

Title: ENVIRONMENTAL ENRICHMENT FOR NONHUMAN PRIMATES

Date: August 16, 2004

1. Purpose

1.1. This document outlines the Primate Environmental Enrichment Program (PEEP) developed for the University of Michigan. The program is designed to promote the psychological well-being of nonhuman primates (NHP) used in research and to provide opportunities for NHPs to engage in noninjurious species-typical activities. The program is designed to comply with all regulations presented in the Animal Welfare Regulations as a result of the 1991 amended version of the Animal Welfare Act (9 CFR 3.81).

2. General Responsibilities

- 2.1. The Principal Investigator is responsible for promoting the psychological health of their primates by helping to determine what enrichment strategies will be consistent with the scientific aims of their research.
- 2.2. The PEEP Coordinator is responsible for overseeing the overall Primate Environmental Enrichment Program at the University. The coordinator should work directly with the husbandry supervisors and technicians and the Principal Investigators to evaluate and, if possible, improve the Program.
- 2.3. The husbandry supervisors and husbandry technicians are responsible for the daily provision of enrichment to the animals. They are also responsible to observe and record the animals' interaction with enrichment items and methods so that the best enrichment plan can be devised for each animal.

3. Social Housing

- 3.1. When the temperament of individual animals and the nature of the research allows, social species should be housed in social groups.
- 3.2. If animals cannot be housed in larger groups due to medical or research-related issues (see 3.3 below), animals should be pair-housed.
- 3.3. Principal investigators must indicate in the University Committee on the Use and Care of Animals (UCUCA) Application to use Vertebrate Animals in Research, Testing, or Instruction if the primates involved in the research can be housed in groups of 2 or more per cage. If pair or group housing is not compatible with the nature of the research, the investigator must provide scientific justification for single housing. This must be reviewed by UCUCA. Some reasons for which animals should not be socially housed include the following:
 - 3.3.1. if a NHP exhibits vicious or overly aggressive behavior or is debilitated as a result of age or other conditions (e.g., arthritis).
 - 3.3.2. if a NHP has or is suspected to have a contagious disease and therefore must be isolated from healthy animals.
- 3.4. If an animal cannot be pair-housed due to UCUCA-approved research-related issues, additional provisions must be made to allow for the social needs of the animal. These include the following:

- 3.4.1. The ability to see other animals of the same species. This can be accomplished by positioning cages such that animals can see each other; providing mirrors that can be manipulated in multiple directions; and with appropriate cages, placing a clear partition between cages. However, regardless of which method is used, all animals should have the ability to hide from the view of other animals.
 - 3.4.2. The ability to smell and hear other animals of the same species.
 - 3.4.3. This may include the ability to be in physical contact through a partition inserted between the cages.
4. Special Considerations. Certain NHPs must be provided special attention regarding enhancement of their enrichment, based on the needs of the individual species and in accordance with the instructions of the attending veterinarian. NHPs requiring special attention are the following:
 - 4.1. Infants and young juveniles
 - 4.2. Those that show signs of being in psychological distress through behavior or appearance.
 - 4.3. Those used in research for which the UCUCA-approved protocol requires restricted activity.
 - 4.4. Individually housed NHPs that are unable to see and hear NHPs of their own or compatible species.
5. Environmental Enrichment Items and Strategies
 - 5.1. Principal investigators must indicate in UCUCA Application to use Vertebrate Animals in Research, Testing, or Instruction if enrichment items and strategies can be provided to primates involved in research. The investigator can further specify which general type of item or approaches would be acceptable. If providing enrichment would not be compatible with the nature of the research, the investigator must provide scientific justification that supports this view. This must be reviewed by the UCUCA.
 - 5.2. An equal level of enrichment should be provided to animals housed both in quarantine and in non-quarantine housing areas.
 - 5.3. Perches must be provided within the primary enclosure of all NHPs.
6. Administration of the Enrichment Plan
 - 6.1. If the investigator's staff will be providing the enrichment, the investigator will designate an individual from his/her laboratory. If ULAM is to provide the enrichment, the area supervisor will assign the duty. In either case, the person providing the enrichment must record each time enrichment is provided on the room enrichment record form for each animal.
 - 6.2. Selection and Provision of Appropriate Enrichment Items in Areas where ULAM Provides Enrichment
 - 6.2.1. In the UCUCA Application to use Vertebrate Animals in Research, Testing, or Instruction, the principal investigator must specify the enrichment devices or approaches that are compatible with the research. This will indicate the general type of enrichment items and strategies allowable (ex. manipulanda, food items, increased cage complexities), but often does not specify specific enrichment items. This information will be made available to the animal care staff by the UCUCA Office.

