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Beyond 3Rs

Prof Mangala Gunatilake
President/ SLALAS

It is with great pleasure that I release this message as the President for the year 2023/2024. When I look back as the Founder President, the journey of SLALAS through the last 10 years was challenging but progressive. SLALAS should be strong enough to fulfil its mission amidst the global trend against the use of laboratory animals for future scientific developments.

During the recent past, the COVID-19 outbreak once again showed a lesson on how useful laboratory animals were in understanding pathophysiology and developing vaccines against the disease. Even in the future, challenges will emerge and disappear where laboratory animals will sacrifice their lives for the benefit of mankind. While using laboratory animals in the name of Science, we need to fulfil our duties and responsibilities towards this wonderful group in the animal kingdom. Welfare of laboratory animals should be a prime concern of Scientists and could be accomplished with the support of the Animal Facility staff. Proper welfare of laboratory animals ensures physical and psychological wellbeing of animals such as making them fit for challenges while enhancing accuracy of our experimental data.

In the current context, Laboratory Animal Scientists should look beyond the 3Rs of Russell and Burch (Replacement, Reduction and Refinement). In the recent years, a global trend has been created to use 'Non animal methods' (NAMs) or Alternatives to animals (Replacement of animals) due to lack of transparency, reproducibility and applicability of data gathered from animal experiments.

We ought to be transparent in what we are doing, adhere to ethics, be accurate in reporting our findings, selecting the most appropriate animal model and sample numbers for the experiment, and application of the most suitable statistical method for analysis.

These will invariably enhance the reproducibility, and the applicability of animal-based experimental data. The attitudes and scientific objective of researchers should focus on producing an intended scientific outcome and not aim for sheer quantum of publications and related citations.

As the representative body, SLALAS organizes sessions to disseminate new knowledge and thereby promote adherence to a '**8R**' framework. In addition to **3Rs**, all stake holders in the Laboratory Animal Science field need to be '**Responsible**' to comply with ethics, '**Registration**' of the experimental protocol before carrying out, to ensure '**Robustness**' of data going to be collected, accurate '**Reporting**' of experimental work by adhering to 'PREPARE' and 'ARRIVE' guidelines and '**Remembering**' laboratory animals who sacrificed their lives for the benefit of science. 'Reuse' and 'Rehabilitation' are two other Rs adopted in limited capacity depending on the type of experimental procedure that laboratory animals are subjected to.

Hopefully, a special day will be declared for the Asian part of the world to 'Remember' and pay gratitude to laboratory animals, following the 2023 Congress of the Asian Federation of Laboratory Animal Science Associations.

11th Executive Committee of SLALAS



Standing left to right - Ms. Anusha Senavirathna (Assistant Treasurer), Dr. WASS Weerakoon, Dr. Kalpani Ratnayake (Ex officio), Dr. Prasadi de Silva, Dr. Ureshani Karunarathna, Dr. Ramani Karunakaran, Ms. Pumika Yapa (Assistant Secretary)

Seated left to right - Dr. M.G.T.M Prasadinie (Editor), Dr. Hasanthi Rathnadiwakara (Secretary), Prof. Mangala Gunatilake (President), Dr. Varuni Gunathilake (Treasurer), Dr. Sachini Amarasekara (President elect)

Absent - Ms. Chedliya Ishak, Prof. Sugandhika Suresh, Dr. Gihani Jayaweera (Ex officio)



Dr. M.G.T.M Prasadinie
Editor
SLALAS 2023/24

Importance of Animal Research Education and Awareness

Animals are the key to scientific research and biomedical progress. Public opinion plays a key role in regulating and funding these work. Many scientists are not to disclose their animal research or speak freely about their work. This has led to many negative ideas being socialized about animal research. Therefore, animal research education and awareness is a timely topic.

The dispute between animal welfare organizations and scientists' dates back to 1875. There were many protests against animal research and even robbing of scientific laboratories for evidence were reported in UK. This has led to formation of many legislations ensuring animal rights and welfare. The Cruelty to Animals Act of 1876, the animals (Scientific Procedures) Act and the Laboratory Animal Welfare Act were some of the examples for such legislations (MacArthur Clark et al., 2019). These acts required researchers to show that their proposed experiments on vertebrate animals were absolutely necessary in order to obtain a research license. However, despite the legislations, opposition to animal research continued with demonstrations and accusations of cruelty levelled against researchers (Golledge, 2017). Public gathered in forming organizations to march opposing scientists and frequently extreme acts against biomedical research were noted. As a result, legislations were formed favoring researchers. For example, Animal Enterprise Terrorism Act (AETA) was passed in USA in response to an increase in intimidation and violence targeting biomedical researchers (Ferrara et al., 2022). Although such extreme acts are rare now, it is likely there will always be a sector of society that actively opposes animal research. Therefore, responding to the concerns of that sector involves engaging today's public and educating them about the contributions that science has made to human and animal lives.

