

Loyola College (Autonomous) Chennai 600034



ANIMAL RIGHTS AND RESEARCH ETHICS VIRTUAL SYMPOSIUM



1 - 3 October 2021

A REPORT

ON THE

ANIMAL RIGHTS AND RESEARCH ETHICS SYMPOSIUM

Organised by

PG Biotechnology

Loyola College (Autonomous) Chennai

1 – 3 October 2021

Loyola College (Autonomous) Chennai 600034



ANIMAL RIGHTS AND RESEARCH ETHICS VIRTUAL SYMPOSIUM



1 - 3 October 2021

Biotechnology invites us to unite disciplines, hearts and minds for the good of all life and the entire cosmos. We cordially invite faculty, research scholars and students for a Virtual Symposium on the theme "Animal Rights and Research Ethics" to celebrate World Animal Day 2021 in the spirit of Saint Ignatius of Loyola, *all for the greater glory of God.*

Enrich your scientific knowledge by participating in webinars delivered by internationally renowned scientists and in events to advocate animal rights. Please submit your entries by 25 September 2021, 5 pm IST. Kindly adhere to the guidelines outlined in the registration form for each event.

- Symposium Registration click [here](#)
- E-Quiz Registration click [here](#)
- Short Film Submission click [here](#)
- Art Contest Submission click [here](#)
- Poster Submission click [here](#)

Organised by

Faculty and Students of M.Sc. Biotechnology

School of Life Sciences

Department of Plant Biology and Biotechnology

Head of Department - Dr. J. Joel Gnanadoss

Coordinator - Dr. S. Sheela

Convener - Dr. Tanya Pereira

Registration is FREE.

For more information, contact +91 6374 156 900



ANIMAL RIGHTS AND RESEARCH ETHICS VIRTUAL SYMPOSIUM



Schedule of Events

1 October 2021

5:30 pm IST - Animal Research Ethics-A Global Perspective

Resource Person: Dr. Preethi Radhakrishnan

Professor, LaGuardia Community College, New York

6:45 pm IST - E-Quiz & Short Film Presentations



2 October 2021

5:30 pm IST - You Make a Difference - Eco Champs-Bhumi

6:30 pm IST - Stem Cells for Disease Modelling

Resource Person: Dr. Amritha Jaishankar

Executive Director, Maryland Stem Cell Research Fund, USA



3 October 2021

10:00 am IST - Artificial Intelligence Ethics

Resource Person: Kashyap Kompella, CFA

CEO, RPA2AI Research, India

11:00 am IST - Poster Presentation



Organising Committee

Dr. A. Premkumar, Asst. Professor, PG Biotechnology, Loyola College (Autonomous), Chennai

Dr. Sophie Figredo, Asst. Professor, PG Biotechnology, Loyola College (Autonomous), Chennai

Ms. Taniya Mary Martin, IInd year M.Sc. Biotechnology, Loyola College (Autonomous), Chennai

Mr. Amrit J., IInd year M.Sc. Biotechnology, Loyola College (Autonomous), Chennai

Ms. R. Sugirtha, IInd year M.Sc. Biotechnology, Loyola College (Autonomous), Chennai

Ms. T. Kausalya, IInd year M.Sc. Biotechnology, Loyola College (Autonomous), Chennai

Ms. J. Teboral Jasmine, IInd year M.Sc. Biotechnology, Loyola College (Autonomous), Chennai