- 6.2.2. Only consumable supplies should be recharged to the investigator. However, if an investigator requests more enrichment than that selected by the PEEP coordinator, the investigator will be recharged for the supplementary time and materials.
 - 6.2.3. Specific enrichment items to be provided will be selected by the area supervisor and/or the faculty veterinarian with primary clinical responsibility for the animals. Both the area supervisor and the clinical veterinarian are encouraged to consult with the faculty veterinarian directing the primate enrichment program (the PEEP coordinator) as needed.
 - 6.2.4. The animal care technician assigned to the area or another previously approved individual will be responsible for selecting and implementing the enrichment activities on designated days.
 - 6.2.5. If possible, the enrichment device should be given, or the enrichment activity should occur, in the middle of the workday so that the animals will have the opportunity to eat their morning feed and so that all room activity (cleaning, health checks, provision of enrichment) is not concentrated in one short period of time.
 - 6.2.6. If the caretaker observes that an animal is not utilizing an enrichment device or does not seem to be benefiting from the enrichment provided, he/she should report the lack of response to enrichment on an Animal Treatment Report (ATR). The clinical resident and PEEP coordinator will reevaluate the enrichment item selection for this animal.
 - 6.2.7. Both the husbandry and veterinary staffs are encouraged to recommend new devices, objects, foodstuffs, and techniques to provide enrichment to our primates. These suggestions should be directed to the PEEP Coordinator.
- 6.3. Possible Environmental Enrichment Items and Approaches to be Provided
 - 6.3.1. Manipulanda
 - 6.3.1.1. Selection of items to be provided must take into account the size, strength, and behavioral tendencies inherent in the specific species of nonhuman primate. Items appropriate for one species may not be appropriate for others. Any items which could pose a strangulation or choking hazard should not be given. See 5.4.2 below.
 - 6.3.1.2. Frequency of rotating items
 - 6.3.1.2.1. Loose items provided within the cage must be replaced no less frequently than at the time of cage change which is approximately every 2 weeks. More frequent replacement of the items is possible if the caging design is such that the animals can be safely excluded from part of the cage thereby allowing access to the item.
 - 6.3.1.2.2. Items affixed to the outside of the cage must be replaced no less frequently than every week. Care must be taken to ensure that the animal care personnel are not at risk of injury from the animals while removing and replacing the items.
 - 6.3.2. Food-based treats

- 6.3.2.1. The husbandry supervisor or the animal care technician must receive the approval of the research group prior to introduction of any food items. The research group may wish to restrict the amount or types of food if it will interfere with the study.
 - 6.3.2.2. The appropriate amount of each food-based treat for each species will be determined by the PEEP coordinator (or area faculty veterinarian) and the husbandry supervisor. The quantity of food provided, in addition to the animal's normal diet, should not be such that it results in the animal becoming overweight.
 - 6.3.2.3. Animal care technicians should consult with the area supervisor regarding the appropriate amount of food to be provided in the form of enrichment.
 - 6.3.2.4. Approved food treats must be provided at a minimum of once a day excluding weekend and holidays. Fruit regularly provided to an animal can be considered a food treat.
 - 6.3.2.5. When possible, provide both the animal's normal diet as well as treats in some sort of foraging device or puzzle. This will provide additional enrichment for the animal.
 - 6.3.3. Interaction with animal care staff or other familiar and knowledgeable persons should be encouraged. However, direct contact with the animals is not encouraged as it increases the risk of an individual being bitten or scratched by an animal.
- 6.4. Items Not to be Provided
 - 6.4.1. Those items indicated by the lab or that are not consistent with caging requirements. For example, items should not be placed in the cage if they will impede the ability to immobilize the animal. This may occur if large items are placed in squeeze-back cages.
 - 6.4.2. Any items which could pose a strangulation hazard should not be given. For example, no circular devices should be provided which are large enough to be placed over the animal's head. No chains, cables, or ropes should be provided which are long enough to encircle the animal's neck.
 - 6.4.3. No items containing batteries should be provided within the cage of any species of nonhuman primate. Select battery-powered items may be appropriate for placement on the outside of the cage. However, all such devices must be approved by the area supervisor prior to use.
 - 6.4.4. Any item that could pose a choking hazard or whose ingestion could harm the animal.
7. How to obtain Additional Enrichment Items
 - 7.1. The animal care technician can obtain additional food items from their designated supervisor.
 - 7.2. The animal care technician can obtain additional non-food-based items from their designated supervisor who will request the items either from the facility manager or the PEEP coordinator.
8. Exceptions to the Enrichment Program
 - 8.1. A blank exception form can be accessed on the UCUCA webpage (www.ucuca.umich.edu)
 - 8.2. Exceptions can be initiated by the research group, the area supervisor, the appropriate veterinary technician, the clinical veterinary resident, the clinical faculty veterinarian or the PEEP coordinator.
 - 8.3. Completed exception forms should be submitted for approval to the area supervisor who will further direct the document to the appropriate individuals.

- 8.4. The clinical resident and the PEEP coordinator may exempt an individual nonhuman primate from participation in the environmental enrichment plan because of its health or physical condition. The basis for the exemption must be recorded by the resident for each animal on an Animal Treatment Request (ATR) form. Unless the reason for the exemption is a permanent condition, the exemption must be reviewed at least every 30 days by the clinical resident or faculty veterinarian. A clear acetate will be placed on the animal's cage card to alert husbandry that the animal is exempt from the enrichment program.
9. Room Enrichment Records
 - 9.1. The room enrichment record is separate from the housing room log sheet.
 - 9.2. An enrichment record template is included in Appendix A.
 - 9.3. Enrichment record location
 - 9.3.1. Enrichment records from at least the last month are located within each NHP housing room
 - 9.3.2. Older enrichment records removed from the animal room are stored in the area supervisor's office
 - 9.3.3. All room enrichment records are kept for a minimum of three years
 - 9.4. Room records must be filled out daily
10. Animal Concerns
 - 10.1. Any concerns regarding the Primate Environmental Enrichment Program can be addressed to any of the following individuals or groups involved in the care of the animals:
 - 10.1.1. the area supervisor
 - 10.1.2. the veterinary technician
 - 10.1.3. the assistant facility manager
 - 10.1.4. the facility manager
 - 10.1.5. the clinical veterinary resident
 - 10.1.6. the faculty veterinarian
 - 10.1.7. the PEEP Coordinator
 - 10.1.8. the UCUCA office
 - 10.1.9. the UCUCA sponsored anonymous Animal Concern Hotline (734.763.8028).

Approved by the University of Michigan University Committee on the Use and Care of Animals (UCUCA) on 8/16/04.