Animal Care Matters

An IACUC and ARF e-Newsletter

Spring 2009

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From the IACUC Administrator — Stephanie Cook

WHERE'S MY ANIMAL USE PROPOSAL/ AMENDMENT/RENEWAL?

The IACUC Review Process

I get a lot of calls from researchers wondering what happens to a proposal after the initial, full-committee review. Below is an excerpt from our PHS Assurance (Section D, Parts 6-9) approved on 10/28/08, outlining the IACUC approval process:

The IACUC will:

6. Review and approve, require modifications in (to secure approval), or withhold approval of those activities related to the care and use of animals as set forth in the PHS Policy at IV.C. The IACUC procedures for protocol review are: Requests for animal use are made by submitting an "Animal Use Proposal" form to the IACUC. A complete copy of the Animal Use Proposal is sent to each member of the IACUC. Two committee members are assigned as principal reviewers for each proposal. The principal reviewers present their analysis of the proposal to the committee at a convened meeting. All members are afforded the opportunity to comment and/or ask questions about the proposal. Members who cannot attend a meeting may relay questions or comments via the Chairperson or another committee member. A quorum must be present at the meeting to conduct reviews and vote. Following the committee review, the members may vote to approve, require modifications, or withhold approval of the proposal. If by majority vote the IACUC requires modifications of a proposal to secure approval, the committee will: 1) assign one or more members as designated reviewers for the modified proposal or 2) table final action. The default process is for the modified proposal to be reviewed by a designated reviewer; however, *any committee member*, present or not, may require full committee review of the modified proposal. If the IACUC uses a designated reviewer for the modified proposal, the Chairperson assigns one or more members who may approve the modified proposal, require additional modifications to secure approval, or refer the proposal back to the entire IACUC for full committee review. If more than one designated reviewer is assigned then the modified proposal is either unanimously approved by the designated reviewers or it must undergo full committee review. If a final action on the proposal is tabled, the modified

ANIMAL ORDER DEADLINE

Thursdays @ 2:00pm is the cutoff for ordering animals needed the following week. This allows the ARF sufficient time to clarify any issues that may arise due to incomplete information from the PI as well as unforeseen vendor problems. If you are ordering animals, please make someone familiar with the order available on Thursdays to answer questions. Charlotte wants you to have your animals when you need them.

FROM THE IACUC CHAIR

The recent round of RFPs for stimulus grant funds could have direct and significant impact on animal research work here at USC. The following is adapted from a proposal submitted by USC.

Funds of $4.5 million are requested by the University of South Carolina (USC) Columbia campus for renovating three existing animal facilities and completing construction in unfinished space on a fourth. The specific aims of this project are: to complete construction of unfinished space by purchasing and installing a tunnel washer, a rack washer, an autoclave, a bedding dispenser, a bottle filler and high density, ventilated rodent animal housing; to increase the animal housing capacity of the University by converting the centrally administrated Animal Resource Facilities (ARF) to high density ventilated rodent housing to increase housing capacity and protect the health of the rodents and personnel; and to improve biocontainment and barrier capabilities by utilizing class II biosafety cabinet animal changing stations, misting tunnels, and HEPA-filtered bedding dumping stations. This will protect the health of the rodents and personnel and increase the faculty's ability to work with hazardous agents in research animals.

This funding would allow the opening of the Discovery I facility as well as expansion of animal housing within each current facility located on any of the Columbia campuses - a 300% increase!

- Ken Walsh, Ph.D.

WHERE'S MY ANIMAL USE PROPOSAL/AMENDMENT/RENEWAL? (con't)

proposal will be reviewed by the entire committee at a convened meeting. Investigators are notified in writing about the status of their proposal and the specific modifications required to secure approval. If the IACUC votes to withhold approval the investigator may present a new proposal for *de novo* review. Records of meeting attendees are kept as part of the meeting minutes. A quorum is required for convening a meeting and conducting reviews. A committee member who may have a conflict of interest on a specific proposal, e.g., Principal or Associate Investigator, is required to leave the meeting during review of that proposal and may not vote on the proposal. In special circumstances the IACUC Chairperson may poll the committee to allow designated review of a proposal. In this case, the complete proposal is provided to each IACUC member for review. After a reasonable time period the members are polled to check if a convened meeting is required. If no member requests a convened meeting, the Chairperson can designate one or more reviewers who may approve the proposal, require modifications to secure approval, or refer the proposal to the full committee for review. If any member requests a review by a convened meeting of the full committee, designated review may not be conducted.

