

## Section D13: Satellite Housing

The Guide for the Care and Use of Laboratory Animals (The Guide, NRC 2011) states: “Animals should be housed in facilities dedicated to or assigned for that purpose, not in laboratories merely for convenience. If animals must be maintained in a laboratory to satisfy the scientific aims of a protocol, that space should be appropriate to house and care for the animals and its use limited to the period during which it is required. If needed, measures should be taken to minimize occupational hazards related to exposure to animals both in the research area and during transport to and from the area.” (p. 134) **Satellite housing approval is required whenever:**

- USDA-regulated mammals kept outside of LARC is discouraged. If housing outside of LARC is needed for more than 12 hours, the Principal Investigator must consult with the Attending Veterinarian and/or IACUC Chair before planning any experiments. This includes hamsters, gerbils or guinea pigs that would require housing the animals outside LARC **more than 12 hours**.
- Rodents and lower species (such as fish) are kept outside of LARC **for more than 24 hours**.

Approval for satellite housing will be allowed only if the IACUC is assured that proper housing conditions are met and justified. Approval will not be granted for convenience or cost saving reasons. For more information about the requirements for Satellite housing, please refer to the [IACUC policy on Satellite Housing](#).

The proposed satellite housing area must be inspected for suitability before approval is granted. Once an area is approved for satellite housing, it will be subject to semi-annual IACUC inspections. All satellite areas must be accessible to the LARC Veterinary Personnel at all times. The Principal Investigator is responsible for the safety and security of the animals in his/her satellite facility.

### Satellite Housing Location

**If animals used in this protocol will be housed or held outside of any LARC or MRI animal facility for prolonged time, please complete the table with the appropriate information:**

Building and Room Number	Number of animals at any one time	Length of time animals will be housed	Contact Person and Phone Number of person who is responsible for animal care
R6 – 111	15	48 hours	Tom Jones – 317-274-0000

**Justification** for housing animals outside the designated animal facility for more than 12 consecutive hours:

Animals are housed outside of LARC to allow the use of specialized equipment. This specialized equipment cannot be moved or stored in LARC because of its large size and high sensitivity to being moved and disruption on data measurement.

### Satellite Housing Consultation

**When housing outside a LARC facility, you must consult with a LARC Facility supervisor to make arrangements for the handling of the caging/feed/bedding/supplies.**

Name of LARC Supervisor consulted	Angie Bohall/Dr. Crisler	Date of consultation	7.20.2016
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### Heating, Ventilation and Air Conditioning (HVAC) System Summary

Room Number	Use	Air Source % Fresh/ Recirculated	Treatment Filtered/ Absorbers, etc.	Air Changes	Pressure	Humidity Controlled	Date Assessed
R6-111	Housing	100% Fresh	Housed in a human infant incubator. Micro-environment is monitored (air, temp, humidity light cycle. Veterinarians have access to the animals)	17.9/hr	Neutral	Y	6.2.2016

### Care of Animals

**Animal Handling (if needed, consult with LARC Veterinarians and/or Environmental Health Safety to answer the following questions)**

Indicate what PPE (Personal Protective Equipment) is necessary when handling the animals:      disposable gowns, mask, non-latex gloves

Zoonotic Agents associated with this species:

