

## A global vision for laboratory animal medicine

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### Abstract

Colleges of laboratory animal medicine have been developed around the world over the past fifty years, the first in North America and more recently in Europe and Asia. These Colleges ensure the quality of specialised understanding of laboratory animal medicine through a stringent process of examination of potential members. More recently, existing Colleges from North America, Europe, Japan and Korea have combined forces to form the International Association of Colleges of Laboratory Animal Medicine (IACLAM). These member colleges of IACLAM certify veterinary specialists in this field. The development and achievements of IACLAM over less than two years since its inception are described here. IACLAM believes that trained and competent laboratory animal veterinarians are an important key to refinement of animal procedures. IACLAM promotes and supports initiatives to train veterinarians in this field in developing and emerging new science provider countries. IACLAM supports the development of global standards for veterinary care of animals used in research, testing and education and represents the veterinary profession in a range of international forums where expertise in laboratory animal medicine and welfare is of great importance. IACLAM also supports research through partnerships, promoting the Three Rs and, particularly, the veterinary role in Refinement.

**Keywords:** veterinarian, laboratory animal medicine, veterinary education, veterinary speciality colleges, refinement

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### Introduction

The first College of Laboratory Animal Medicine was founded in North America in 1957 with the remit "to encourage education, training and research in laboratory animal medicine; to establish standards of training and experience for veterinarians professionally concerned with the care and health of laboratory animals; and to recognize qualified persons in laboratory animal medicine by certification examination and other means" (<http://www.aclam.org>). The College was originally established as the American Board of Laboratory Animal Medicine by eighteen "Charter Fellows" who had made significant contributions to laboratory animal medicine and were actively engaged in the speciality. The name of the organization was changed to its present form, the American College of Laboratory Animal Medicine (ACLAM), in 1961. ACLAM has grown steadily and now covers all of North America (including Canada) with a membership of over 700 Diplomates of whom over 600 are active and about 70 are retired.

This was a very far-sighted initiative which, during the last 50 years, has benefited from graduate and residency training programmes throughout North America, many of which have received government funding. However, the basic policies and concepts of ACLAM have not changed since its formation. The

testing and certification of qualified veterinarians in this speciality continues to have the highest priority while educational programmes also receive strong emphasis to appraise both the membership and the broader veterinary and scientific communities of advances in laboratory animal medicine.

In 1991, 250 members of the Japanese Society of Veterinary Science formed the Japanese Association of Laboratory Animal Medicine (JALAM), the mother body of JCLAM (the Japanese College of Laboratory Animal Medicine) which was subsequently established in 1999 by 32 founder members (<http://plaza.umin.ac.jp/JALAM>). Three years later, the first Diplomates of JCLAM passed their written examination. The membership of JCLAM (Founder Diplomates and examined Diplomates) numbered 65 in 2007.

In 1996, a group of European veterinarians, all working in the field of laboratory animal medicine, met in Basel, Switzerland, and established the European Society for Laboratory Animal Veterinarians (ESLAV) (<http://www.eslav.org>). The group also included a small number of ACLAM Diplomates who encouraged their ESLAV colleagues to create a College. Hence it was that, in 1999, the European College of Laboratory Animal Medicine (ECLAM) was founded by a small group of "Charter

Diplomates" (<http://www.eclam.org>). Having sought and obtained provisional recognition by the European Board of Veterinary Specialisation (EBVS), the Charter Diplomates set about identifying key professional leaders throughout Europe who, having demonstrated their competence and experience, were elected *de facto* Diplomates. Residency training programmes in six European countries were approved and, in 2005, the first ECLAM examinations were held. It is expected that ECLAM will receive full recognition by EBVS in 2008 following some Diplomates having completed a full cycle of residency training and examination. Membership of ECLAM currently numbers over 80 European Veterinary Specialists recognised by EBVS. Included in this number are several Diplomates of ACLAM who are active in Europe.

It was a natural development for members of these three colleges to meet together in October 2005 at the National Meeting of AALAS (the American Association for Laboratory Animal Science) in St Louis, MO, and to agree to establish an International Association of Colleges of Laboratory Animal Medicine (IACLAM) (<http://www.iaclam.org>). In 2006, officers of IACLAM were appointed with representation from Europe, USA, Canada and Japan, and later that year, the Korean College of Laboratory Animal Medicine (KCLAM) became the fourth member college to join IACLAM.

Laboratory Animal Medicine has been an international field for many years, reflecting the international nature of biological science. Colleagues from across the world correspond routinely in exchanging information and materials. For example, our host organization today, Charles River Laboratories, employs some 165 veterinarians globally, delivering services to over 70 countries (<http://www.criver.com>). The formation of IACLAM formalised existing relationships to enable the speciality to have representation in international forums. It was felt to be important to have a common platform at a global level for communication by, and representation of, Diplomates of the Colleges.

### **The mission of IACLAM**

The Mission of IACLAM covers four broad areas:

- a. Certification of veterinary specialists - harmonizing international standards and sharing best practices among existing Colleges. But also encouraging and embracing new national and regional Colleges;
- b. Education of veterinarians - encouraging training at various levels, including training in developing countries as well as those regions that are important new providers and collaborators with Western scientists e.g. Latin America, China and India.
- c. Dissemination of information relevant to

the field - delivering veterinary expertise from certified veterinary experts to relevant international discussions on laboratory animal welfare and veterinary issues, e.g. ICLAS, ILAR, OIE and WVA;

- d. Serving as research partners - promoting the Three Rs, and especially promoting the veterinary role in Refinement.