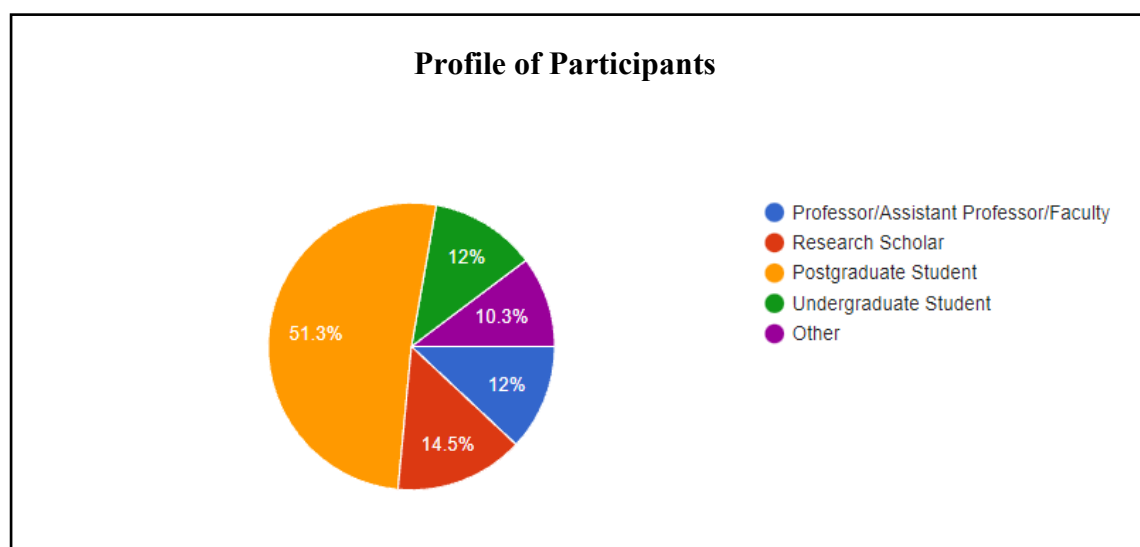
Ms. Saisangeetha J. V., IInd year M.Sc. Biotechnology, Loyola College (Autonomous), Chennai

Ms. S. Vaishnavi, IInd year M.Sc. Biotechnology, Loyola College (Autonomous), Chennai

SYNOPSIS

ANIMAL RIGHTS AND RESEARCH ETHICS SYMPOSIUM

1. Name of the organizing Department: PG Biotechnology (Shift II)
Dept of Plant Biology & Biotechnology
2. Title of Event: Animal Rights and Research Ethics
3. Head of the Department: Dr. J. Joel Gnanadoss
4. Coordinator: Dr. S. Sheela
5. Convener: Dr. Tanya Pereira
6. Duration & dates of the Programme: 3 days from 1 to 3 October 2021
7. Nature of the Programme: Virtual Symposium
8. Objective of the Programme: This symposium is a platform to unite scientific disciplines to protect animal species, advocate animal rights and promote ethical research.
9. Participants: 309 participants across 53 institutions in India YouTube comprising of faculty, industrial professionals, research scholars and students
10. Platform: Google Meet and YouTube



11. Details of Virtual Symposium:

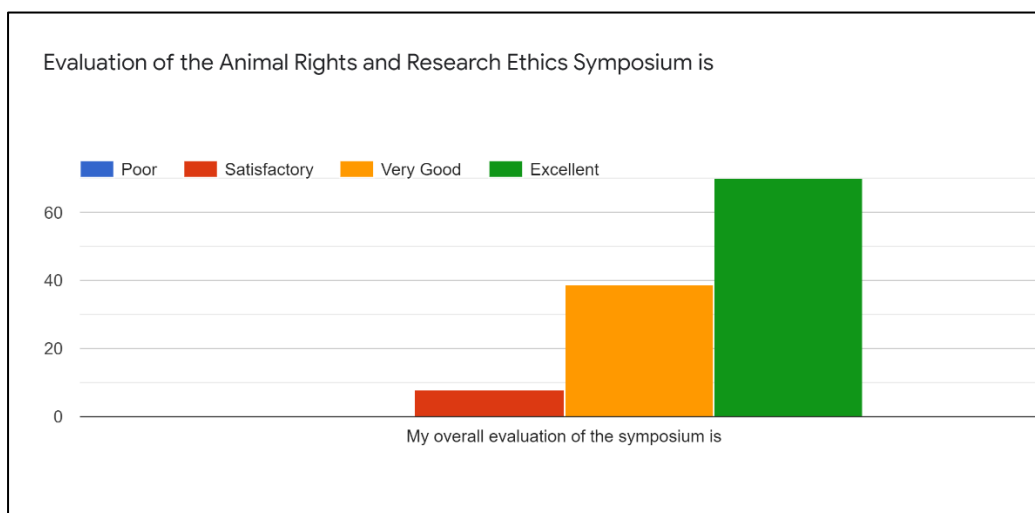
S. No.	Details of the Expert	Topic
1.	1 October 2021 Dr. Preethi Radhakrishnan Professor, LaGuardia Community College, New York	Animal Research Ethics-A Global Perspective
2.	2 October 2021 Dr. Amritha Jaishankar Executive Director, Maryland Stem Cell Research Fund, USA	Stem Cells for Disease Modelling
3.	3 October 2021 Resource Person: Kashyap Kompella, CFA CEO, RPA2AI Research, India	Artificial Intelligence Ethics

