

**Award category 2 - Excellence in multidisciplinary team efforts in the application of S&T**

**Initiative on immunogenicity studies following canine anti-rabies immunization in Sri Lanka leading to revision of anti-rabies vaccination protocol**

Almost 99% of human deaths caused by rabies in Sri Lanka are due to rabid dog bites. Therefore, immunization of dogs play a major role in the control of rabies as it is a fatal but vaccine preventable zoonotic disease. Rabies has been a significant health problem in Sri Lanka for many years with a bad impact on the economy. Government is investing over 500 million rupees annually to control canine rabies as well as for the treatment and management of dog bite victims.

The absence of freely available facilities to determine immunogenicity following vaccination against rabies and to determine the level of protection of dogs against rabies led the Principal Investigator to pioneer research studies in collaboration with the Medical Research Institute where the necessary technology was available (Rapid Fluorescent Focus Inhibition Test: RFFIT which is a WHO recommended method to determine rabies virus neutralizing antibody titres). The first study was on 'Determination of efficacy and virus neutralizing antibody levels in canines before and after immunization with anti-rabies vaccine: 1999-2002', that included domestic canines (adult dogs with and without previous vaccination history and puppies of vaccinated and unvaccinated bitches). The second research study on 'Serological response following anti-rabies immunization in a representative canine population in Sri Lanka: 2009-2012' was a comprehensive study involving stray and domesticated canines in eight different groups on predetermined criteria. Based on the findings of above mentioned research projects it was concluded that the maternal antibodies were inadequate to protect the puppies until the primary vaccination against rabies and the necessity for a booster vaccination in the first year with annual boosters thereafter. These research projects were funded by the National Science Foundation (Grant No. RG/99/V/01 and RG/2007/HS/03).

As there were issues in post exposure treatment for humans after suspected dog bites, there was a need for the revision of vaccination protocol of canines. At the two workshops organized by the Veterinary Teaching Hospital, Faculty of Veterinary Medicine and Animal Science, University of Peradeniya in the year 2013, a revised anti-rabies vaccination protocol was developed using research findings of this team and was implemented in the same year by the Department of Animal Production and Health.

Implementation of revised anti-rabies vaccination protocol requesting veterinary surgeons and national rabies control authorities to adhere to the new schedule will improve immunity against rabies in stray and domestic dogs (herd immunity). Furthermore, adhering to a single schedule prevents immunization of dogs against rabies according to individual schedules which was the practice in the past. When the herd immunity is improved, reintroduction of rabies virus from wild animals will be prevented, disrupting rabies transmission by both the urban and sylvatic cycles. Finally it will lead to achieving the target of a 'Rabies free Sri Lanka' in the near future thus reducing the burden it has on the country's economy.

***About the winners***



**Prof. Mangala Gunatilake**

She is a veterinary surgeon. Graduated from University of Peradeniya in 1991, she joined the Dept. of Physiology, Faculty of Medicine, University of Colombo in 1993 and obtained her PhD in 2001. She commenced research related to determination of antibody titers following anti-rabies vaccination in canines in collaboration with the Medical Research Institute in 1999. Presently, she is an Associate Professor attached to Department of Physiology, Faculty of Medicine, University of Colombo.



**Dr Ruwini M S Pimbura**

Dr Pimbura graduated from University of Peradeniya in 2001. Currently she is a Public Health Veterinary Officer attached to Public Health Veterinary Services of Ministry of Health. She is reading for her PhD at the University of Colombo. She is engaged in the research project titled "Determination of anti-rabies vaccination coverage, serological response in canines and assessment of knowledge of people on rabies in selected areas in Sri Lanka" since 2009.



**Dr Omala Wimalaratne**

Dr Wimalaratne graduated from University of Colombo in 1978 and obtained a Diploma and MD in Medical Microbiology in 1990 and 1994 respectively. She is a Senior Consultant Vaccinologist and Virologist. Dr Wimalaratne is the former Head of the Dept. of Rabies and Vaccine Quality Control of Medical Research Institute. She was engaged in research work related to rabies since 1988 and has 26 years of experience in the research field.

## National Award Winners



### **Dr Aindralal Balasuriya**

Dr Balasuriya graduated from University of Colombo in 1992 and obtained his MSc and MD in Community Medicine in 1996 and 2001 respectively. He is a Consultant Community Physician and currently, working as a Senior Lecturer in Community Medicine in the Faculty of Medicine, General Sir John Kotelawala Defence University, Ratmalana. He is engaged in research activities since 1995.



### **Mrs K.A.D.N. Perera**

Mrs Perera graduated from University of Colombo in 1987 and obtained her MSc in Applied Microbiology from University of Kelaniya in 2004. She is currently working as a Senior Research Officer in the Dept. of Rabies and Vaccine Quality Control at the Medical Research Institute. She has over 20 years of experience in research related to rabies.