Every institution that uses animals for research must publish a statement outlining why, how many, and how those animals are utilized in the study as well as their dedication to excellent animal welfare. These institutions should also demonstrate their dedication by disseminating lay summaries of their research and giving useful access to their facilities and staff, frequently through photographs and videos.

Without such actions, a crucial tipping point will be reached when majority of people oppose using research animals. The use of specific species or types of research may then be prohibited, or even the use of any animal as a research subject may be outlawed in that country, depending on the regulations that are put in place.

The function of the scientist can be understood in more human terms with improved transparency and public visibility into how scientific activity is undertaken. If and when a crisis arises, it will be less likely to turn into a public relations disaster if there is already a climate of openness and trust in place. A lot of information regarding research procedures must already be made available to the public upon request thanks to open-access laws like the Freedom of Information Act in the US and comparable regulations in the UK and Europe. In addition to establishing confidence, voluntary openness may eliminate the necessity for many Freedom of Information Act requests.

To regain the public's trust and stop the apparent decline in support for animal-based biomedical science, substantial work needs to be done. Laboratory animals are still an essential tool for medical research. Research organizations must embrace the trend toward transparency, open their labs, and communicate openly with the next generation of voters. Otherwise, unnecessarily severe legislation will come into effect and impede medical advancement.

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Use of Laboratory Animals in Research



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Greeks have started using animals even before Christ, followed by Romans who had used pigs and goats in second century to improve human medical sciences after which Arabs in 12th century dissected animals because they did not want to work with human carcasses for advancement of human medicine. The purpose of such use of animals was to understand how animal and human body functions and in addition to test and trial the medicines and surgical techniques for humans. Because animals are similar to humans and are susceptible for many health conditions as humans, they are still being used for this purpose.

At present, the use of laboratory animals have extended into various fields of study to understand disease and health, to better understand biological mechanisms, to develop effective drugs, vaccines and medical devices, to test safety of drugs, chemical and consumer products and to conduct environmental research. The use of laboratory animals in behavioral research to understand various neurological mechanisms in humans have had tremendous importance. This expansion on fields of study in laboratory animal involvement, indicate despite several complications and controversies, that the use of animals to assist human health scientists, would continue to grow.

Despite the age-old controversies, in 1937, sulfanilamide dissolved in diethylene glycol (DEC) solvent, not knowing that it is a poison, without animal research, was sent to the market from which about 100 people died. Much later in late 1950, thalidomide, the wonder drug for insomnia and a known painkiller and a tranquilizer was released without animal research which was found to relieve pregnant women from morning sickness. Later thousands of children with limb malformations were born to mothers who used thalidomide during pregnancy. Thus, the use of animals in research, obviously relieve humans from tragedy. There is a disagreement among scientists whether to continue using animals or not for drug and vaccine testing, therapeutic and toxicity trials mostly because of the concerns on welfare aspects of such animals. Humane alternatives anyway are therefore, looked for. It has been estimated that about 200 million animals per year are being used for medicine development, other research on safety and for lethality testing globally.

Contribution by laboratory animals to scientific experimentation has been impressive and for example, their contribution in eradicating polio. Among the other benefits of using animals, study of cardiovascular physiology and disease, surgical techniques involving these body systems, organ transplantations, physiology of brain function and dysfunctions (sclerosis and epilepsy, memory loss) and studies on pain are significant. It has always been known that more than 60% of the human health conditions have animal origin. Development of modern diagnostic methods such as CAT (computed axial tomography) and MRI (magnetic resonance imaging) have tremendously benefited from using laboratory animals. Such impact of animals on better understanding on model systems for human research such as in the case of AIDS, is unimaginable. Since such research benefits are not restricted to humans, the animals themselves at least domesticated animals, would also benefit for example at least in the fields of vaccines, antibiotics and anesthetics. This will therefore, always be the case even in future, which demands scientists to be fair and look for welfare aspects and regulatory mechanisms of such laboratory animals. It is also important to be concerned on ethical relationship of between laboratory animals and scientists. It is important to balance desire due to potential benefits to humans against the welfare of laboratory animals, to make a decent and fare decision.

One must also be concerned on good and satisfactory alternatives for using laboratory animals. It is also of concern, that whether such alternatives are only supplementary in nature and not complete replacements as such. It is important for any country to install laws regulating the use of laboratory animals in research and for countries which has such systems in place, must keep updating them. It is established that the greatness of a nation and its moral can be judged by the way the country treats its animals. It is also true that commonsense without conscience may lead to crime and conscience without commonsense lead to folly. Therefore, animals must be considered valuable important and equal beings to humans and must be managed and treated with care, respect and dignity.