7. Review and approve, require modifications in (to secure approval), or withhold approval of proposed significant changes regarding the use of animals in ongoing activities as set forth in the PHS Policy IV.C. The IACUC procedures for reviewing proposed significant changes in ongoing research projects are: Significant changes (amendments) are submitted in writing to the IACUC, and complete copies are distributed to each member. The proposed changes are discussed at a regular meeting of the IACUC and, following discussion, voted upon. The IACUC may approve the changes, require additional information to complete its review or require modifications (to secure approval). If modifications are required, the procedures described in D.6 above apply.

8. Notify investigators and the institution in writing of its decision to approve or withhold approval of those activities related to the care and use of animals, or of modifications required to secure IACUC approval as set forth in the PHS Policy IV.C.4. The IACUC procedures to notify investigators and the institution of its decisions regarding protocol review are: Following an IACUC meeting, the recommendations and decisions of the committee are sent to the investigator in writing from the IACUC Chair. The specific areas for modification and/or clarification are outlined in the letter. When the Animal Use Proposal (protocol) is approved an Animal Use Proposal identification number is assigned. An approval letter with the AUP number and date of approval is sent to the Principal Investigator and a copy sent to Sponsored Programs and Research.

9. Conduct continuing review of each previously approved, ongoing activity covered by PHS Policy at appropriate intervals as determined by the IACUC, including a complete review in accordance with the PHS Policy at IV.C.1-4. at least once every three years. The IACUC procedures for conducting continuing review are: Animal Use Proposals are approved for a maximum of three years. Prior to the first and second anniversaries of approval the IACUC requires the investigator to submit an "Annual Update of Proposal" for IACUC review. If the investigator fails to provide the Annual Update or the IACUC requires additional information to complete the review, further animal use may be deferred until the review is completed by the IACUC. If a project is to continue beyond three years, the investigator must file a complete new Animal Use Proposal for IACUC review with an additional section for description of work already accomplished. The three year renewal is reviewed in the same manner as a new proposal (D.6 above).

The End

New Cage Density Policy Approved

This policy is based on guidelines given in the National Research Council's *Guide for the Care and Use of Laboratory Animals (Guide)* and has been designed to ensure that mice are housed in a manner that promotes their health and well being and avoids overcrowding. Cage overcrowding usually occurs in mouse breeding colonies when litters are not weaned on time, excessive number of breeder animals are housed in a small cage, or weanling mice are not separated as they get older.

Breeding cages exceeding the listed limits are considered to be overcrowded cages. Preventive measures can be taken to avoid an overcrowded cage by weaning animals in a timely manner and by removing dams prior to giving birth. The capacity is also set to reduce the incidence of morbidity and mortality due to trampling by older animals in the cage. Because of the health concern, overcrowded cages are considered to be an animal welfare issue.

Density recommendations in the *Guide* (see pp 25-28) are for a 75 square inch cage which would allow up to 5 adult mice, 2 adult mice with up to 7 offspring, less than 10 grams body weight (weaning age) or 3 adult mice with up to 5 offspring, less than 10 grams body weight. However, the USC IACUC recommends the following:

II. USC Cage Density Guidelines

1. The *Guide* recommendations of 15 square inches floor space per adult mouse will be followed for all mouse cages housing adult animals.

2. Mouse breeding schemes which can be utilized in include:

A) Continuous breeding of monogamous pairs. Prompt weaning of offspring should preclude overcrowding. Guidelines for number of pups/cage will be the same as for other breeding schemes (ie up to 12 offspring less than 10 grams body weight).

B) Trio breeding schemes (1 male with 2 females) and up to 12 offspring less than 10 grams body weight are allowed in a 75 square inch cage. This allows for the presence of at least 2 litters containing 6 or fewer pups per litter, or one large litter of 12 or fewer pups.

C) If other breeding schemes are used (1 :3, 1:4 or 2:3), then all pregnant females must be removed to a separate cage, prior to parturition (i.e., no pups are allowed to be born into the adult only cage).

III. Management Techniques

To prevent excessive soiling of caging or overcrowding, the following management techniques may be utilized by research and animal husbandry personnel:

1. Professional judgment about cage conditions and utilization of an increased frequency of cage changing will be used by husbandry personnel when more than one litter is present in the cage, a single large litter is present, or all pups are approximately the same age and approaching weaning size.

2. If litter size is expected to be greater than 6 pups/litter, and a litter of 6 or more pups is already present in the cage, then the second pregnant female must be removed from the cage, prior to parturition.

3. Investigators will be encouraged to decrease litter size, by culling of unwanted offspring, prior to day 14 of age. This would entail early culling of mice with undesired phenotypes, of undesired sex, or of undesired genotypes.

4. Investigators will be encouraged to increase vigilance of their breeder cages, and to wean pups promptly, to prevent more than 2 litters being present in the cage at one time.