What are they?	<p>The risk of transmission of zoonotic agents from working with laboratory-reared rodents is very low. However, bite wounds and skin scratches in humans may become infected and must be treated through immediate cleansing and follow-up through IUPUI Health Services.</p> <p>Rats &amp; mice:</p> <ul style="list-style-type: none"> <li>• Bacteria: <i>Staph spp.</i>, <i>Strep. spp.</i>, <i>Salmonella spp.</i>, <i>E. coli.</i> etc.</li> <li>• Fungi: <i>Microsporum gypseum</i> &amp; <i>Trichophyton spp</i> (ringworm)</li> <li>• Viruses: Lymphocytic Choriomeningitis Virus (LCMV), Hantavirus]</li> <li>• Parasites: <i>Ornithonyssus bacoti</i> (tropical rat mite), <i>Rodentolepis nana</i> (tapeworm)</li> </ul> <p>Zebrafish:</p> <ul style="list-style-type: none"> <li>• Bacteria: Atypical Mycobacterium species (<i>M. marinum</i>, <i>M. haemophilium</i>, <i>M. fortuitum</i>, <i>M. chelonae</i>), <i>Aeromonas hydrophila</i>, <i>Edwardsia ictaluri</i>, <i>Erysipelothrix rhusiopathiae</i> (fish handler's disease), <i>Photobacterium damsela</i>, <i>Salmonella spp.</i>, <i>Strep. iniae</i></li> </ul> <p>Xenopus:</p> <ul style="list-style-type: none"> <li>• Bacteria: Atypical Mycobacterium species (<i>M. marinum</i>, <i>M. haemophilium</i>, <i>M. fortuitum</i>, <i>M. chelonae</i>), <i>Aeromonas hydrophila</i>, <i>Edwardsia ictaluri</i>, <i>Salmonella spp.</i>, <i>Chlamydia pneumoniae</i>, <i>Chryseobacterium spp.</i></li> </ul>
What precautions should be taken to protect personnel?	PPE, hand washing, general lab safety as outlined by EHS, IUPUI Health Services, and described in CITI Training
What are the clinical signs that might indicate that someone working with these animals has contracted a zoonotic disease?	Skin lesions, Flu-like symptoms
Are there any other risks such as bite wounds, etc. associated with this species?	Bite wounds
Describe how animals are to be handled?	For mice- Grasp the loose skin on the back starting near the ears using your thumb and first two fingers. Grip should be firm enough to keep the mouse from struggling, but gentle enough for it to breathe comfortably.
Are there tools used for restraint?	If needed, forceps
If yes, are these tools dedicated to a particular animal or a set of animals?	Set of animals
How are the tools sanitized?	Autoclave or chemical disinfectant applied following manufacturer's directions
What should be done if an animal escapes?	If a rodent escapes from the cage into the room, it will be recaptured in a safe and gentle manner as quickly as possible. If advice is needed, the investigator can contact a LARC facility supervisor or veterinarian. If the animal escapes from the room and cannot be caught, the IACUC, campus Biosafety Officer, and LARC Director must be notified.
If animal makes contact with the floor, should it be returned to the original primary enclosure or are there additional steps for cleaning/isolating this animal?	It will be singly housed until consultation with LARC Vet.
Health checks: All animals must be checked daily, including weekends and holidays. What is the procedure for checking animals?	Monitoring and documentation for the following parameters will be conducted daily: <ol style="list-style-type: none"> <li>1. Proper room conditions (temperature, ventilation, lighting)</li> <li>2. Presence/absence of health problems</li> <li>3. Adequate food and water levels</li> <li>4. Proper cage/enclosure conditions</li> </ol>
What clinical or behavioral signs denote an animal may be sick or otherwise compromised?	For mice, changes in behavior (depression, lethargy, decreased grooming or nest-building, aggression), decreased food or water consumption, decreased fecal or urine output, lameness, muscular rigidity, rough hair coat, hunched posture.
What steps are taken with this animal and to whom does the investigator report the health case (supervisor, LARC Veterinary Services)?	LARC Veterinary Service

#### Feed/Watering of the Animals

What type of food (brand/source is used)?	LabDiet 5002
How is the food stored?	Conditions of < 72°F/21°C and ≤ 50% relative humidity
How is the expiration date determined?	Manufacturer's expiration date
How often and how much is given of both feed and water?	Animals should be fed amounts of food to

	provide at least their maintenance requirements. Animals will have food and water present in their cage at all times.
Describe water treatment and water quality assessment.	Reverse osmosis
What is done with excess food in enclosure?	Disposed

#### Primary enclosures (tank or cage):

Note: An agreement must be made with the LARC facility supervisor on handling cages borrowed from a LARC facility.

Describe the enclosure	Solid bottom caging with bedding is preferred
Indicate the number of animals (minimum and maximum per enclosure)	5
Will animals outgrow their enclosure, and at what point will they be transferred to larger housing?	This is not likely to occur for mice.
Are animals provided enrichment? If not, what is the justification?	Mouse houses/igloos

#### Procurement of Animals from Vendors

How are animals transported to housing locations?	LARC
Are health checks conducted upon arrival?	Yes, by LARC staff
Who conducts the health check?	LARC staff

#### Quarantine Procedures

Is a separate tank/enclosure provided to quarantine new arrivals and or sick animals?	NA – quarantine is done by LARC
Where is the location of the quarantine enclosure?	
Are special arrangements made to check workflow when dealing with sick or new animals so as not to introduce disease to the rest of the colony?	
Is the health of newly arrived animals monitored? If so, by whom?	

