

**UNIVERSITY OF CALIFORNIA SAN DIEGO  
INSTITUTIONAL ANIMAL CARE AND USE COMMITTEE**

**Policy and Guidelines for Housing and Environmental Enrichment  
of Laboratory Animals**

*The Guide for the Care and Use of Laboratory Animals* states: "A good management program provides the environment, housing, and care that permit animals to grow, mature, reproduce, and maintain good health; provides for their well-being; and minimizes variations that can affect research results"

Further considerations for appropriate physical and social environment, housing, space, and management noted include: species, strain, and breed, individual characteristics, (sex, age, size, behavior, experiences, and health), group (social) housing, enrichment, project goals and duration, degree of invasiveness, presence of hazards.

It is therefore a requirement of the institution that we base our animal management program on these and other factors. This document is prepared to assist the institutional faculty and staff in designing the most appropriate housing, care, and enrichment program for the species they are using in research, teaching, or testing.

**Definition: Enrichment** is a dynamic process in which changes are made to husbandry practices or the animals' standard physical environment for the purpose of promoting expression of the species-appropriate behavior and activities, while minimizing stress-inducing behaviors.

As defined, we first clarify the "husbandry practices" and the "standard environment" for the major species housed at UCSD.

- Enrichment must be conducted in such a way as to not interfere with the research results.
- Provision of enrichment will be at the discretion of the Principal Investigator in consultation with Animal Care Program, and written into the PI's IACUC approved protocol.
- Materials and labor costs associated with enrichment will be the responsibility of the investigator.
- Physical materials used for enrichment must be easily sanitizable to the level of the building SOPs.
- Enrichment materials or practices cannot significantly alter the species appropriate standards for husbandry, nutrient requirements, or housing.
- Consideration must be given to the provision of enrichment, on a case-by-case basis so that acute changes in husbandry or standard environment do not cause undue stress or otherwise harm the animal. (eg, providing "socialization" time to a previously un-socialized animal).

**UCSD Animal Housing Standards**

1. All animals housed for research, teaching or testing purposes at UCSD must be housed in a vivarium approved by the IACUC.
2. Each animal housing room maintains a single species at any given time unless special housing arrangements have been made for compatible species.
3. Changes from the standards listed below are not allowed except under the following two circumstances:
  - a. Changes are described in the applicable animal use protocol and approved by the UCSD IACUC.
  - b. The UCSD Animal Care Program Veterinary Health Unit prescribes the change.

Species	Standard Housing and Enrichment Required	Approved Enrichment (PI must direct this enrichment)
	<i>PI must opt-out of these requirements on the animal protocol (Question 38) by providing scientific justification and receiving IACUC approval.</i>	<i>PI may provide this enrichment at any time without adding on the animal protocol (Question 38)</i>
Amphibian /reptiles	Group housed if possible in easily sanitizable and secured enclosures with a safe heating device located in such a way to allow animal to thermoregulate appropriately for the species. Substrate that is easily sanitizable and appropriate for the species. Fresh water (dechlorinated for amphibious species) and nutritionally complete feed appropriate for the species. Hiding tubes boxes and perches of appropriate size.	Food items as treats, not to constitute a substantial portion of the standard diet.
Xenopus	Group housed in water tanks or tubs with PVC pipe or a floating device that is removable and sanitizable. Dechlorinated water temp appropriate for species flushed daily post feeding, and free of significant debris. Nutritionally complete commercially available food, appropriate for the species	
Birds	Group housed if possible in smooth wire cages adequate for the species. Flight cages if possible or alternate enrichment made available. Perches adequate to prevent foot disease, fresh water available at all times, food nutritionally complete for the species, and access to materials for maintaining crop.	
Mice/Rats	Group housing whenever possible. ACP approved polystyrene, polycarbonate or other high temp solid bottom plastic cage fitted with a functioning filter-top. Cages may be connected to racks providing filtered air directly to the cage. Commercially available paper, wood chip or Corn Cob type bedding. Wire bar lid or frame. Water bottle or lixit for automatic watering. ACP approved feed in a feed hopper or wire bar lid.	Provision of <i>Nestlets</i> , sterilized paper, shepherd shacks or plastic enclosures
Hamster	Group house if possible. ACP approved polystyrene, polycarbonate or other high temp solid bottom plastic cage fitted with a functioning filter-top. Cages may be connected to racks providing filtered air directly to the cage. Commercially available paper, wood chip or Corn Cob type bedding. Wire bar lid or frame. Water bottle or lixit for automatic watering. ACP approved feed in a feed hopper or wire bar lid.	Provision of <i>Nestlets</i> , burrowing materials, such as sterilized paper, shepherd shacks or plastic enclosures
Guinea Pigs	Group house if possible. ACP approved Polystyrene, polycarbonate or other high temp plastic cage fitted with a functioning filter-top. Cages may be connected to racks providing filtered air directly to the cage or, standard designed, ACP approved guinea pig rack units. Commercially available paper, wood chip or Corn Cob type bedding. Wire bar lid or frame. Water bottle or lixit for automatic watering. ACP approved feed in a feed hopper or wire bar lid as appropriate.	Provision of <i>Nestlets</i> , burrowing materials, such as sterilized paper, shepherd shacks or plastic enclosures.