Some are against use of animals for research because benefits to humans cannot be justified by the harm caused by such research on animals. This also means that animals must be equally treated with humans, and they are not inferior to humans. Those who approve and are in favor of using animals indicate that that animal research is essential to advancement in science, medicine and surgery in humans. Despite all these concerns, their need and use has increased. People who preferred to use animals now are better concerned on their use. Many say their rights must be safeguarded and even books have appeared on this topic. How to use animal appropriately and sparingly while responding positively to human needs, has been the topic of discussion, in this regard. Using minimum number of animals required is important anyway because some of these animals are directly or indirectly euthanized at some point in most of the toxicity trial work. Therefore, application of proper statistical means and sample size, has gained much attention and such knowledge is essential for a scientist dealing with laboratory animals. This can be addressed by changing study designs as well which would essentially reduce the pain caused to animals. At times, using mammals in research have been replaced by using non mammals (birds, reptiles, amphibians and fish), again a controversial topic since they are also animals and not inferior beings. However, we all remember the massive contributions made by research on *Drosophila* to the knowledge on genetics.

It is also believed that, if one scientist conducts research, the data, not only scientific papers, must be made available to reduce potential multiplication. This could reduce the numbers of laboratory animals used, meaning better regulation and coordination of research involving laboratory animals is a must. However, there is a significant role to play by the regulatory and law implementing authority in this regard, because repetition is difficult to prevent unless rapid approvals are given and monitored by a central place. This also indicate that the laws, at least at a level of good understanding among the scientific community must be in existence which should be implemented and monitored by a central authority for each country, region and continent. The presence of a veterinarian in such regulatory authority is a must, since animal welfare with the correct blend of emotions and feeling would then be incorporated in to such law implementation. Many have argued that such a committee must have a representation from general society, to get the societal feeling infused into law implementation. It must also anyway be remembered that humans are morally obliged to each other to improve human living conditions, the scientists are ethically and morally obliged to improve animal welfare and to minimize pain and suffering in animals.

Using animals that are managed in pounds and shelters, with some regulation, is also seen as an alternative. These animals anyway either die, euthanized or killed if ownership is not claimed. Despite the welfare, emotional and societal concerns, using impounded animals has been largely accepted. Nonetheless, using cell cultures have had a notable positive impact on reducing the usage of animals in understanding and vaccine development in rabies. It is not very long time ago, that animal brain passaged vaccines was prepared which has been completely replaced at present by the vaccines manufactured using cell cultures and recombinant DNA techniques. Furthermore, advancements in bioengineering have tremendously helped in artificially synthesizing growth hormone and insulin which also has had a great impact on reducing usage of animals. Animal based insulin is heavily used by millions of people globally and daily. Such new developments are more likely than unlikely in future. On the contrary, there are also situations in which animal research so far has proven essential such as in LD50 trials in which half of the animals are expected to die. These include carcinogenic, neurotoxicity and mutagenicity trials which still depend largely on laboratory animals. These create a real challenge, and show that it is nearly impossible to completely do away with laboratory animals in research. However, the current debate on using animals for education purposes may succeed in reducing the numbers and the spectrum of animals used, because alternatives are easily found.

Workshop on “Drug Discovery and Development” organized by FABA (Federation of Asian Biotech Association)

By Piumika Yapa

Drug discovery and development involves effort carried out by a multidisciplinary team of experts in chemistry, biology, computational science, statistics, pharmacology, clinical sciences, etc. Based on molecular insights, specific genes/proteins responsible for causing a disease of interest are first identified and validated. It then follows the drug discovery process wherein molecules modulating target activity are identified and characterized at various levels. Once a drug candidate shows promising therapeutic activity, the development process systematically evaluates the suitability of the drug candidate for human use in terms of its potential therapeutic value for maximum benefit while minimizing the potential adverse side effects.

The workshop on “Drug Discovery & Development” was organized by Federation of Asian Biotech Associations (FABA) Academy in collaboration with the Science Gurus, a US-based nonprofit organization and the University of Hyderabad. It was held from the 13th of March to the 2nd of April 2023 as a hybrid workshop which facilitated both online and onsite participants worldwide. FABA has invited Sri Lanka Association for Laboratory Animal Science (SLALAS) to join the workshop. They were pleased to bring this comprehensive workshop filled with enriching content to allow participants to learn different aspects of the drug discovery and development process. They offered free registration for four Executive Committee members of SLALAS; Dr. Kalpani Rathnayake, Dr. Prasadi de Silva, Ms. Piumika Yapa and Ms. Anusha Seneviratne to join the workshop therein strengthening the bondage between FABA and SLALAS.

The main aspect of the workshop included drug repurposing with an emphasis on drugs for Covid-19, and intellectual property. In addition, the attendees had the opportunity to learn through the experience of the success stories of Biotech and Pharma startups. The workshop also included hands-on training modules in computational structure-based drug design, machine learning for biomedical drug discovery, genomics, and transcriptomics.