#### Sanitation

The PI is responsible for complying with species-specific sanitation requirements per the *Guide for the Care and Use of Laboratory Animals* 8<sup>th</sup> edition and/or LARC SOP's. The housing area must be easily cleaned and sanitized. If the investigator is performing washing/sanitizing/environmental monitoring themselves (instead of using LARC services), documentation of methods used must be maintained by the PI. (Complete all aspects of charts below):

Micro-environment (primary enclosure)	Washing/Sanitation method (Mechanical wash, hand-wash, high-pressure sprayers, etc.)	Washing/Sanitizing Frequency	Tools and Detergents used	Temperature of water to be used
Cage Bottom	Obtained from LARC's clean cage wash	At least once weekly for static cages	Per LARC Policy	Per LARC Policy
Cage Lids/Filter	Obtained from LARC's clean cage wash	At least once every 2 weeks	Per LARC Policy	Per LARC Policy
Cage Racks and Shelves	Hand washed	Once per week	PI will purchase and use an appropriate disinfectant in consult with LARC. Example: 10% bleach solution made fresh on the day of use with 10 minute contact time followed by water rinse	Temperature not critical for hand-washing racks/shelves
Aquatic, amphibian, and reptile tanks and enclosures				
Feeders	Obtained from LARC's clean cage wash	At least once every two weeks	Per LARC Policy	Per LARC Policy
Watering Devices	Obtained from LARC's clean	At least once per	Per LARC Policy	Per LARC Policy

	cage wash	week		
Exercise Devices				
Transport Cages				

Macro-environment (rooms, floors, etc)	Washing/Sanitizing Frequency	Detergents/Agents Used	Environmental monitoring (with LARC) Yes/No
Animal Room: Floors	Weekly	PI will purchase and use an appropriate disinfectant in consult with LARC	Yes (working with LARC on appropriate monitoring)
Animal Room: Walls	Weekly	PI will purchase and use an appropriate disinfectant in consult with LARC	Yes (working with LARC on appropriate monitoring)
Animal Room: Ceilings	Weekly	LARC approved disinfectant	Yes (working with LARC on appropriate monitoring)
Animal Room: Ducts/Pipes	Weekly	LARC approved disinfectant	Yes (working with LARC on appropriate monitoring)
Animal Room: Fixtures	Weekly	LARC approved disinfectant	Yes (working with LARC on appropriate monitoring)
Support Areas*: Floors			
Support Areas*: Walls			
Support Areas*: Ceilings			
Support Areas*: Ducts/Pipes			
Support Areas*: Fixtures			
Implement**: Mops			
Implement**: Mop Buckets			
Implement**: Aquaria Nets			
Implement**: Other			
Other:			
* Support Areas include (surgery, procedure room, etc.)			
** Implement: note whether or not shared			

### Primary Enclosures and Animal Space Provisions

Please complete the table below considering performance criteria and guiding documents (e.g. The Guide and/or other applicable standards) used by the IACUC/LARC to establish adequacy of space provided for all research animals including traditional laboratory species, agricultural animals, aquatic species and wildlife when reviewing biomedical, field and agricultural research studies.

Species	Dimensions of Enclosure (cage, pen, tank*, etc.)	Maximum Number Animals/Enclosures	Guiding Document Used to determine the Space Standard	Enclosure Composition & Description**
mouse	25 x 16 x 13 Cages provided by LARC (vary depending on which facility they come from)	4 - 5	The Guide	polycarbonate (clear) box
Rat	Cages provided by LARC (vary depending on which facility they come from)	2	The Guide	polycarbonate (clear) box

\*For aquatic species, provide tank volume.

\*\*Include descriptors such as open-topped, static micro-isolator, individually-ventilated cage systems.

### Aquatic Systems Summary

Please summarize water management and monitoring information programs for each animal facility, including all satellite facilities/rooms/enclosures. The following key will assist you in completing the form:

- (1) List location of aquaria, including outdoor enclosures (ponds or outdoor tanks). If indoors, list building and room number. Note that all species housed at the same location and maintained via the same design and monitoring may be listed in the same row.

- (2) Please indicate if embryonic (E), larval (L), juvenile (J) or Adult (A)
- (3) Group tanks (ponds, outdoor tanks, multiple aquaria) are arranged as arrays with shared water supply; individual aquaria have exclusive water handling systems.
- (4) Indicate water type, e.g., fresh, brackish, or marine.
- (5) Indicate water circulation, e.g., static, re-circulated, constant flow, or some combination of these. If applicable, indicate water exchange frequency and amount (percentage).
- (6) Provide a key word for filtration employed, e.g., biological, chemical, mechanical, etc. and type (e.g., mechanical-bead filter). A diagram may be provided showing the flow of water, filtration, source of “make-up” water and amount replaced daily.