New Cage Density Policy Approved (*con't.)*

IV. Policy Implementation

1. Exceptions to this policy are considered to be exceptions to the *Guide* and require a written scientific justification in the Animal Use Protocol. The exception request must provide adequate scientific justification f~r not following the *Guide* and will be reported, as required, to accreditation and regulatory agencies.

2. Husbandry personnel will monitor cage density as part of their routine duties, and facility managers will notify researchers and/or their designated contact person via email, by phone, or in person if overcrowded cages are discovered.

3. If there is no response from the investigator within 48 working hours, husbandry personnel will take appropriate action to correct the problem (i.e., remove post-parturient females and their newborn pups from adult only or overcrowded breeding cages, wean animals, etc). A per-cage charge may be levied for each cage set up.

4. If three instances of non-response by a single investigator and/or their staff occur within a three-month period, ARF personnel will notify the IACUC promptly.

5. ARF reserves the right to separate immediately, or change the cage of any animals when animal welfare concerns exist. ARF will not be responsible for errors in separated cages.

NEW Approved Lentivirus Safety Protocol

This SOP was approved by USC's Institutional Biosafety Committee in September 2008. Anyone using lentiviruses in animals must be approved by the IBC and comply with this policy.

SAFETY PROTOCOL FOR USE OF A HAZARDOUS AGENT IN ANIMALS

PROCEDURE:

ADMINISTRATION OF REPLICATION-DEFICIENT LENTIVIRAL VECTORS BY INTRACRANIAL INJECTION

Agent Name:	Lentivirus
Hazard(s):	The virus used in animals is a replication-deficient virus, which has been modified so that it cannot reproduce or cause infection. It is used as a means of introducing genetic material into body cells. It does not cause disease in people or in the animals. Although the virus cannot reproduce, there is a very minute chance that it could revert to a replication competent lentivirus. Therefore, personnel will utilize animal biosafety level 2 (ABSL-2) work practices, procedures, and safety equipment for all work involving laboratory animals infected with this virus.

PERSONAL PROTECTION REQUIRED

1. For all handling of virus- injected animals in C17:

- Dedicated laboratory coat
- Gloves

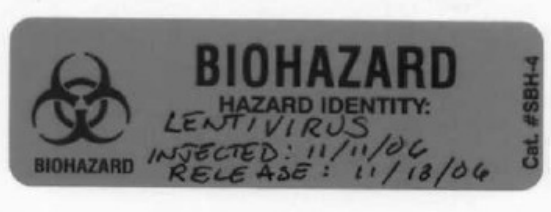
2. Entering the P2 area:
   - Tyvek coverall
   - Gloves
   - Particle or surgical face mask
   - Cap

DECONTAMINATION

Equipment and work surfaces are routinely decontaminated with an appropriate disinfectant after work with lentivirus, and after any spills or other visible contamination. This includes 70% ethanol, Roccal, or bleach solution for 15-20 minutes.

ANIMAL MANIPULATIONS

1. Lentivirus will be transported into the surgical site with two levels of containment (i.e. durable, leak-proof secondary container).
2. Animal manipulations likely to generate aerosols will be conducted in a Class II biosafety cabinet.
3. Cage Signage: Cages must be labeled with Biohazard labels and completed as follows:
   a. Indicate date injected
   b. Indicate when animals may be returned to colony (72 hours after injection)



4. Door Signage: The entrance door to the room where animal manipulations occur should have biohazard signage and be designated as ABSL-2.
5. All wastes from the animal room (including animal tissues, carcasses, and bedding) will be transported from the animal room in durable, leak-proof containers.
6. After intracranial injection, the animals will be housed in designated biocontainment rooms for 72 hours. During this time, any manipulation requiring the opening of the microisolator top will be performed by the laboratory staff in a BL2 designated area, using appropriate protective gear (labcoats, gloves, mask). Sites where the animals are used should be disinfected with 70% ethanol, Roccal, or bleach solution during this period.
7.. After 72 hours, the animal will be placed in a clean cage as described below. The dirty cage will be autoclaved and then processed through cage wash as a normal cage. The animal may then be returned to the regular colony. No special handling of the animal or cage is required after this time.

Lentivirus Safety Protocol (cont'd)

CAGE CHANGING PROCEDURE (First cage change after injection)

1. Place soiled cages with water bottles in red autoclavable biohazard bag. Place the bottle upright in a separate cage with the sipper tube inverted. Do not dump the water out. Place the cage containing the bottles in a red autoclavalbe bag. The biohazard bag should then be taped shut and sprayed down with Roccal, 70% ethanol, or bleach solution prior to transporting to the autoclave.
2. Autoclave the dirty cages and bottles in the biohazard bag.
3. Process the autoclaved cages, lids, and bottles normally through cage wash.
4. Racks, carts, and other equipment in the room should be wiped with disinfectant (Roccal) prior to leaving the room to be washed in the rack washer.