Workshop Topics;

1. **Discovery**: Target identification and validation, including molecular modeling and drug design.
2. **Pre-clinical Development**: Drug metabolism, PK & PD studies.
3. **Development**: Drug manufacturing, process development, and formulation.
4. **Clinical Development**: Phase I to IV studies, including Regulatory Affairs.
5. **The Next Frontier**: Emerging technologies like Artificial Intelligence, Data sciences, personalized medicine, and drug repurposing
6. **Hands-on Training Modules**:
 - Computational Biology by Pine Biotech
 - Computational Structure-based Drug Design

The workshop also included an interactive panel discussion by the industry experts on: " Future of drug discovery in India". All the participant had the opportunity to do a presentation on a selected disease module. Regarding these presentations, Dr. Kalpani Rathnayake and Ms. Piumika Yapa got the opportunity to featured their presentations in the Indian Newspaper “BIZZ BUZZ”. Dr. Prasadi de Silva was selected as one of the awardees for best presentations selected among all participants.



'Institutions, startups drive innovative drug development'

BB BUREAU
HYDERABAD

DRUG Discovery and Development workshop is being organised by FABA (Federation of Asian Biotech Associations) Academy in collaboration with US-based non-profit organisation Science Gurus, and the University of Hyderabad from March 13 to April 2. This workshop is also supported by World Trade Center Shamsabad & Visakhapatnam.

The event featured brilliant minds and cutting-edge ideas, making it a resounding success. Industry experts delivered captivating lectures, paving the way for groundbreaking advancements in the field.

On the 14th day of the workshop, Dr Surya Sankuratri, who is a Co-founder of Arona Global Sciences and a board member of Science Gurus, delivered the first lecture on "Collaborating, Licensing, M&A, and Divesting in the innovative pharma and biotech industry". During his presentation, he highlighted the importance of biotech as a source of innovative medicines and pharma's increasing dependence on external innovation. He also discussed the scenario of academia, contract research, clinical research, and manufacturing organisations in driving innovation in the Industry.

He emphasised the importance of licensing, M&A, and divesting as key strategies for companies looking to stay competitive in the fast-paced and rapidly evolving pharmaceutical and biotech landscape. He provided insights into current and future drug innovation trends and the critical role that collaboration and partnership will



Dr Surya Sankuratri



Naveen Nandamuri



Dr Vipin Kumar



Plumika Yapa



Dr Kalpani Ratnayake

play in driving innovation and success in the industry.

Dr Surya said that "globally academic institutions and startups are the major drivers of innovative drugs development". Participants were impressed by his deep knowledge and expertise in the field, as well as his ability to provide actionable insights that can help organisations stay ahead of the curve in this dynamic and challenging industry.

During the second lecture, Naveen Nandamuri, Senior Clinical Trial Manager, ICON Plc discussed the importance of regulatory guidelines such as the International Council for Harmonization of Technical Requirements for Pharmaceuticals for Human Use - Good Clinical Practice (ICH-GCP) and the NDCT Rules 2019. These guidelines provide a framework for conducting clinical trials that ensure patient safety and the reliability of trial results.

He highlighted the growing trend towards decentralised clinical trials (DCTs). He explained that DCTs are becoming increasingly popular due to their ability to reduce costs, increase patient engagement, and accelerate the drug development process. The presentation provided valuable insights for those working in the clinical research industry, as well as investors and other stakeholders interested in the field. By intro-

ducing attendees to the various aspects of clinical operations, Nandamuri explained complex concepts in a clear and concise manner, and shared his insights into the latest trends and developments in the industry.

Vipin Kumar, Application Specialist, Cytiva, delivered the third lecture on the Biacore system and its use in the discovery and early stage development of bio therapeutic antibodies. During his presentation, Dr. Kumar discussed the importance of characterizing and selecting antibodies for precision diagnostics, and how the Biacore system can assist in this process.

He provided a brief history of the Biacore system, which is a widely used platform for measuring biomolecular interactions. He explained how the system has evolved over time to be able to handle a wider range of assay and sample types, making it an essential tool for researchers in the field of biotherapeutics.

Dr Kumar also provided an overview of the principle of plasmon resonance, which is the underlying technology behind the Biacore system. He explained how the system works by measuring changes in the refractive index of a sensor surface as analytes bind to it, allowing researchers to study

the interactions between molecules in real-time. Overall, Dr. Kumar's presentation provided

valuable insights into the Biacore system and its capabilities in the field of biotherapeutic antibody development. By introducing attendees to the system's history and principle of operation, he helped to demystify this powerful technology and a better understanding of the Biacore system and its potential applications in biotherapeutics research.

The day concluded with remarkable presentations by Plumika Yapa, Faculty of Applied Sciences, University of Sri Jayewardenepura, and Dr Kalpani Ratnayake, Faculty of Health Sciences, CINEC



WORLD TRADE C
SHAMSHABAD VISAKH

Campus from Sri Lanka presented on the topics of Breast Cancer and Inflammatory Diseases, respectively.