12. Feedback from Participants

- i. I really enjoyed and learned a lot of new things in all three days of symposium. The most valuable aspects of these symposium were the 3R's for Animal research, 6R's for co-existence and many more.
- ii. It was excellent and very knowledgeable symposium through this I learnt lot of things
- iii. The topic selection was really great and all the events were well organized.
- iv. I especially learned a lot when AI was included in the Animal Rights & Research Ethics topic. It was fascinating to be able to participate in such wonderful and informative sessions.
- v. I understood the importance of stem cells as an alternative animal testing
- vi. I understood that our lifestyle impacts biodiversity and the decline in animal species.

- vii. All the resource persons were so good in their interaction with students which make easy learning
- viii. It is very helpful and very much the need of the hour. I learned more about laboratory animals and how to care for them specifically what are the alternates for them.
- ix. Every aspect based on the topic was efficiently communicated with clarity and was very well regulated. We were able to build good interest in the topic as it was clear-cut.
- x. The things I got to know new were about the use of AI in distinguishing between Benign and Malignant Tumor
- xi. Using already available alternatives to animal testing and optimizing them to replace animals as much as possible. And stronger animal protection regulations are needed.
- xii. It was good to known about 3D bioprinting of live tissue
- xiii. Informative, Understandable and Application based. Symposium was well coordinated and amazing
- xiv. All the speakers were very clear and thorough. I especially liked the way they answered the participants' questions.

Participant Evaluation of Symposium



Outcome of the Symposium

85% of the participants stated that they were motivated to practice the 3R's Principle in Animal Research and Teaching.

Day 1

1 October 2021

The Department of Plant Biology and Biotechnology, School of Life Sciences, Faculty and Students of M.Sc. Biotechnology, Loyola College (Autonomous), Chennai, organized a three-day virtual Symposium on the theme “**Animal Rights and Research Ethics**” from 1 to 3 October 2021 to celebrate World Animal Day 2021.

There were 309 participants comprising faculty, industrial professionals, research scholars and students across different disciplines predominantly from the Biological Sciences. Webinars were presented by internationally recognized resource persons. The organizers also hosted an E-Quiz, Short Film and Art contests and a Poster Presentation.

The symposium commenced with a blessing by Rev. Fr. Roch SJ, Director, LSSS, Loyola College, and an Invocation Dance by Ms. Teboral Jasmine, II year PG Biotechnology, Loyola College.

The welcome address and dynamics of the symposium were given by Dr. Tanya Pereira, Convenor of the Symposium, Assistant Professor, Department of Plant Biology and Biotechnology, Loyola College. The welcome address was followed by the felicitation and introduction of the Chief Guest by Dr. J. Joel Gnanadoss, Head and Dr. Prem Kumar, Assistant Professor, Department of Plant Biology and Biotechnology, Loyola College, respectively.

The resource person of the webinar on “Animal Research Ethics – A Global Perspective” was Dr. Preethi Radhakrishnan, Professor, LaGuardia Community College, New York. Dr. Preethi Radhakrishnan, presented a global perspective giving an overview of invertebrates, vertebrates in animal research. She emphasised alternatives to laboratory animals in research and teaching, and the legal aspects with a focus on the significance of ethics that ought to be considered while using Animals. Dr. Radhakrishnan stressed the importance of practising the principle of the 3R’s in Animal Research. In her presentation, she also highlighted the methods that can be used for non-animal research like “Organ on a chip”, “3D bioprinting of live tissue” and “Biomaterial Scaffolds”. She also shared a virtual platform where we can get access to view and learn about various parts of the human body.

