INSTITUTIONAL ANIMAL CARE AND USE COMMITTEE
INFORMATIONAL MEMO

In order to provide better service to our principal investigators, research staff, and administrative managers, the Office of Institutional Animal Care and Use has compiled this informational memo. Please feel free to call the Office of Institutional Animal Care and Use staff if you have any questions about any items in this memo. Also, please refer to the Institutional Animal Care and Use Committee (IACUC) web page (listed above) which includes such topics as recent updates, guidelines, standard operating procedures, current application forms, and training information.

EUTHANASIA OF ADULT RODENTS AND RODENT PUPS

The IACUC has been notified of improper technique in euthanasia of rodents and rodent pups by various methods including CO₂ asphyxiation, cervical dislocation, and decapitation. In order to ensure humane treatment of research animals it is imperative that only properly trained personnel handle and euthanize animals and that the personnel strictly adhere to standard operating procedures. A copy of the 2000 Report of the AVMA Panel on Euthanasia, which includes all of the acceptable methods of euthanasia, can be viewed at http://www.avma.org/resources/euthanasia.pdf

CO₂ Euthanasia

CO₂ should be used to euthanize only rodents that are older than 14-16 days of age. Rodents younger than this are not as sensitive as adults to CO₂. In order to ensure death in pups by CO₂, the CO₂ levels must be very high and a longer exposure time is required.

It is imperative to ensure that all animals are dead before placing them in the cooler for disposal. In order to humanely euthanize by CO₂ the following conditions must be met:

- the chamber must not be overcrowded
• the chamber must be adequately pre-charged
• the CO₂ concentration should be 70% or greater
• gas flow must be maintained for at least a minute after the animal’s death
• ensure that animals are dead

Review the attached document “HOW TO USE THE CARBON DIOXIDE (CO₂) EUTHANASIA CHAMBER.” This document is posted in all DLAM facilities adjacent to the CO₂ chamber. Please download this document and post it in your laboratory in the area where you perform CO₂ euthanasia. Ensure that all of your research personnel consistently follow these instructions.

Decapitation

Decapitation in rodents older than 16 days is permitted only if it is performed correctly, its use is scientifically justified, and it is approved by the IACUC in the animal use application. Guillotines that are designed to accomplish decapitation in adult rodents in a uniformly instantaneous manner are commercially available. Sharp blades can be used to decapitate neonatal rodents. “The equipment used to perform decapitation should be maintained in good working order and serviced on a regular basis to ensure sharpness of blades. The use of plastic cones to restrain animals appears to minimize stress from handling, minimize the chance of injury to personnel, and improves positioning of the animal in the guillotine.” (2000 Report of the AVMA Panel on Euthanasia)

Cervical Dislocation

Manual cervical dislocation is a humane method of euthanasia when performed properly and when limited to rodents of less than 200 g. In rodents older than 16 days, this technique should be used only when it is scientifically justified in the animal use application and is approved by the IACUC. Personnel using cervical dislocation must be adequately trained and must consistently apply this method humanely and effectively.

Euthanasia of Rodent Neonates (pups, pinkies)

Prior to 14 to 16 days of age, acceptable methods for the euthanasia of neonatal mice and rats include: injection of chemical anesthetics (e.g., pentobarbital); decapitation or cervical dislocation; and the use of inhalant anesthetics; e.g., halothane (used with appropriate safety considerations). Immersion in liquid nitrogen may be used only for newborns; pups older than one day should be anesthetized prior to freezing with liquid nitrogen. Similarly, anesthesia should precede immersion or perfusion with chemical fixatives.

For additional information on euthanasia of rodent fetuses or neonates please refer to the attached NIH “Guidelines for the Euthanasia of Mouse and Rat Fetuses and Neonates.”
ANNUAL APPLICATION RENEWALS, AMENDMENTS, PRINCIPAL INVESTIGATOR TRANSFERS, AND PERSONNEL ADDITIONS

In order to fulfill federal requirements, the IACUC has recently revised the way the committee reviews application renewals, amendments, investigator transfers, and personnel additions. According to federal policy review must conform to the following process: written descriptions of research involving the care and use of animals must be made available to all IACUC members, and any member of the IACUC must have the opportunity to obtain, upon request, full committee review of those research projects. In order to accomplish this task expeditiously yet make the information available to all IACUC members, amendments to approved applications must now be submitted by email with a signed hard copy sent by mail or hand delivered. Likewise, a transfer of an approved project to another investigator must be submitted electronically with a hard copy signed by both investigators (original investigator and new investigator) hand delivered or mailed.

The IACUC handle annual renewals of applications and personnel additions in the following manner. IACUC members receive a log of the annual renewals and personnel additions in their monthly application packet a week prior to the monthly meeting. IACUC members have the opportunity to request a full IACUC review of any annual renewal and/or personnel change. In order to comply with federal regulations, the IACUC Chair will sign and date renewals only after the monthly meeting in which they are reviewed and approved. Annual renewals will not be signed “early” prior to the monthly meeting. Also renewals that arrive in the IACUC office late will have to wait for approval until the next scheduled meeting.