Overall, the workshop demonstrated that collaboration between academia and industry can lead to groundbreaking advancements in drug discovery and development, and serves as a testament to the power of knowledge sharing and innovation.

Guinea Pig as an Animal Model used in Medical Research – An overview

By Anusha Senevirathne

The domestic guinea pig, *Cavia porcellus*, is a small mammal of the order Rodentia (Clemens, 2011). It belongs to the family Cavidae which is characterized by four digits on the forepaw and three on the hind-foot (Veterinary manual, 2022). When compared with other lab animals, Guinea pigs have been extensively used as experimental subjects in animal studies since the 17th century. Moreover, the close similarity of their immune system to that of humans and their predisposition to infectious diseases has made them a typical model which can be used in the study of infectious diseases. In 1882, these animals had been employed to determine that the bacterium *Mycobacterium tuberculosis* causes tuberculosis, and in 1919, the immunological responses of guinea pigs to an inoculation with blood from yellow fever patients was used to determine acquired immunity (Coates, 2014). Hence, the Guinea pig was the first animal model to be used in the study of infectious diseases such as tuberculosis and diphtheria (Rocca et al, 2009).

These animals are also used in nutritional research and their most important contribution to the medical world came with the discovery of Vitamin C in 1907, since guinea pigs, like humans, do not naturally produce this vitamin and must get it from another source. A surprising fact is that Guinea pigs' ears are not that different from our own. So, they served as an ideal model to study our auditory system. Scientists, previously thought that when the cochlear hair cells, which were the main contributors to help us hear, once destroyed cannot be regenerated. However, with the help of our little Guinea pig friends, in 2003, scientists were able to regrow the hair cells and take the initiative in discovering a way to prevent hearing loss as we age.

When compared with the off-springs of most of the other rodents, the newborn pups of Guinea pigs immediately move and have well developed hair, teeth, claws, partial eyesight and a matured central nervous system at birth. Moreover, since the pups begin to eat solid foods immediately after birth the Guinea pig serves as an excellent experimental animal model for germ-free research studies (Coates, 2014).

This rodent is also widely used to provide tissues and organs for research. Guinea pig blood and isolated organ preparations such as lung and intestine are extensively used in research to develop novel therapeutics. An important contribution was the discovery of beta-blockers to treat high blood pressure and drugs to treat gastric ulcers.

Guinea pig intestines at some point in their development had led to the development of anti-nausea drugs used by cancer patients and the identification of a naturally occurring pain killing substance known as enkephalins. Moreover, its intestine has been used to study the “little brain” in the gut, which contains as many nerve cells as the spinal cord. This has given insights not only into the control of the gut itself but its nervous coordination as well. Thus, these studies have been used to develop computer models.

The airways of Guinea pigs are sensitive to allergens resulting in them being used widely in asthma studies. The inhaled medication which is the mainstay of asthma treatment was developed using these valuable animal models. On the other hand, the extreme allergic reaction and anaphylactic shock has been extensively studied in guinea pigs; which display this reaction more readily and strongly when compared to the other species.

The long gestation period (59-72 days) and mature central nervous system at birth contributes the Guinea pig serving as an important model for safety testing, particularly to prevent birth defects. Additionally, they were used as animal models crucial for the development of vaccines for diphtheria and TB, replacement heart valves, blood transfusion, kidney dialysis, antibiotics and anticoagulants and asthma medicines. Today, they are often used in the study of sexually transmitted disease and other infectious diseases. Hence, this animal model would serve as a premier model in the field of Laboratory Animal Science contributing to the future perspectives in the development of novel therapies and scientific research.



**Figure: - An adult albino, short-hair, Hartley strain
Guinea pig**
(Courtesy of The Medical Research Institute, Colombo-08)

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Laboratory Animal Experiments on several Vaccinations: An Impact for the Development of vaccines against SARS-CoV-2 virus.

By Piumika Yapa

An excess of 150 million infections from SARS-CoV-2 have been reported worldwide in just over one year, while COVID-19 has accounted for more than 3.2 million lives. The genome of the SARS-CoV-2 virus was made publicly available on January 11, 2020, bearing the GenBank accession number MN908947 (Vandeputte *et al.*, 2021). Accelerated vaccine development for SARS-CoV-2 virus was substantially enhanced by the adoption of emerging platform technologies, specifically mRNA and recombinant vector technology, which were the outcomes of decades of crucial expenditure of research and development. Numerous vaccinations and vaccine production facilities for this devastating viral infection will be required to ensure total coverage of the global population of approximately 8 billion individuals (Wu *et al.*, 2020).