A website to explore the human anatomy in interactive 3D. An example of using digital tools and technology instead of real animals. Studies show students do just as well or better when given non-human alternatives to live animal dissection.

Some key points are:

- Animal ethics examines the relationship between humans and animals and how humans treat animals.
- Global perspective on the use and treatment of animals in experimental settings in research labs.
- Laws and regulations are very variable in different countries. Some laws are in place, but they may not be upheld and enforced properly.
- No universal law that protects animal rights. No code of ethics.
- The question on whether animals are sentient beings? Can animals have experiences, and can they experience consciousness? Fish are sentient contrary to popular perceptions. Insects may or may not be sentient. More research needed. Cephalopods are sentient.
- More than 100 million animals are used in research every year.
- 3Rs of Animal Research Ethics

Replacement: using alternatives to animals in-vitro and in-silico

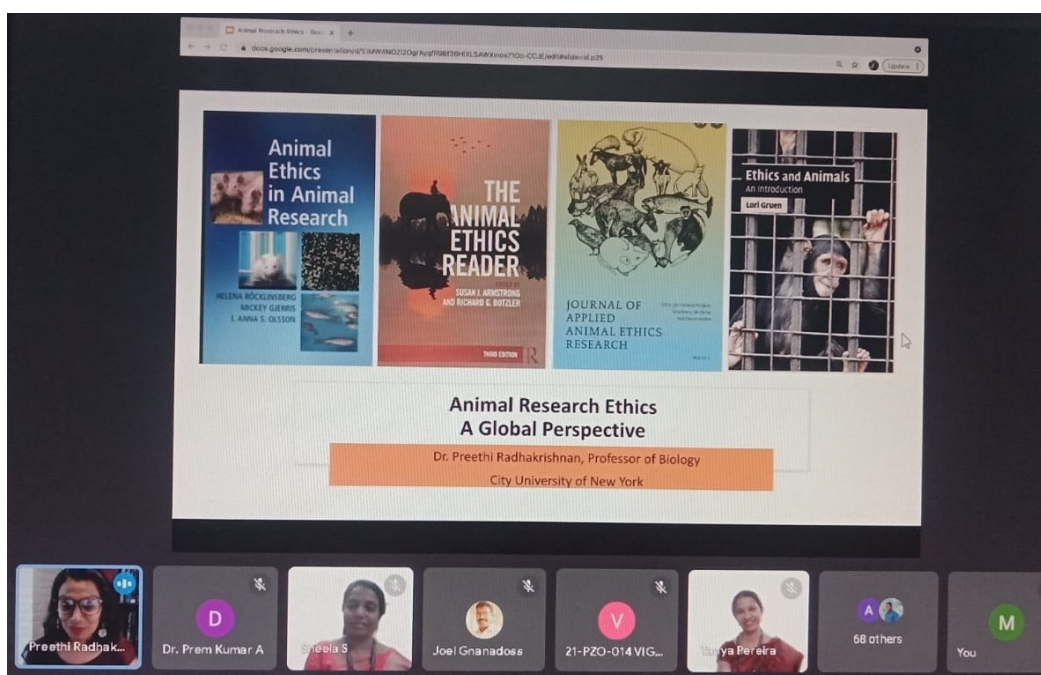
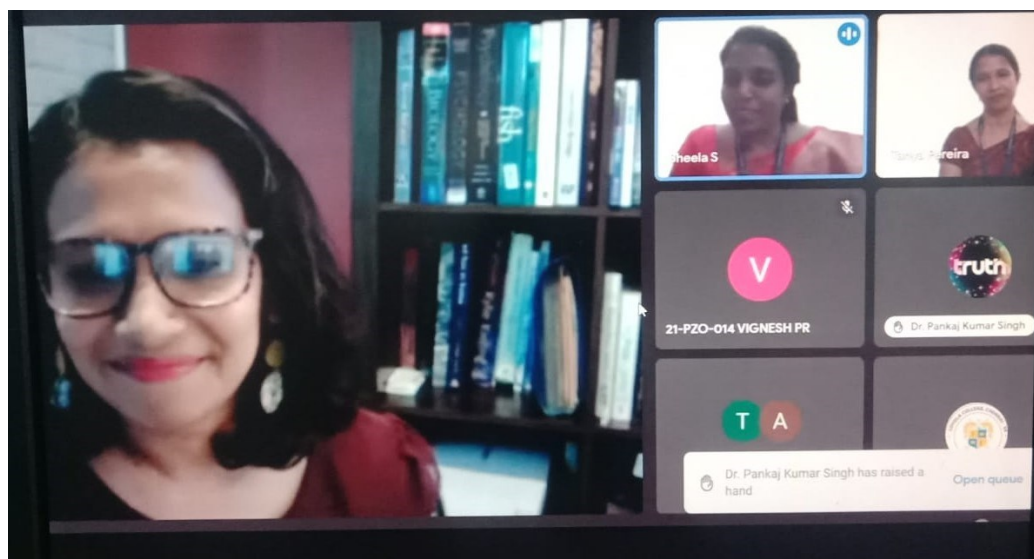
Reduction: minimising the number of animals used and the harm inflicted to them.