**Part I**

Location (1)	Species (2)	System Design					
		Group / Individual (3)	Water Type (4)	Pre- treatment	Circulation (5)	Filtration (6)	Disinfection (e.g., UV, ozone)

**Part II**

Monitoring									
<i>Indicate in the boxes below the frequency of monitoring and method of control for the following parameters. (1)</i>									
Location (from Part I)	Temperature	Salinity	pH	NH <sub>4</sub>	NO <sub>2</sub>	NO <sub>3</sub>	Dissolved O <sub>2</sub>	Total Dissolved gases	Other. Please List (2):

- (1) In these columns, please indicate monitoring frequency, e.g. daily, weekly, monthly or other point sampling frequency; continuous/real time, or none, if applicable. Also indicate method of control (heaters versus room HVAC, hand versus auto dosing, etc.).
- (2) Indicate other parameters and their monitoring frequency, e.g., alkalinity, total hardness, conductivity, chlorine/chloramine, etc.

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## Disaster Recovery/Emergency Plan

This plan pertains to unplanned events that could cause death or major injuries to employees (or animals), disrupt operations, cause physical or environmental damage, or threaten our facility's financial standing or public image (*i.e.*, the Federal Emergency Management Agency definition of a disaster). The goal of this plan is to summarize the disaster-preparedness procedures that have been established and to address the requirements for such a plan put forth by the USDA Animal Plant Health Inspection Service (APHIS) and the 8th edition of the NRC Guide for the Care and Use of Laboratory Animals (The Guide).

On December 31, 2012, APHIS published a final rule that requires all dealers, exhibitors, intermediate handlers, carriers, research facilities, and other entities regulated by the Agency under the Animal Welfare Act (AWA), to take additional steps to better prepare for potential disaster situations. Registered entities are required to develop a plan for responding to and recovering from emergencies most likely to happen to their facility, as well as train their employees on those plans and review the plans annually.

*The Guide* requires that animal facilities have a disaster plan that:

...should define the actions necessary to prevent animal pain, distress, and deaths due to loss of systems such as those that control ventilation, cooling, heating, or provision of potable water. If possible the plan should describe how the facility will preserve animals that are necessary for critical research activities or are irreplaceable...Animals that cannot be relocated or protected from the consequences of the disaster must be humanely euthanized. The disaster plan should identify essential personnel who should be trained in advance in its implementation. (p. 35)

Therefore, a Disaster Plan should ensure the protection of three critical components:

1. Environmental Health and Safety-to protect personal and environmental health of both employees and those in the surrounding community.
2. Animal Welfare – to ensure cared and/or humane euthanasia is provided.
3. Business Continuity – to ensure critical and unique animal resources (strains, data, and tissues) are preserved, and research operations can resume following a disaster.

Types of Disasters to think about and have a plan for:

- Catastrophic Earthquake
- Fire
- Workplace Violence
- Animal/Crop Eco-terrorism
- Bomb
- Active Shooter
- Public/Sports Event Disturbance
- Public Health Emergency
- Utility Failure
- Civil Disturbance

As part of the planning process, the program must identify mission critical activities, establish priorities, identify performance requirements, and identify potential limitations. Some of these activities are covered under University Wide processes, however, you, as the PI are responsible to ensure your animals in your satellite housing area(s) are taken care of in a disaster.

<b>Plan Details</b>	
Who is in charge?	Dr. XXXXXXXX
When will the plan be activated?	As soon as is required/necessary to ensure the welfare of humans and animals.
What actions will be taken?	The IACUC office and LARC Director will be contacted. If animals that are in the satellite housing area room XXX need to be relocated, the closest LARC animal facility will be consulted and used if possible. Animals that cannot be relocated or protected from the consequences of the disaster will be humanely euthanized. If appropriate to the nature of the emergency, other emergency responders will be notified for assistance such as campus facility services (317-278-1900), police, fire department, environmental health and safety.
How will the necessary actions be carried out?	The animals will be moved in the appropriate caging from room XXXX to the closest LARC animal facility using the service elevator that provides direct access to the animal facility. If the service elevator is not functioning, the stairs will be used to carry the covered cages.