Many of the vaccines invented for SARS-CoV-2 viral infection have received conditional market approval (EMA, 2023) or authorization for emergency use (Office of the Commissioner, 2023) although numerous vaccines continue to be in the preclinical or clinical development stages. Significant efficacy towards infection and hospitalization, as well as acceptable safety profiles, were found in phase III investigations. These vaccinations significantly decreased viral load in recipients, which may have an influence on transmission according to data collected from those who received approved vaccinations (Levine-Tiefenbrun *et al.*, 2021).

Numerous research groups and organizations have created non-human primate models employing rhesus macaques (*Macaca mulatta*), cynomolgus macaques (*Macaca fascicularis*), and small vertebrates including ferrets (*Mustela furo*) or Syrian golden hamsters (*Mesocricetus auratus*) for the research and development of SARS-CoV-2 countermeasures. The experiments were conducted with the aforementioned animal models who were challenged with the SARS-CoV-2. Those animal models have been vaccinated with several types of vaccines such as mRNA vaccines (Pfizer BioNTech, Moderna, and Curevac), Yellow fever vector recombinant vaccines (University of Leuven, Belgium, Regavax), Adeno vector recombinant vaccines (AstraZeneca and J&J), Measles recombinant vaccines, subunit vaccines, nanoparticle vaccines, and purified inactivated vaccines (Wu *et al.*, 2020).

According to the published results from these research studies, vaccinations have the ability to reduce or eliminate the infection and the propagation of the virus in non-human primates, ferrets, and hamsters. The beneficial effect of the vaccine on the infectious state would be demonstrated by a significant decrease in viral load in the lung tissues. Therefore, it is possible that the prevention or reduction of viral replication in the bronchoalveolar environment, which has been repeatedly demonstrated in animal models is associated to the prevention of infection and could be responsible for significant effectiveness in clinical trials (Baden *et al.*, 2021; Voysey *et al.*, 2021). Also, a significant reduction in excretion would show the capacity of the vaccine to impede the transmission and dissemination of SARS-CoV-2.

Intriguingly, in non-human primate models, the impact of the vaccine appears to be greater in lung tissue compared to nasal tissue, in contrast to the hamster model. They exhibited greater severity of clinical signs in untreated animals, the impact of the vaccine in lung tissue and in nasal tissue appears to be the same, though evidence with regard to viral existence in the nasal turbinates of Syrian gold hamsters is scarce and requires further investigation. Nevertheless, the hamster is an invaluable model to evaluate vaccination efficacy and might be a better moral choice than the possession of non-human primates, according to all available data (Singh *et al.*, 2020).

In summary, all SARS-CoV-2 vaccine candidates in those investigations which were constructed around distinct immunogens and vaccination platforms, reduced the viral load in multiple organs following exposure in animal models. Nevertheless, a considerable impact on lowering the rate of transmission is demonstrated even though the evidence on the transmission of virus in animal models is scant or not entirely accurate. As a result, what was observed in the field following widespread vaccination of human populations was predicted by the animal models. These intriguing findings encourage additional study to standardize the investigations on exposure to the virus and assess accurately the effect of each vaccine on the spread of wild viruses like SARS-CoV-2 in the population in order to expedite the developing of new vaccines.

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First International Member of SLALAS

By Dr. Hasanthi Rathnadiwakara



Dr. K.S.V Angu Bala Ganesh (PhD, MSc, MBA)
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Dr. K.S.V. Angu Bala Ganesh is from the Tiruppur district of Tamil Nadu, India. Currently, he is Assistant Professor of Anatomy at CU Shah Medical College and Hospital, Gujarat, India.

He did his Bachelor's degree in Physiotherapy, Masters and PhD in Medical Anatomy. He has additional qualifications in research and administration such as a Masters in Hospital Administration, PG Dip in Bioethics, PG Dip in LAS and FELASA certification for Animal Research.

He is a well-established academic with 12 years of teaching experience in different countries like India, Nepal and Malaysia. Currently, his research involves the use of lab animals for toxicological studies.

He is a life member of SLALAS, Sri Lanka and LASA India, Association of Anatomist Tamil Nadu State, and the Anatomical Society of India, ASI. Since May 2023, he is one of the members in the teaching panel for the Post Graduate Diploma in Laboratory Animal Science Program, Faculty of Medicine, University of Colombo, Sri Lanka.

Emeritus Professor Vera Baumans Award for the Best Publication in Laboratory Animal Science

By Dr. M.G.T.M Prasadinie

Emeritus Professor Vera Baumans is a specialist in the field of laboratory animal science at Utrecht University, The Netherlands. She was on the advisory panel when organizing the first international certificate course on laboratory animal science (LAS) in the Asian region held at the Faculty of Medicine, University of Colombo in 2011. Prof Baumans was a resource person too.

Subsequently, she was the Chief Guest at the Inaugural Scientific Sessions of the Sri Lanka Association for Laboratory Animal Science (SLALAS) held in January 2014 where she was presented the Honorary Membership of SLALAS considering her enormous contributions to the field of laboratory animal science at the global level.