#### **a. Certification of veterinary specialists**

Each of the current member Colleges has its own standards for certifying its members. In due course, harmonisation of these standards may lead to mutual recognition but, in the short term, it is important to simply benefit from shared experience. As the demand for high quality laboratory animal medicine grows worldwide, we recognise the need for new colleges to be created to further encourage education, training and research in laboratory animal medicine in these regions. IACLAM will work to support such embryonic new colleges and help to guide their development. In due course, once examinations have been held successfully, it is likely that new colleges will be able to join IACLAM as full members.

#### **b. Education of veterinarians**

A significant role of each of the Colleges is to support educational initiatives in laboratory animal medicine within its own geographical region. However there is a need for similar initiatives in many other parts of the world not currently covered by one of the existing Colleges and IACLAM will encourage such education and training, often in partnership with other relevant training providers such as the Solomon Foundation ([www.solomon-foundation.org](http://www.solomon-foundation.org)). IACLAM and its partners may also seek financial support for special training fellowships to enable selected colleagues in these emerging countries to attend established graduate programmes and residencies and have the opportunity to gain diplomacy of an existing College through examination. To this end, the Council of ECLAM has already signaled that it will favourably consider applications for residencies from individuals who are not licensed to practice as veterinarians within the European Union. Through opening up training opportunities to such candidates, ECLAM Council hopes to influence and improve standards of laboratory animal medicine widely.

#### **c. Dissemination of information relevant to the field**

IACLAM has already initiated several international relationships and projects. The OIE (the World Organisation for Animal Health) has introduced animal welfare onto its agenda in 2001 and has announced an initiative in laboratory animal welfare starting later in 2007. OIE has some 169 member countries with representation from the Chief Veterinary Officer or similar from each country (<http://www.oie.int>). It has the potential to be very influential

in future developments in the laboratory animal field, particularly in developing and new provider countries. IACLAM representatives will join colleagues from ILAR and ICLAS on the OIE ad hoc group for this work.

Meanwhile, IACLAM has been giving support to on-going initiatives of **ICLAS** (the International Committee on Laboratory Animal Science) for international harmonisation of laboratory animal standards. The ICLAS initiative currently includes standards for euthanasia, humane endpoints, animal user training, and protocol review (<http://www.iclas.org>). These are very important topics and IACLAM's veterinary input has been welcomed.

In partnership with **ILAR** (the Institute for Laboratory Animal Research [http://dels.nas.edu/ilar\\_n/ilarhome](http://dels.nas.edu/ilar_n/ilarhome)), IACLAM has initiated efforts to define and harmonise international standards for laboratory animal veterinary care. ILAR, which is part of the US National Academies of Science, has a quarterly publication, the ILAR Journal, as well as its highly respected periodic special reports, all published under the auspices of the National Academies. In due course, IACLAM hopes to publish guidelines on standards of laboratory animal veterinary care in association with ILAR. An initial meeting in Italy in June 2007 laid the groundwork for this report and further discussions are planned to include colleagues from a wider range of countries, culminating in an international conference at the National Academies in Washington DC in autumn 2008. It will be important to focus on essential basic standards to which all can aspire and to indicate directions for improved standards as these become feasible in different countries.

Finally, IACLAM became a full member of **WVA** (the World Veterinary Association) in 2007 (<http://www.worldvet.org>). This provides WVA for the first time with a body of subject matter experts on the veterinary care of animals in research, testing and education. We look forward to having input into WVA policies in this area as well as contributing to the WVA Animal Welfare Initiative. We also plan to include presentations relevant to laboratory animal medicine and welfare in the programme of the 29<sup>th</sup> World Veterinary Congress which is being held in association with OIE in Vancouver in 2008 (<http://www.worldveterinarycongress2008.com>).

#### **d. Laboratory animal veterinarians and refinement**

Until recently, of the Three Rs introduced by William Russell and Rex Burch (Russell & Burch, 1959 [http://altweb.jhsph.edu/publications/humane\\_exp/het-toc.htm](http://altweb.jhsph.edu/publications/humane_exp/het-toc.htm)), most focus has tended to be on the Replacement of animals with non-animal procedures, and the Reduction in the numbers of animals subjected to procedures. There is great scope for the third approach – Refinement – to have an enormous impact on reducing overall distress and pain

associated with essential animal research. It is in this area that laboratory animal veterinarians can play an important role. This role can start by simply assuring good animal health. Veterinarians are also well placed to advise on providing for the most important needs of different species during transportation and in their living environment. Finally, veterinarians are a critical part of the team involved in assessing the affective states of animals, particularly in relation to distress and pain before, during and after procedures (MacArthur Clark, 2007).

IACLAM Colleges have a total membership approaching 1,000 veterinarians, all certified to a very high standard of expertise. The total global demand for competent laboratory animal veterinarians might be at least 20 times this number. IACLAM is committed to assuring wider availability of veterinary competence in the future. The impact of such veterinarians on animal well-being through effective refinement procedures is potentially enormous.

#### **Conclusions**

I have described the development and achievements of IACLAM over a very brief period of less than two years since its inception. IACLAM believes that trained and competent laboratory animal veterinarians are an important key to refinement of animal procedures. Toward this end, we are promoting and supporting initiatives to train veterinarians in this field, including in developing countries and emerging new science provider countries. We are also supporting the development of global standards for veterinary care of animals used in research, testing and education. At the same time, IACLAM will represent the veterinary profession in a range of international forums where expertise in laboratory animal medicine and welfare is of great importance.

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