Refinement: improvement in the lives of animals and making active efforts to reduce their suffering. Least distress before, during and after the experiment.

- Increased understanding of animal behaviour and their needs is essential to produce valid results. 70% of research on animals is not reproducible due to the stress factors.
- Need to transition to non-animal models to replace outdated and flawed animal research
 - i. Microchip cell-based assays to do drug testing
 - ii. Organs on a chip: Mimicking human body environment for disease modelling outside of the body in a chip. Microfluidics to mimic physiological and bio-mechanical conditions of the organs. Sensors present.
 - iii. 3D bio-printing: Printing living tissues onto a scaffold and generate vascularized living human tissues.

- iv. Biomaterial scaffolding: T cell scaffold for T cell expansion. T cell placed on scaffold + microrods* with cytokines to encourage t cell proliferation.

The webinar was followed by a very interesting E-Quiz conducted by Dr. Tanya Pereira, Convenor of the symposium. The quiz was conducted in two rounds. There were 60 participants in the 1st round and 15 participants qualified for the 2nd round. The winners were selected from the top 3 scores.



The session ended with a Q&A round by Dr. Sheela, Co-ordinator, and vote of thanks by Ms. Vaishnavi, 2nd PG Biotechnology, Department of Plant Biology and Biotechnology, Loyola College.

DAY 2

2 October 2021

The second day of the Animal Rights and Research Ethics symposium began with a webinar on “You Make a Difference – Eco champs” by the NGO Bhumi. The resource persons of the webinar were Ms. Nikitha Rakala and Mr. Agnija M, Programme Coordinators of Eco Champs, Bhumi..

The day commenced with the Prayer of St Francis of Assisi “Make me an Instrument of Your Peace” by Miss Tina Jones, 1st PG Biotechnology, Loyola College, Chennai.

The welcome address and dynamics of the day was presented by Dr. Tanya Pereira, Assistant Professor, PG Biotechnology, Department of Plant Biology and Biotechnology, Loyola College, followed by the recap of Day 1 of the Symposium by Ms. Sugirtha, 2nd PG Biotechnology. The team from the NGO Bhumi was introduced by Ms. Acharya Anisha M, 1st PG Biotechnology, Loyola College Chennai.

The session entitled “You Make a Difference” was presented by the Eco Champs Programme Coordinators, Mr Agni and Ms Nikitha from NGO Bhumi - one of India's largest youth-led organisations focusing on environment and sustainability.

In the session, they spoke about the sustainability and conservation of the resources in our environment. They also highlighted the importance of Waste Management, Composting, Water Conservation, kitchen gardening, Climate change, and co-existence as an ethical lifestyle. Participants were motivated to practices the 6 R’s principle - reduce, refuse, reuse, repair, recycle and recover.