Prof Vera Baumans nominated Prof Mangala Gunatilake, the Founder of the SLALAS for the Charles River Prize 2022 awarded by the American Association for Laboratory Animal Science (AALAS). Among the applicants, Prof Mangala Gunatilake was selected and awarded this prestigious award at the Annual Conference of AALAS held in Louisville, Kentucky in 2022. Prof Gunatilake became the first South Asian recipient of this award.

Initiation of the Emeritus Professor Vera Baumans Best Publication Award

Prof Vera Baumans extended her support without any hesitation in all the activities commenced by Prof Mangala Gunatilake for the initiation of LAS education and development of the laboratory animal science discipline in Sri Lanka.

As a kind gesture for the support extended by Prof Vera Baumans, the award proposal presented by Prof Gunatilake was unanimously accepted by the SLALAS Executive Committee 2022/2023 in recognition of Prof Vera Baumans. A part of the Charles River Prize money was deposited in a fixed deposit and the interest earned annually will be utilized to present the Emeritus Professor Vera Baumans Best Publication Award commencing from January 2024 at the Annual Scientific Conference of the SLALAS.

Who are eligible to apply for the Award?

Life members of SLALAS who have been members for a minimum period of 3 years are eligible to apply for this Award.

Other criteria

- This award is open to Sri Lankans only. International life members of SLALAS are not eligible to apply.
- When there are several authors, the first author who should be a member of the SLALAS is eligible to apply.
- Only journal publications are considered for the award.
- The publication could either be in a reputed local (e.g. CMJ, NSFJ, SLVJ.....) or an international journal.
- The publication should be related to the laboratory animal science discipline i.e. application of 3Rs, animal welfare, novel findings using laboratory animal models, and novel educational initiatives.....
- Only the publications from the 1st of June of the previous year to the 30th of June of the year calling for applications by SLALAS will be considered for the award.
- A manuscript that is accepted by a journal but not published during the specified period will also be considered for the award subject to submission of the full manuscript submitted, with the journal acceptance letter/email.
- Submission for the award without the specified application form will not be evaluated for the award.
- The decision of the application evaluation committee will be final.
- There is no restriction on the number of times that a winner could apply for the award over the years.

Emeritus Professor Vera Baumans Best Publication Award

- The winner will receive Rs. 5000/- and a certificate at the Annual Scientific Sessions of the SLALAS.
- Following acceptance of the award, the winner needs to do a 15 min presentation on the information included in the selected publication.



Sri Lanka Association for Laboratory Animal Science

Emeritus Professor Vera Baumans Best Publication Award

***Have you published a research paper related to
the laboratory animal science discipline?***

**(application of 3Rs, animal welfare, novel findings using laboratory
animal models, and novel educational initiatives...)**

This opportunity is for you

- The winner will receive a cash award- and a certificate at the Annual Scientific Sessions of the SLALAS.
- Following acceptance of the Award, the awardee needs to do a 15 min presentation on the information included in the selected publication.

Deadline for submission: 30th June 2022

Further details :

Visit: <https://slalas.lk/>

**Contact: Dr. Hasanthi Rathnadiwakara/
Secretary/ SLALAS**

slalasci@gmail.com

Workshop on “Research Ethics”

By Dr. D.P.N De Silva

The Sri Lanka Association for Laboratory Animal Science (SLALAS) organized a workshop on “Research Ethics” in collaboration with the 3Rs Center in Laboratory Animal Science in Sri Lanka, Faculty of Medicine, University of Colombo and Staff Development Center, Uva Wellassa University. It was held on the 30th July 2023 at Uva Wellassa University, Badulla.

Four resource persons shared their knowledge in the workshop with around 30 participants who were academics, postgraduate students, research assistants, technical officers and final year research students of Uva Wellassa University.

Prof. Man-gala Gunatilake, President/SLALAS and Director/3Rs Centre gave an introduction on Research Ethics and discussed ‘Aspects of Animal Ethics in Research’. She further explained PREPARE and ARRIVE guidelines. Prof. Saman Herath, DEAN/Faculty of Animal Science and Export Agriculture, Chairman/Research Ethics Committee, presented the ‘Role of the Research Ethics Committee of Uva Wellassa University’. Additionally, he explained the application procedure for ethics clearance.



A fruitful discussion on different research themes and the need of ethics clearance was held with Prof. Sandun Abeyrathne. Prof. Mangala Gunathilake, Dr. Ureshani Karunaratne and Dr. D.P.N. De Silva also shared their knowledge regarding the topic. At the discussion, the main concerns raised were centred on ethical guidelines on food-related product development, mainly during sensory evaluation. Further, use of invertebrate species in research (e.g. sea cucumber, sponges etc) The panel members also noted that it there is a need to have a common guideline for ethical research with regard to product development related to animal or human food.

After the lunch break, Dr. Ureshani Karunaratne held a very interesting session on deciding the sample number for laboratory animal research. The participants had the opportunity to do some hands-on practice making calculations and determining sample size for their research.

