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## STANDARD OPERATING PROCEDURE

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**TITLE:** Environmental Enrichment / Rats / HSACF and WVB  
**SOP NO.:** 444-01  
**REVISION:**  
**EFF. DATE:** May 2010  
**SUPERSEDES:** NA

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### APPROVALS

Prepared by (print name): \_\_\_\_\_ Dept.: \_\_\_\_\_  
Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Reviewed by (print name): \_\_\_\_S. Fussell\_\_\_\_ Dept.: \_\_\_\_ACVS\_\_\_\_  
Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Approved by (print name): \_\_\_\_\_ Dept.: \_\_\_\_\_  
Signature: \_\_\_\_\_ Date: \_\_\_\_\_

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### 1.0 PURPOSE

- 1.1 To outline the various environmental enrichment strategies used to ensure welfare, encourage normal species-specific behaviour, decrease stress to reduce research variables and benefit research results, and provide consistent environments for all animals groups.

### 2.0 SCOPE

- 2.1 This SOP applies to all rats housed in the Health Sciences Animal Care Facility (HSACF,) West Valley Building (WVB) and Robarts Barrier Facility (RBF) at Western
- 2.2 It applies to all personnel involved in animal studies using rats in the above facilities.

### 3.0 RESPONSIBILITIES

#### 3.1 ANIMAL CARE (AC) STAFF

- 3.1.1 Monitor animal health and welfare daily, ensuring enrichment strategies are being used unless otherwise approved on an Animal Use Protocol (AUP).
- 3.1.2 Inform Veterinary Services (VS) of any observed stereotypic behaviours and implement requested new enrichment strategies to work to alleviate these behaviours. Maintain records in Animal Health Binder.
- 3.1.3 Reference any researcher notes at door, room, or cage level regarding enrichment needs.
- 3.1.4 Provide a stock of clean enrichment devices.
- 3.1.5 Inform manager/lead hand if sufficient supplies are not available.
- 3.1.6 If new enrichment devices are being tested, inform manager/lead hand and Veterinary Services about cage level observations.
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### 3.2 RESEARCH STAFF

- 3.2.1 All deviations from standard enrichment strategies must be included on an approved AUP.
- 3.2.2 Provide information at room and/or cage level regarding any alterations to the standard enrichment program for your species.
- 3.2.3 Work with ACVS staff to minimize stereotypic behaviours.

### 3.3 LEAD HAND AND/OR FACILITY MANAGER

- 3.3.1 Pass on any alterations to the standard enrichment programs to full-time and part-time AC staff.
- 3.3.2 Continue to obtain information on new forms of enrichment.
- 3.3.3 Work with veterinary staff to periodically evaluate and review the enrichment program.

## 4.0 PROCEDURE

- 4.1.1 Our enrichment strategies for rats are designed to promote natural, species specific behaviours; such as gnawing and chewing, seeking shelter or burrowing, and social interactions.
  - 4.1.2 Standard enrichment in rat cages in the facility include all of the following items:
    - A sheet of paper towel,
    - Solid-bottom cages with contact bedding
    - Large plastic tube, and
    - At least one cage mate
  - 4.1.3 Stereotypic or stress-related behaviours or signs in rats may include (but not limited to):
    - Aggressive fighting (i.e. neck wounds or attacks),
    - Porphyrin staining, around the eyes or on the face, and
    - Bar biting
  - 4.1.4 Placing 2 or 3 piece of chow on the cage bottom on cage day is another encouraged form of enrichment as it allows typical feeding behaviours (i.e. foraging, holding onto chow).
  - 4.1.5 Autoclaved sunflower seeds, popcorn, fruit etc. may also be provided for treats upon request.
  - 4.1.6 For animals which cannot have tubes due to study-related limitations, Enviro-dri crinkle paper will be provided.
    - 4.1.6.1 A nonnutritive nylon Nylabone may be substituted upon request.
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- 4.1.7 An important aspect of rat cage enrichment is that novel objects are not preferred by rats.
- 4.1.8 It is standard at ACVS to house rats with more than one animal per cage.
  - 4.1.8.1 If a pair of animals has outgrown the standard cage, colony cages are available for animals to be pair housed at large sizes.
    - 4.1.8.1.1 See current price list regarding per diem rates for colony cages
  - 4.1.8.2 If animals are fighting, a male breeder is retired, or animals have undergone a surgical procedure, it may be necessary to separate them into their own individual cage.
    - 4.1.8.2.1 If this is required, further enrichment should be provided to compensate for the loss of these cage mate interactions.
      - 4.1.8.2.1.1 This might include placing cages close together in order for the animals to see each other.

### 5.0 HEALTH & SAFETY

- 5.1 PERSONAL PROTECTIVE EQUIPMENT (PPE)
  - 5.1.1 ACVS Staff must wear clean scrubs while performing all animal care duties.
    - 5.1.1.1 Discard scrubs to laundry at the end of each work day.
  - 5.1.2 PPE is not required if you are only observing the animals and not handling them.
  - 5.1.3 Wear gloves when filling water bottles.
  - 5.1.4 Wear gloves and a NIOSH approved mask when handling animals and caging.
  - 5.1.5 Wear gloves, a NIOSH mask, bonnet and safety glasses when dumping dirty bedding.
  - 5.1.6 Report all rat bites to your supervisor and UWO Workplace Health.
- 5.2 All ACVS staff will be enrolled and monitored as per the UWO Preventative Health Program for Animal Handlers Policy by UWO Workplace Health.

### 6.0 REVISION HISTORY

Revision	Reason(s) for Revision	Initiated by

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### 7.0 REFERENCES / ASSOCIATED MATERIALS

#### 7.1 Enrichment Device Information:

- 7.1.1 **Enviro-dri:** [http://www.ssponline.com/enviro\\_dri.htm](http://www.ssponline.com/enviro_dri.htm)
- 7.1.2 **Nylabone:** [www.bio-serv.com/newcatalog/eeprod/rodent/nylabone.html](http://www.bio-serv.com/newcatalog/eeprod/rodent/nylabone.html)
- 7.2 [CCAC 3 R's Microsite – Environmental Enrichment](#)
- 7.3 [CCAC Chapter VI - Social and Behavioural Requirements of Experimental Animals](#)
- 7.4 [CCAC – Module 07 Core A – Environmental Enrichment](#)
- 7.5 [Comfortable Quarters for Laboratory Animals](#)
- 7.6 Environmental Enrichment and Refinement for Rodents and Rabbits: An Annotated Bibliography- [http://www.awionline.org/www.awionline.org/Lab\\_animals/biblio/rabrodent.html](http://www.awionline.org/www.awionline.org/Lab_animals/biblio/rabrodent.html)
- 7.7 CCAC Species-Specific Resources: [http://www.ccac.ca/en/alternatives/species-resources\\_ressources-especes/rats.html](http://www.ccac.ca/en/alternatives/species-resources_ressources-especes/rats.html)
- 7.8 Environmental Enrichment for Laboratory Rodents and Rabbits: Requirements of Rodents, Rabbits, and Research; ILAR Journal, 46, pp. 162-170 (2005).
- 7.9 Modifications to Husbandry and Housing Conditions of Laboratory Rodents for Improved Well-being; ILAR Journal, 46, pp. 14-147 (2005)