Some of the key points of the session were:

- An individual consumes about 10,000 litres of oxygen per day. 70% of O₂ comes from oceans and 50% of that from coral reefs. The reefs absorb 1/3rd of atmospheric CO₂.
- Bees and ants are tiny organisms with a vital role of pollination, soil aeration and improving its composition. Their numbers are rapidly declining due to climate change.
- Wetlands and marshlands are turning into landfills. For example, the dumping of our municipal wastes in Pallikarnai.

- Numerous animals consume plastics accidentally which is often fatal. We are causing this because of incorrect waste disposal.
- Half of the Great barrier reef has been lost in the last 25 years and maybe completely gone by 2050 if current trends continue. The primary reason of this biodiversity loss is due to ocean acidification.

The hard truth is that we are not coexisting with the animals. They emphasised that coexistence of all the species is essential for survival. A question we need to ask ourselves is; we share a planet with 8.7 million other species, are we agents of protection or are we agents of extinction of biodiversity?

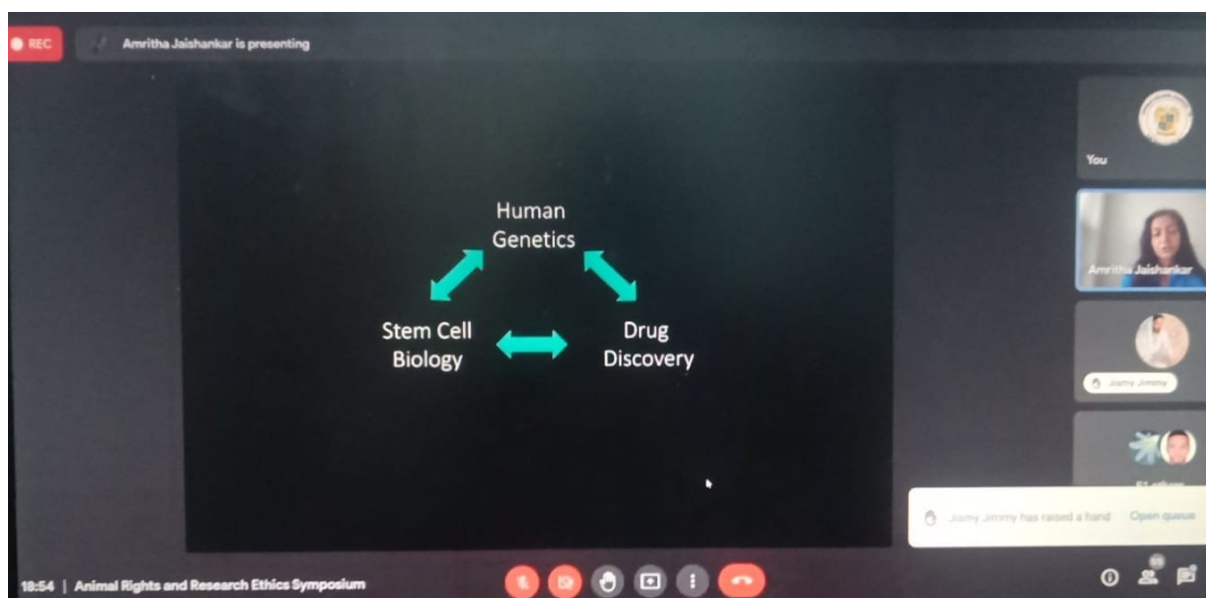
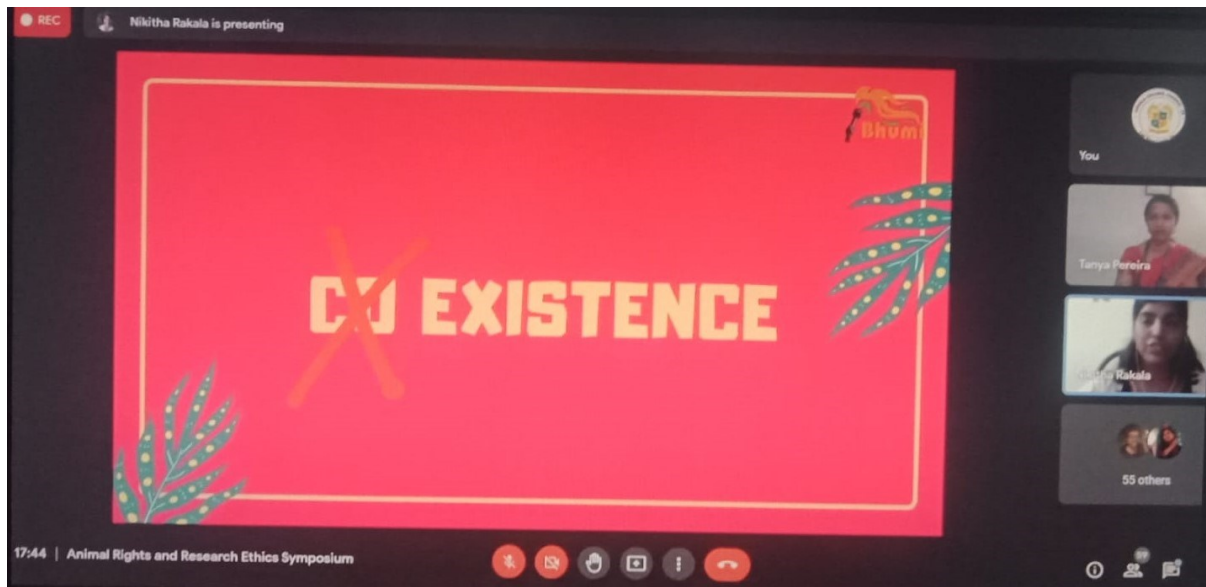
Participants learnt that circular economy can be a solution to the harmful linear economy that we are practicing. We were encouraged to live the 6 R's principle - reduce, refuse, reuse, repair, recycle and recover.

