In order to meet expectations of the revised Guide for the Care and Use of Laboratory Animals, the University of Tennessee has recently updated our environmental enrichment program for the research and teaching animals. We will be implementing this newly updated enrichment program in all of our core laboratory animal facilities within the next several weeks. The Office of Laboratory Animal Care has been working closely with the facility managers in selecting environmental enrichment products that will effectively and safely enhance the animal’s environment.

Our Animal Care and Use Program affirms the need to balance the animal’s need for enrichment and the needs of research. Any enrichment item that may not be conducive to research objectives may be opted out by the principle investigator. It can be expected that some animals may not receive certain forms of environmental enrichment. Animals on nutritional studies, for example, would most likely not be able to receive nutritional enrichment, such as foraging crumbles. This exclusion from certain forms of enrichment is best accomplished at the protocol level during the three year re-write. There is a section in the protocol where the investigator can scientifically justify the reason that the research animals cannot have a certain form of environmental enrichment. It is critical, though, that the reason for exclusion be backed by scientific evidence and not based on anecdotal evidence.

We are currently in the transitional stage of implementing the enrichment program. During this time, studies are already active and protocols may not be due for the three year re-write. We strongly urge researchers to begin a discussion with the facility managers to find out which enrichment strategy will work best for the animals on study. If there are concerns about using a product and its effect either on the animals or the study, please do not hesitate to contact OLAC. We would be more than happy to discuss these concerns with you and to offer guidance as to how best handle them.
Canine Enrichment SOP

Scope and Application

Regulations and policies governing the welfare of animals used in research, teaching, and testing advocate that items be provided to enhance the animal’s well being as well as to provide the animal with sensory and motor stimulation. Environmental, social, and sensory items are used for the enrichment of UTK research dogs. It is the purpose of this SOP to delineate the types of enrichment used and how these items are provided. This procedure applies to all dogs housed in the UTK dedicated laboratory animal facilities.

Summary of Method

Enrichment

- Manipulanda that stimulate manipulative activities and/or involve cognitive challenges is provided as part of the enrichment program. These items may include but are not limited to toys designed for chewing, interactive toys such as puzzles or treat dispensing toys, and hard plastic or rubber balls.

- Enrichment items are rotated to ensure the novelty of the enrichment item. This rotation cycle occurs weekly and is based on alternating the type of activity the enrichment item encourages. During one week, an item that primarily focuses on physical manipulation (ex. chew toy) is provided. The next week an item that focuses on mental stimulation (ex. dog puzzle) is provided.

- Dogs are also provided with an elevated resting surface. Provision of cots is especially critical to the older dogs in the research colony. Provision of blankets and towels is not advisable due to the inherent risk of ingestion of these items.

- Although the enrichment items chosen have been selected for their durability and are manufactured to withstand aggressive chewing, these items should not be considered non-destructible. It is therefore critical that the enrichment items be checked daily for signs of wear. Any worn or damaged item must be immediately removed from animal’s enclosure. A member of the OLAC staff must be notified in a timely manner of the damaged item. This notification can occur by email or verbally during the weekly rounds. The facility manager or supervisor must maintain a log of what types of enrichment items are unsuitable for certain dogs so that appropriate items are provided to the animal.

- All enrichment items are cleaned with detergent followed by sanitization at least every 2 weeks. Sanitation is achieved either by washing with hot water (at least 180°F) or chemical disinfectant followed by a clean water rinse as per USDA 9 CFR 3.11 b. 3. Items that cannot be sanitized must be replaced at minimum every 2 weeks or as needed.

- Any change to enrichment or enrichment strategies must be approved by an OLAC veterinarian and the principle investigator prior to implementation.

Social Enrichment

- Housing: Group housing is utilized solely on those animals deemed to have a temperament conducive to such housing methods. Dogs that are not able to be group housed due to intraspecies aggression are singly housed. Singly housed animals are provided with sensory contact with conspecifics.