SHARPS MANAGEMENT for intracranial injections

1. Needles and syringes or other sharp instruments should be limited to use only when there is no alternative (i.e. injections, blood collection, etc.)
2. Needles and injectors used for intracranial injections should be decontaminated using 70% ethanol or 10% bleach and a 20 min decontamination period after use.
3. Injector needles must not be bent, broken, removed from disposable syringes, or otherwise manipulated by hand before decontamination.
4. All other needles should be disposed of in a biohazard sharps container.

SPILLS

Spills involving lentivirus will be contained, decontaminated, and cleaned up by the laboratory staff immediately. The following procedures will be followed in the event of a biological spill:

- Alert people in immediate area
- Put on additional appropriate personal protective equipment as needed (gloves, lab coat, mask, etc.)
- Remove sharps with forceps, dust pan or other mechanical device
    - Place sharps in biohazard sharps container
- Cover spill with absorbent material (i.e. paper towels)
- Pour a fresh 10% bleach or 70% ethanol solution around edges and work inward (avoid splashing)
- Allow 20 minute disinfectant contact time
- Use absorbent material to wipe up spill
- Place all clean-up materials in a biohazard bag and autoclave
- Clean area again with fresh absorbent and disinfectant
- Remove gloves & other PPE and thoroughly wash hands

FIRST AID for exposure

1. **Percutaneous Exposure (i.e. needle stick, cut, animal bite)**

   Flush the exposed area with soap & water; use disinfectant if possible.

2. **Mucous Membrane Exposure (i.e. eyes, nose, or mouth)**

   Flush the exposed area with water. If exposure is to the eyes, separate the eyelids with your fingers and thoroughly flush your eyes using the eyewash station.

REPORT ANY EXPOSURE TO THE SUPERVISOR IMMEDIATELY. Then seek medical attention as necessary. Inform the clinical personnel about the route of exposure (i.e. droplet into eyes, needle stick, etc.) and agent causing the exposure. A USC Incident Report should be completed following appropriate medical evaluation.

UNIVERSITY OF SOUTH CAROLINA

ANIMAL CARE MATTERS

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Animal Resource Facilities
School of Medicine
Graduate Science Research Center, Ste. 102
Columbia South Carolina 29208

Phone: 803/777-8106

Fax 803.777.2849

Email: *iacuc@mailbox.sc.edu*

We're on the Web !!
http://uscm.med.sc.edu/ARF/index.htm

ANIMAL ORDERS ARE DUE NO LATER THAN 2:00 PM ON THURSDAY of EVERY WEEK. ONLY THOSE ORDERS that are ON TIME, made ON APPROVED ANIMAL USE PROPOSALS and FOR APPROVED SPECIES/STRAINS WILL BE FULFILLED.

Please note that Harlan is now using gel-paks rather than potatoes for shipping, increasing shipping costs ≥$3.90 per box

Change is good. . .Change is good. . .Change is good. . .

The address listing for the IACUC is now *ANIMAL CARE COMM, SOM*. This is the name that will come when you search for "IACUC" in Outlook's Global Address List. This change came as a surprise after a lookup for "IACUC" revealed the new name.

Animal Care Matters is published four times a year by the Institutional Animal Care and Use Committee (IACUC) and Animal Resource Facilities (ARF) of the University of South Carolina (USC).

The IACUC is an institutional body appointed by the USC President to oversee the program for the humane care and use of all vertebrate animals used for research, teaching, and training. Any investigator who intends to use laboratory animals must submit an Animal Use Proposal (AUP) to the IACUC for its review and approval.

The ARF provides care and maintenance of all animals used by investigators. Preventive care is provided through vendor animal health evaluations, quarantine programs, and sentinel animal diagnostics. Special care and services can be provided upon request.

Comments and submissions for **Animal Care Matters** are welcome and should be directed to Stephanie Cook, IACUC Administrator, at 777-8106 or *iacuc@mailbox.sc.edu*.

IACUC Meetings 2009

Meeting Date	AUP Deadline
Jan 8	Dec 18
Feb 5*	Jan 28
Mar 5	Feb 25
Apr 2	Mar 25
May 7	Apr 29
Jun 4	May 27
Jul 2	Jun 24
Aug 6*	Jul 29
Sep 3	Aug 26
Oct 1	Sep 30
Nov 5	Oct 28
Dec 3	Nov 18

*semi-annual

IACUC MEMBERSHIP

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Ken Walsh, Ph.D.

MEMBERS
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James Carson, Ph.D.
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