The next session was on Stem Cells for Disease Modelling. The resource person was Dr Amritha Jaishankar, Executive Director, Maryland Stem Cell Research Fund, USA. The Introduction of the resource person was given by Dr. Sophie Figredo, Assistant Professor, PG Biotechnology, Loyola College.

Dr. Amritha Jaishankar, in her presentation, highlighted current trends in Stem Cell technology with a focus on the use of stem cells in central nervous system diseases. Stem cell technology is an alternate to the use of conventional animal models to understand and treat neurological diseases which are often very unreliable in replicating human neurological conditions, Dr Amritha uses model tissues and organoids created using cutting-edge stem cell technology. The aim of these in-vitro systems is to mimic and make as real as possible the natural diseases to best understand neurological conditions and find suitable treatments.

Dr. Amritha Jaishankar talked about the challenges in drug development and the issues that arise in the making of personalized medicine. She highlighted the ethical aspects of the field and spoke on Organoid Technology for Disease modelling and drug testing

The session ended with a Q&A round by Mr. Bhukari, MC, and a vote of thanks by Ms. Saisangeetha, 2nd PG Biotechnology, Department of Plant Biology and Biotechnology, Loyola College.



Day 3

3 October 2021

The 3rd of October 2021 was the concluding day of the 3-day Symposium on Animal Rights and Research Ethics.

The third day of the symposium began with a hymn *The Canticle of the Sun* sung by Mr Sam Austin, I PG Biotechnology.

The welcome address was delivered by Dr. Tanya Pereira, Assistant Professor, Department of Plant Biology and Biotechnology, Loyola College. The welcome was followed by the recap of Day- 2 of the Symposium by Ms. Kausalya, 2nd PG Biotechnology, Loyola College. Ms. Ariba Khan, 1st PG Biotechnology, Loyola College introduced the chief guest.