Dr. D.P.N. De Silva, the coordinator of this workshop delivered the Vote of Thanks.



Upcoming events



August and September 2023	Certificate Course in Laboratory Animal Science		
October 2023	Workshop on Systematic Review and Meta Analysis		
November 2023	Workshop on Laboratory Animal Surgery		
December 2023	Grand Finale of the Oratorical Competition	Photo Competition	2 day, “ Certificate course on “Zebrafish as an alternative model”
January 2024	11 th Annual Scientific Sessions and International Conference		

WELCOME

New Members

1.

Dr. E.M.G.K. Naseeha Begum

2.

Dr. H.B. Dulani Kaushalya

3.

Ms. Jaanaky Vigneswaran

4.

Dr. R.M. Rasanthika Gunawardhana

5.

Ms. R. Shashika Ruwani Rajakulasooriya

6.

Ms. K. A. Sashini Umasha Kuruppuarachchi

7.

Ms. Vithushi Kuganesan

8.

Ms. Malshani Chathuranika Nissanka



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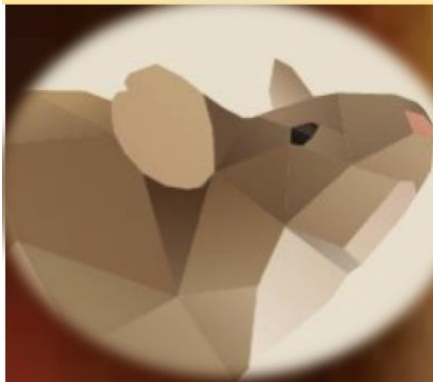
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CERTIFICATE COURSE IN LABORATORY ANIMAL SCIENCE

**Organized by the Sri Lanka Association for Laboratory Animal Science (SLALAS)
in collaboration with the Medical Research Institute (MRI), Sri Lanka &
Sri Lanka College of Veterinary Surgeons (SLCVS)**



Online Lectures

**5 Saturdays (5th August onwards)
From 9.00 a.m. – 1.00 p.m.**

Hands on Practical Session

**1 Saturday at the Medical
Research Institute (MRI)
From 9.00 a.m. – 4.00 p.m.**

**Course Fee
(Including the
practical session)**

Rs. 15000/=
**(10% off for
SLALAS members)**

**Certificate
will be
issued.**

**The maximum number of participants is 50.
Registration Link:**

<https://forms.gle/Qm9GS3eG3EQf2ku99>

**Deadline for Registration :
20th July 2023**

*** CPD points will be awarded to veterinarians.**

A/C Name : Sri Lanka Association for Laboratory Animal Science

A/C No. : 167-2-001-2-0007451

Bank: People's Bank (Town Hall Branch)

Further details : slalasci@gmail.com

**Contact :Dr Hasanthi Rathnadiwakara/ Secretary/ SLALAS
0717449382**



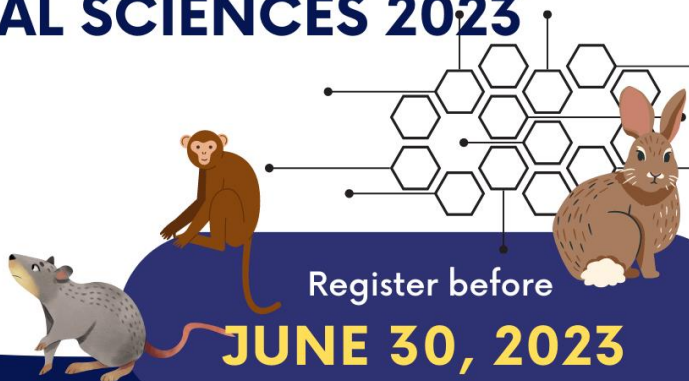


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**PITCH YOUR THESIS IN
3 MINUTES WITH 1 SLIDE**



SLALAS 3MT COMPETITION IN LAB ANIMAL SCIENCES 2023



Register before

JUNE 30, 2023

**Have you conducted laboratory animal-
based research in Sri Lanka for your
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Then come join us

Register



Participate in the
Educative session
on 3MT
competitions



Compete

FOR FURTHER DETAILS
slalasci@gmail.com

Registration link
<https://forms.gle/EWvUn2zGc7hvGgVX9>

Acknowledgement

- Dr. Dulshara Sachini Amarasekara (PhD)
Lecturer
Centre for Immunology & Molecular Biology
Department of Zoology and Environment sciences, University of Colombo
Global Korea Scholarship public envoy for Sri Lanka
- Dr. Kalpani Ratnayake (PhD)
Chief Academic Officer/ Senior Lecturer
Department of Cosmetic Science
Faculty of Health Sciences
CINEC Campus, Malabe, Sri Lanka
- Ms. Chedliya Ishak
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