- Positive human contact: At minimum each dog receives 10 minutes positive human interaction from the care staff twice a week. During this time the animal receives positive human contact consisting of, but not limited to, being brushed, petted, or stroked.

- During the weekly sanitation of the primary enclosure, the dog is allowed exercise. While the primary enclosure is being cleaned, the dog is afforded exercise by being free in the room to run and explore.

- Dogs housed singly in an area that does not provide the animal with its 2X space, as defined in the Animal Welfare Act and Regulations (9 CFR 3.6), are afforded the opportunity to exercise per the Canine Exercise Plan.
Feline Enrichment SOP

Scope and Application

Regulations and policies governing the welfare of animals used in research, teaching, and testing advocate that items be provided to enhance the animal’s well being as well as to provide the animal with sensory and motor stimulation. This procedure describes the environmental enrichment program for cats and is applicable to all cats housed in the UTK dedicated laboratory animal facilities.

Summary of Method

- Social grouping for socially compatible animals is provided whenever the scientific design of the study allows. Singly housed cats have sensory contact with other cats, and are allowed supervised free roam during cage cleaning. During this time, cats receive at least 5 minutes of positive human interaction.

- Manipulanda is provided as part of the enrichment program. These items may include but are not limited to puzzles, treat dispensing toys, and play toys such as hard rubber or plastic balls. Toys are rotated every week by toy type: rubber balls rotated with jingle balls, treat dispensing toys rotated with ball and track toys, and cardboard boxes rotated with cat carriers.

- Cats have access to scratching mats and resting boards. Cat mats are cleaned biweekly or more often if needed and replaced when worn.

- Any non-disposable items are sanitized at least every two weeks. Disposable items are replaced weekly or more frequently if needed.

- Any change to enrichment or enrichment strategies must be approved by an OLAC veterinarian and the principle investigator prior to implementation.

Rabbit Enrichment SOP

Scope and Application

Regulations and policies governing the welfare of animals used in research, teaching, and testing advocate that items be provided to enhance the animal’s well being as well as to provide the animal with sensory and motor stimulation. This procedure describes the environmental enrichment program for rabbits and is applicable to all rabbits housed in the UTK dedicated laboratory animal facilities.

Summary of Method

- Each rabbit cage may be provided an elevated resting shelf.

- One Papaya FruitPlus pellet is fed daily.

- Rabbits are periodically fed a handful of hay stuffed into the opening of the feeder.

- Manipulanda is provided as part of the enrichment program. These items may include but are not limited to metal rattles, pineapple rings, plastic hanging rattles, truck rattles, and jingle balls. Toys are rotated every week by toy type. In addition to hay in the feeders, a small amount of hay is placed in balls.

- Any non-disposable items are sanitized at least every two weeks. Disposable items are replaced at cage change or as needed.

- Any change to enrichment or enrichment strategies must be approved by an OLAC veterinarian and the principle investigator prior to implementation.
Parrot Enrichment SOP

Scope and Application

The Guide for the Care and Use of Laboratory Animals (NRC, 2011) states that “The primary aim of environmental enrichment is to enhance animal well-being by providing animals with sensory and motor stimulation, through structures and resources that facilitate the expression of species typical behaviors and promote psychological well-being through physical exercise, manipulative activities, and cognitive challenges according to species specific characteristics.”

This procedure builds on the recommendations set forth in the Guide and describes the environmental enrichment program for all parrots housed in the UTK dedicated laboratory animal facilities.

Summary of Method

• Social grouping for socially compatible animals is provided whenever the scientific design of the study allows. Singly housed parrots are provided with sensory contact with conspecifics.

• Each cage receives a cuttlebone and an enrichment device. Enrichment consists of weekly rotation of items that appeal to the different senses such as mirrors, bells, foraging devices, and play items.

• Parrots are fed vegetables twice weekly.

• Any non-disposable items are sanitized at least every two weeks. Disposable items are replaced at cage change or as needed.