Rabbits	Group house or social contact if possible. Easily sanitizable wire bottom rabbit caging of appropriate size for the species. Social contact if possible. Water bottle or lixit for automatic watering. Nutritionally complete pelleted food per weight daily. Toys such as <b>PVC</b> sections may be placed in or attached to the cage. Small portions of timothy hay or other grass hay, offered up to three times per week but not enough to offset normal diet	Treat provisioning small portions of fruit, vegetables, alfalfa,
Ruminants	Group house or social contact if possible. Single housed animals must have visual/olfactory contact or positive human interaction at least 15 minutes/ day. Sheltered outdoor coral – secure chain link or pipe fencing, or indoor area supplied with dry straw for resting. Social contact if possible. Water source, trough or lixit, nutritionally complete pelleted feed per weight daily plus alfalfa hay supplement.	Sweet feed or salt block. Not to interfere with primary diet.
Swine	Indoor or sheltered outdoor housing of appropriate size based on weight. Social contact if possible. Water source, lixit, nutritionally complete pelleted feed per weight daily. Pigs 10 kg and under will be pair-housed if possible. Larger than 10 kg are singly housed in pens that provide visual, olfactory and tactile contact with other pigs. Toys will be rotated among the pigs, and sanitized between each animal. Kong toys, 10" " <i>Indestructible</i> " balls, plastic bottles/jugs. Pigs will receive positive human interaction on a daily basis.	Small portions of vegetables or fruit or other commercially available food, not to interfere with primary diet.
Cats	Group Housed in indoor caging of appropriate size with social contact unless not compatible. Water source, bowl or lixit, nutritionally complete feed per weight daily. Toys - balls, hanging toys or other appropriate toys at all times. Human interaction at least 15 minutes daily	Commercially available cat treats, not to interfere with primary diet.
Dogs	Pair housed in indoor or outdoor runs with area sized as appropriate for the number of occupants. Alternately, singly housed with social contact if study necessitates. Bedding or bunk clean and dry. Run cleaned daily. Water bowl or lixit available at all times. Nutritionally complete canine feed per weight daily. Toys, balls, compressed rawhide, hooves, thread ropes, and other approved objects rotated on a weekly basis. Positive human interaction daily. Exercise/ social sessions where singly housed animals are allowed time to interact with same sex, or allowed to explore/ interact through cage at least 3x/week.	Commercially available canine treats not to interfere with primary diet.
Non-Human primates	Indoor primate caging with perch, and play cage and/ or social group housing unless determine incompatible, or inconsistent with the objectives of the study and justified in the protocol. Clean cage daily. Lixit or bottle available at all times. Fed commercial primate food daily as determined to maintain weight. Food treats, novel food items such as fruit, nuts, or vegetables provided as rewards for positive human interaction, or as forage or browse. Safe Cage furniture consistent with the species, and easily sanitizable. Toys such ase Kong toys Nylabones or other approved objects.	Food treats not to interfere with primary diet. Novel toys or other devices, such as radio or television in a volume and manner not to interfere with the animal's normal behavior.