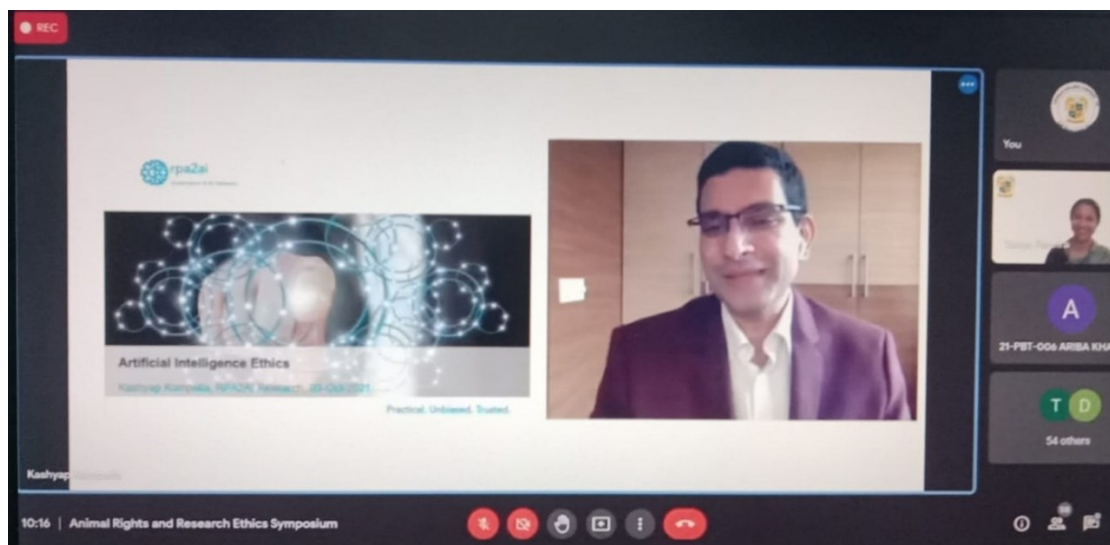
We were honoured to have as resource person Mr. Kashyap Kompella, CEO, RPA2AI Research. He is in the top 10 in the world in the field of Artificial Intelligence

In his session, Mr. Kompella elaborated how Artificial intelligence (AI) works and what is the difference between Narrow AI and General AI. He spoke on the recent trends on AI accuracy metrics, Deep and Machine learning in AI. He briefed about applications of AI in various fields like Healthcare, Diagnostics, Architecture, Animal Rights, and AI ethics. He highted the key aspects of AI Ethics – transparency, Fairness, Accountability and Security and using AI to decrease inequity. It was an interactive session with questions based on logic and reasoning. Through his talk, participants were given an insight on the ethical challenges in AI especially in the field of medicine. Mr Kompella gave us an understanding of the Special Publication from the National Academy of Medicine Artificial Intelligence in Health Care: The Hope, the Hype, the Promise, the Peril

The session ended with a Q&A round by Mr. Amrit, 2nd PG Biotechnology, Loyola College.

The webinar was followed by the E-poster presentation moderated by Mr. Amrit, II PG Biotechnology, Loyola College. The five finalists of the E-poster were invited to present. The topics were De-Extinction, Biotechnology as a companion for animal conservation, Biotechnology in the arena of wildlife conservation, Biotechnology in Animal Conservation- A glimpse through Northern White Rhino Project and In-situ Biodiversity of Animal Conservation. Participants answered questions put forth by the panel.

A symposium concluded with a vote of thanks was delivered by Ms. Taniya Martin, 2nd PG Biotechnology, Department of Plant Biology and Biotechnology, Loyola College and a hymn *Showers of Blessings* by Mr Sheron Raja, I PG Biotechnology.



Through this symposium, participants journeyed through the past, the present and the future of Animal Research Ethics. The pros and cons of the use of animals for research and teaching were discussed and the importance of practicing the 3 R's – Replace, Reduce and Refine in animal research. Participants were given an understanding of the applications of in-vitro systems such as organoid technology in particular the use of induced pluripotent stem cells for disease modelling and the current transition into the use of Artificial Intelligence in medical research. During this symposium, the advancement in science and technology was balanced with the social aspect of how we impact ecology - actions in daily life such improper waste disposal leads to loss in biodiversity. Participants were reminded that human beings are one in the 8.7 or more million species and that it is our duty to care and protect every form of life and all that sustains.

A truly ethical person understands that any challenge and solution does affect the cosmos. While we delve into the atomic scale mysteries of the cell, let us never forget to also have the bird's eye view.

We are grateful to God, and to the Management and all the participants, for the smooth conduct of the three-day virtual symposium on Animal Rights and Research Ethics.

Dr Tanya Pereira
Convener