• Any change to enrichment or enrichment strategies must first be approved by an OLAC veterinarian and the principle investigator prior to implementation.

Xenopus Enrichment SOP

Scope and Application

The Guide for the Care and Use of Laboratory Animals (NRC, 2011) states that “The primary aim of environmental enrichment is to enhance animal well-being by providing animals with sensory and motor stimulation, through structures and resources that facilitate the expression of species typical behaviors and promote psychological well-being through physical exercise, manipulative activities, and cognitive challenges according to species specific characteristics.”

This procedure builds on the recommendations set forth in the Guide and describes the environmental enrichment program for all Xenopus housed in the UTK dedicated laboratory animal facilities.

Summary of Method

• Clean PVC hiding tubes and lily pads are placed in each frog tank at cage change. Different shaped hiding tubes are rotated weekly.

• Any non-disposable items are sanitized at least every two weeks. Disposable items are replaced at cage change or as needed.

• Any change to enrichment or enrichment strategies must be approved by an OLAC veterinarian and the principle investigator prior to implementation.
Rodent Enrichment SOP

Scope and Application

The Guide for the Care and Use of Laboratory Animals (NRC, 2011) states that “The primary aim of environmental enrichment is to enhance animal well-being by providing animals with sensory and motor stimulation, through structures and resources that facilitate the expression of species typical behaviors and promote psychological well-being through physical exercise, manipulative activities, and cognitive challenges according to species specific characteristics.”

This procedure builds on the recommendations set forth in the Guide and describes the environmental enrichment program for all rodents housed in the UTK dedicated laboratory animal facilities.

Summary of Method

- Social grouping for socially compatible animals is provided whenever the scientific design of the study allows.

- Harlan Soft Cob Enrichment Bedding is preferred because it contains corn cob bedding mixed with a cellulose material that can be used for constructing nesting areas within the cage. Nestlets or Enviro-dry may be used to provide additional substrate.

- Provided the scientific study allows, rodents are provided additional enrichment which may include shepherd shacks, mouse igloos, nylabones, cardboard tubes, paper cups, exercise wheels, foraging crumbles, and PVC tunnels.

- A different enrichment item is rotated at cage change to maintain novelty of the items.

- Any non-disposable items are sanitized at least every two weeks. Disposable items are replaced at cage change or as needed.

- Any change to enrichment or enrichment strategies must be approved by an OLAC veterinarian and the principle investigator prior to implementation.

Examples of Enrichment
Upcoming Training Opportunities

On April 19th at 1:30 pm at the Joe Johnson Research and Animal Teaching Unit, OLAC will host a rodent wet lab open to all investigators and their staff who are interested in learning rodent handling and experimental techniques. Some of the procedures that will be covered are handling and restraint, anesthesia, bleeding and injection methods.

This is a great opportunity for beginners and for those who could use a refresher. Space is limited, so please contact Jane Czarra by phone at 974-5841 or email jczarra@utk.edu as soon as possible to reserve a space.

Purina Prolab Award

At the AALAS Appalachian Branch meeting, one of our technicians was singled out as having a passion for providing the highest standard of care and that these qualities were deserving of an award. This year, the Purina Prolab award went to Darlene Buffalow. Darlene has served as a laboratory animal technician in the Veterinary Medical Center lab animal facilities for 5 years providing the best care to our research animals. We are very fortunate to have such an outstanding employee, so please congratulate Darlene when you see her on her well deserved award.

Employee Spotlight

Corbin Wright makes the newest addition to the Veterinary Medical Center lab animal facility. Corbin was hired in September of 2011 and is back in the swing of things after having left us to pursue other opportunities in 2004. Corbin works with a wide variety of animals including dogs, cats, rodents, and reptiles and is happy to be working with animals again. He has two cats of his own and during his spare time is studying to be a massage therapist. Corbin makes a great addition to an already wonderful team in the VMC lab animal facilities.