17th March 2014

Dear PIs,

Please note that updated versions of the **Guide for the Care and Use of Laboratory Animals and the AVMA Guidelines for Euthanasia of Animals** have been released.

The Guide for the Care and Use of Laboratory Animals is an internationally accepted primary reference on animal care for the scientific community. It is also one of the Primary Standards used by the Association for Assessment and Accreditation of Laboratory Animal Care International (AAALAC) in their animal care and use programme evaluation during accreditation of an institution. Moreover, NUS uses the Guide as a key reference for our animal care and use program. A summary of the updates made to the 7th edition of the Guide can be found below. If you wish, please feel free to follow the link in each section for more details.

Updates to the Guide to the Care and Use of Laboratory Animals

Chapter	Updates
Chapter 1 : Key concepts	An endorsement of "the three Rs" -- replacement, refinement, and reduction -- as principles to employ when using animals in research and designing humane animal research studies
Chapter 2: Animal Care and Use Program	A holistic approach to institutional Animal Care and Use Programs, defining them as the sum of the activities that directly impact the well-being of laboratory animals
Chapter 2: Animal Care and Use Program	A new section on creating a disaster and emergency plan that identifies necessary steps for use in catastrophic events
Chapter 3: Environment, Housing and Management	A new section on care and use of aquatic species
Chapter 3: Environment, Housing and Management	The guide emphasizes the need to house all social animals, particularly monkeys, in compatible pairs or larger groups of compatible animals.
Chapter 4:	Expanded sections on how to properly transport animals

Veterinary Care	
Chapter 4: Veterinary Care	A definition of animal biosecurity -- measures taken to prevent and control unwanted diseases -- and proper practices
Chapter 4: Veterinary Care	New material on veterinary clinical care and management
Chapter 5: Physical Plant	New and updated information on physical plant-related topics, such as special design facilities and hazardous agent containment

The AVMA Guidelines for Euthanasia of Animals provide guidance for the relief of pain and suffering of animals that are to be euthanized.
A summary of the updates made to the 2013 edition of the guidelines can be found below. Please feel free to follow the link in each section for more details of the changes.

Updates on AVMA Guidelines for Euthanasia of Animals

Species	Acceptable	Unacceptable/ Acceptable with conditions
Small birds and poultry	Cervical dislocation of poultry of appropriate size	**Unacceptable :** Thoracic compression - animals that are not deeply anesthetized
Rodents	IP or IV barbiturate Momentary pain may be associated with IP injections, but the degree of pain and the methods to control have yet to be defined.	**Acceptable with conditions:** 1) Inhalant anesthetics (open drop), CO2, cervical dislocation, decapitation, microwave irradiation For CO2 - Home cage best, gradual displacement rate of 10-30% recommended 2) Tribromoethanol
Neonatal Rodents*	IP barbiturate derivatives	**Acceptable with conditions :** 1) Gaseous anesthetics or CO2 (>50 mins) - Must be confirmed by physical examination, adjunctive physical method, or validation of the euthanasia chamber and process

		2) Rapid freezing (<5 d), hypothermia (< 7d, prevent contact with cold surfaces), decapitation, cervical dislocation
Rabbits	Small numbers of rabbits are best euthanized using the same techniques as used in the private practice setting +/- sedation with IV barbiturate	**Acceptable with conditions:** Inhalant anesthetic, carbon dioxide (with sedation), captive bolt designed for rabbits (best for large numbers in production setting), cervical dislocation (requires demonstrated proficiency)
Zebrafish	1) Tricaine methanesulfonate (MS222) followed by physical adjunctive method or immersion in 5% sodium/calcium hypochlorite 2) Rapid chilling (2 - 4°C) until loss of orientation and operculum movements followed by appropriate holding times (10 mins adults, 20 mins fry) or an approved physical adjunctive method or immersion in 5% sodium hypochlorite	NA
Frogs	1) MS222 (5g/L) immersion. May be injected in lymph sacs or coelomic cavity - May require prolonged emersion - Follow with physical adjunctive method (decapitation, pithing) 2) Benzocaine hydrochloride (250 mg/L) also available as benzocaine gel (20% concentration)	NA

* Precocial young (guinea pigs) treated as adults

Please disseminate the information to researchers in your group who use animals in their research.

IACUC appreciates your efforts in keeping up to date with the latest information on the care and use of laboratory animals for your research.

IACUC Office
17th March 2014
(Transmitted via email)