

**International Harmonization of Guidelines for
Animal Users: Education and Training in Laboratory Animal Care and Use**

“Because of differing legal systems and cultural backgrounds there are varying approaches to the use of animals for research, testing, or training in different countries. Nonetheless, their use should be always in accord with humane practices. The diverse approaches in different countries to the use of animals for biomedical purposes, and the lack of relevant legislation or of formal self-regulatory mechanisms in some, point to the need for international guiding principles elaborated as a result of international and interdisciplinary consultations.”¹

Personnel involved with the use of animals in research, teaching and testing must be competent; this means they should be adequately educated, trained and/or qualified in the principles of laboratory animal science to assure high quality science and to minimize the impact on animal welfare. The objective of this document is to provide guidelines for harmonization of such education and training and thus enhance science and animal welfare.

On November 5 and 6, 2005, an International Council for Laboratory Animal Science (ICLAS) Working Group on Harmonization met in St. Louis, MO, USA to examine and make recommendations for adoption of guidelines on animal user education and training for international recognition. A second meeting was held on June 9, 2007 in Lake Como, Italy. In between these meetings, the ICLAS *ad hoc* Committee on Training worked on these Guidelines through electronic communication. In addition to summaries of FELASA, CCAC and ILAR recommendations, the *ad hoc* Committee considered information provided on practices in the UK, Australia and elsewhere. For the purpose of this document, education is defined as presentation of information (usually didactically) and training is defined as acquisition of practical knowledge and skills. The focus of the

¹ International Guiding Principles for Biomedical Research Involving Animals (1985) CIOMS.

ad hoc Committee was to look at education and training which should be provided to the animal user, defined as someone using animals for scientific purposes, not someone having animal care as their primary duty (although it is recognized that these delineations can be blurred if animal technicians take on procedural work involved in research.) Such education and training may not be related to an educational degree. If the quality of training and documentation of experience is proven to be sufficient, this may facilitate the free exchange of scientists and enhance science and animal welfare.

Education and training needs to provide information and experience to ensure that the participants develop the necessary knowledge, a culture of care and other attitudes and skills to ensure high quality science, optimal animal care and use and provide assurance to the public that animal research is undertaken responsibly. Pre-requisites for training activities may vary, based upon national requirements, institutional research programs and previous experience of trainees. Likewise, delivery of education and training depends upon resources and training objectives. Flexibility and diversity of delivery systems/formats is encouraged. In addition to traditional classroom and workshops, web-based courses, small group discussions, directed readings, mentored laboratory experience, etc. should be considered.(ILAR 2007) The duration and/or intensity of the training program should be related to the severity of the procedures being carried out on the animals. Regardless of the duration of the educational and training experience or the format, it is important to have some type of comprehension and skill assessment to ensure that the objectives of the education/training have been met and documentation should be provided of how assessments were made.

The Working Group agreed on general principles for animal user education and training and recommends three guidelines as international reference documents, namely the *CCAC. guidelines on: institutional animal user training with accompanying Recommended Syllabus for an Institutional Animal User Training Program*; the *FELASA recommendations for the education and training of persons involved in animal experiments, Reports of FELASA Working Groups*; and the *ILAR Education and*

Training in the Care and Use of Laboratory Animals, A Guide for Developing Institutional Programs; Additional references are provided at the end of this document.

Although there are some inconsistencies between these three documents, institutions and Institutional Animal Care and Use Committees (IACUC), Ethics Committees (EC) and Animal Care Committees (ACC) can use the general principles to establish their own training programs and to assess the training of animal users who have completed training programs at other institutions. In general, a core curriculum should be adopted which is based upon the key elements of establishing a culture of responsible animal use. This core emphasizes the responsibilities of the scientists, their relationship to the IACUC/EC/ACC, the requirement for protocol compliance and the benefits of a team approach; it would contain many similar modules, regardless of national location, program size etc. This core would be supplemented with additional education and training based upon species, procedure and institution-specific needs.

A. General Principles

1. All personnel involved with use of animals in research, teaching and testing should be adequately educated, trained and qualified in the principles of laboratory animal science and the ethical considerations of animal use and should have demonstrable knowledge and expertise in the specific animal procedures proposed and species used.
2. Training programs should be tailored to the specific needs of the animal user and institution, however some components should be compulsory:
 - a. Overview of pertinent laws, regulations and guidelines and institutional policies including documentation and record keeping
 - b. Roles and responsibilities of ethical review committee (IACUC/EC/ACC), animal user, veterinarian, animal care staff and others and the importance of adhering to appropriately approved protocols and procedures
 - c. Ethical issues involving the use of animals in research, testing and teaching
 - d. Principles of the Three Rs (replacement, reduction and refinement)

- e. Experimental design, including non-experimental variables
 - f. Recognition of pain and distress, the use of anesthetics, analgesics, tranquilizers and other palliative measures and the importance of setting and implementing both scientific and humane endpoint as well as understanding of the potential effects of both pain and distress and their treatments on science.
 - g. Euthanasia including theory of humane death and common methods.
 - h. Introduction to the principles of animal care including housing, care routines, environment of commonly used species, and non-experimental variables
 - i. Principles of aseptic technique and other basic commonly used procedures
 - j. Principles of occupational health and safety when working with animals.
3. Education and training of the young/new scientist should be emphasized and would likely be different from that provided to more experienced scientists.
 4. Ongoing educational programs, termed continuing education or refresher courses, should be offered to reinforce training and provide updates as there are changes in technology, legislation, etc. Frequency of training should ensure that all animal users receive adequate training prior to commencement of animal work.
 5. Training of the individual should be documented.
 6. Assessment programs should be implemented and documented to evaluate the effectiveness of institutional training programs and level of competency of animal users participating in institutional training programs.
 7. Assessment programs should be implemented and documented to determine the competency of animal users who have been involved in training programs at other institutions. Additional training in institutional and national policies and protocols may be necessary.
 8. Institutions are responsible for providing appropriate resource material to support the training program; however, the IACUC/EC/ACC is responsible for providing oversight.

B. International Reference Documents

The ICLAS working group on harmonization supports the use of the following documents as international references:

1. CCAC. *guidelines on: institutional animal user training with accompanying Recommended Syllabus for an Institutional Animal User Training Program*
http://www.ccac.ca/en/CCAC_Programs/Guidelines_Policies/GDLINES/NIAUT/NIAUTCOV.HTM
2. FELASA recommendations for the education and training of persons involved in animal experiments, *Reports of FELASA Working Groups*.
<http://la.rsmjournals.com/cgi/reprint/34/3/229.pdf>
3. *ILAR Education and Training in the Care and Use of Laboratory Animals, A Guide for Developing Institutional Programs*. Washington, DC: National Academy Press, 1991.

C. Other Reference Documents

1. *Animal Ethics Infolink, Training personnel*,
www.animalethics.org.au/reader/arrp-policies-and-guidelines/trianing-presonnel-involved-i.htm
2. *Training and Adult Learning Strategies for the Care and Use of Laboratory Animals, ILAR Journal, Vol 48 (2), 2007.*
3. FELASA recommendations for the accreditation of laboratory animal science education and training (2002). *Laboratory Animals* 36, 373–377. Available also from <http://www.lal.org.uk/pdffiles/f-accreditation.pdf>