housing is not possible, animals will be housed in a manner that allows for as much tactile, auditory, visual or olfactory contact as possible. In these instances, singly housed animals will be offered the opportunity for social activity and exercise at for at least 30 minutes day/3 times a week. Positive human interaction will be provided by Animal Care Staff on a regular basis. Performing normal husbandry procedures (e.g., cleaning

runs, providing food and water) does not constitute “positive” human interaction. Examples of positive human interaction include, but are not limited to: being walked on a leash, playing with the dogs with or without toys, or bathing/grooming the dog.

3.2 Physical Enrichment - in order of preference

- 3.2.1 Dog Toy, rotated on a biweekly basis
- 3.2.2 Rest or bench platform for sleeping and resting
- 3.2.3 Playing music\* during normal working hours  
\*music on CD's approved for canines by ADAR

3.3 Activity/Food Enrichment - in order of preference

- 3.3.1 Treats given at least once per week, up to three times per week

**4.0 RECORDS:**

The Animal Care Staff will log provision of enrichment daily according to their facility specific documentation records.

**5.0 DEFINITIONS AND REFERENCES:**

5.1 Definitions:

- 5.1.1 Animal Use Proposal (AUP): a detailed written description of the procedures involving the use of animals in a research or instructional project.
- 5.1.2 Attending Veterinarian (AV): the veterinarian responsible for the health and well-being of all laboratory animals used at the institution
- 5.1.3 Enrichment: a method of providing animals with the opportunity to behave as they do in the wild, playing, foraging, grooming, and interacting in other ways with one another.
- 5.1.4 Principal Investigator (PI): the scientist who plans and coordinates all phases of the research or instructional work and the protocol.
- 5.1.5 Standard Operating Procedure (SOP): a set of standardized instructions for dealing with routine laboratory procedures

5.2 References:

Animal Welfare Act and Regulations: Public Law 99-198 – The Improved Standards for Laboratory Animal Act  
AWIC Resource Series: No. 2. [www.nal.usda.gov/awic/pubs/enrich/dogs.htm](http://www.nal.usda.gov/awic/pubs/enrich/dogs.htm)  
Bayne, Kathryn A. (2003) *Environmental Enrichment of Nonhuman Primates, Dogs and Rabbits Used in Toxicology Studies*. “Toxicologic Pathology”  
Cattell, R.B. and Korth, B. (1973) *The isolation of temperament dimensions in dogs*. Behavioral Biology  
National Research Council, *Guide for the Care and Use of Laboratory Animals*, ed 8  
Pappas, Stephanie (2013) *DNA from fossil suggests dogs were domesticated 33,000 years ago*. LiveScience

Wells, D. L., et al. "The Influence of Auditory Stimulation on the Behaviour of Dogs Housed in a Rescue Shelter." *Animal Welfare 11 (2002): 385-393*  
Wagner, S., et al. *BioAcoustic Research & Development Canine Research Summary (2004)*.