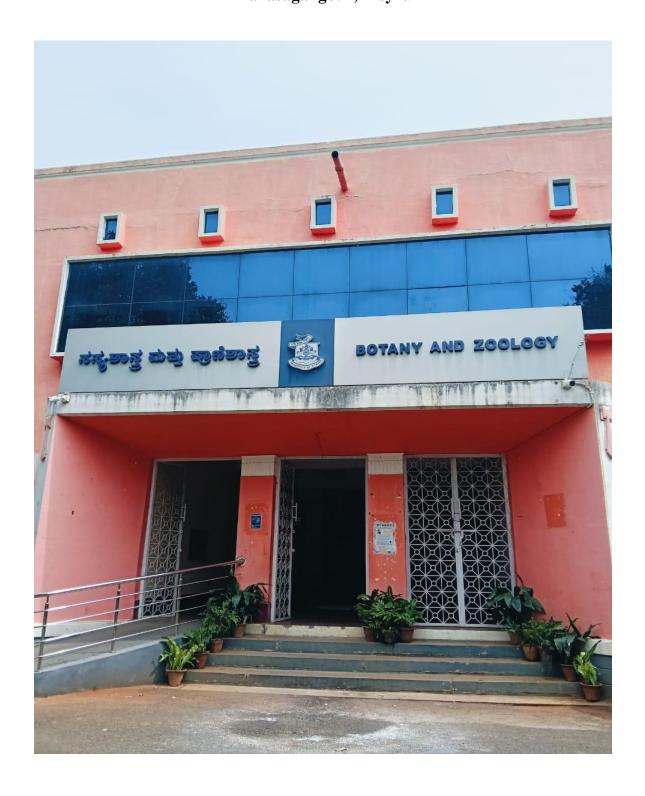
University of Mysore Department Studies in Zoology Manasagangotri, Msyru



RUSA Sponsored Two-day Seminar on "Experimental Research in Animal Models" $28^{th}\,$ and $29^{th}\,$ November, $2025\,$

Department of Studies in Zoology, Manasagangotri, Mysuru RUSA Sponsored Two-day Seminar on "Experimental Research in Animal Models" 28th and 29th November, 2025 Program Schedule



UNIVERSITY OF MYSORE

Department of Studies in Zoology, Manasagangotri, Mysuru – 06 RUSA Sponsored Two-day Seminar on "Experimental Research in Animal Models" for Teachers, Research Scholars and students.

DOS in Zoology Manasagangotri, Mysuru. Date: 28-11-2025 and 29-11-2025

Organized by: Department of Studies in Zoology, Manasagangotri, Mysuru-06

Schedule of Events

Organizing Committee

Chairman Prof. M.S. Krishna

Members:

Prof. S. Basavarajappa Prof. V. Shakunthala Dr. T.K. MohanKumar Dr. S. Santhosh Dr. Prajwala. B. Mrs. Asha P J. Mrs. Damini. C.S. Ms. Sindhu. K Ms. SriiVidya M

Schedule of Events								
	Day 1: 28-11-2025-2025 (Friday)							
9.30 -10.00	Registr	ation						
Time	Resource Person Title							
10.00 am to 11.30 am	Prof. N. B. Ramachandra, FASc Former Professor, UOM, Mysuru.	Discovery of pseudo autosomal region 3 and its implications on human health						
11.30 am to 11.45 am	Tea B							
11.45 am to 1.15 pm	Prof. G. Subramanya Former Professor, UOM, Mysuru.	Lepidopteron Silkworm Bombyxmori: A unique model organism in Genotoxicology and Gerontology Research						
1.15 pm to 2.00 pm	Lunch 1	Break						
2.00 pm to 3.30 pm	Dr. PanneerselvamVijayaraj. Principal Scientist, CSIR – CFTRI, Msyuru.	Integrating Classical Biochemistry with Functional Omics: Insights from lipid Research case study						
3.30 pm to 3.45 pm	Tea Break							
3.45 pm to 5.15 pm	Prof. M. S. Krishna DOS in Zoology Manasagangotri, Mysuru.	Why male age is important for female mate choice: insight from <i>Drosophila</i> study						
	Day 2: 29-11-2025 (Saturd	ay)						
Time	Resource Person	Title						
10.00 am to 11.30 am	Prof. Mahadesh Prasad A J DOS in Biochemistry School of Life Sciences Pooja Bhagavat Memorial Mahajana Education Centre, Mysuru	Utilization Of Animals in Vaccine discovery						
11.30 am to 11.45 am	Tea Brea	k						
11.45 am to 1.15 pm	Dr. T. Shivanandappa Former Scientist-G, CSIR -CFTRI, Mysuru.	Fly vs Rodent models in experimental biology and drug discovery						
1.15 pm to 2.00 pm	Lunch I	Break						
2.00 pm to 3.30 pm	Dr. Kusuma L Scientist – D, Central Sericulture Research and Training Institute, Mysuru.	Marker Assisted selection in the development of silkworm hybrids						
3.30 pm to 3.45 pm	Tea Br	eak						
3.45 pm to 5.15 pm	Prof. S. R. Ramesh. Former Professor, UOM, Mysuru.	Markers in genetic research: Lessons from <i>Drosophila</i> nasuta subgroup						
5.30pm	Feedback Session							

All are cordially invited by CHAIRMAN, TEACHING STAFF, RESEARCH SCHOLARS AND STUDENTS

Venue: Prof. M. R. Rajasekarasetty Memorial Hall, DOS in Zoology, Manasagangotri, Mysuru – 06.

Session 1 : Inaugural session

President address: Prof. M S Krishna

Chairman, DOS in Zoology, UOM, MGM.

Inaugural address: Prof. N. B. Ramachandra, FASc

Former Professor, UOM, Mysuru.

Date and Time : 28th November, 2025, 10.00 am to 11.30 am

Resource Person: Prof. N. B. Ramachandra, FASc

Former Professor, UOM, Mysuru.

Title : "Discovery of pseudo autosomal region 3 and its implications on human health





The two-day workshop on "Experimental Research in Animal Models' was useful for Teaching, Research Scholars and students a much anticipated event in held on November 28th, 2025 at the Department of Studies in Zoology. The seminar was attended by guest faculty, research scholars, invitees and M.Sc., Zoology students. This seminar was a great platform for experimental research using different animal models for knowledge sharing and networking among the participants and attendees.



Prof. N. B. Ramachandra speaker of session 1 provides a knowledge on intriguing exploration of copy number variation (CNV) within a newly proposed pseudoautosomal region, PAR3, located in the X-chromosome–transposed region (XTR) of the human Y chromosome. By analyzing CNV patterns, the authors highlight polymorphic features that may contribute to genomic diversity and sex-chromosome evolution. Their findings suggest potential functional significance of PAR3, expanding current understanding of recombination dynamics beyond the classical PAR1 and PAR2. Further, he also presents a comprehensive family-based genome-wide copy number variation (CNV) scan to uncover genetic contributors to dyslexia. His lecture strengthen the lies in its systematic genomic approach and its emphasis on neurobiological relevance, offering promising avenues for future investigation and potential early diagnostic markers. Overall, it provides a valuable contribution to dyslexia genetics research. This session offers valuable insights into structural variation in the human genome and lays groundwork for future studies on its biological and evolutionary implications.

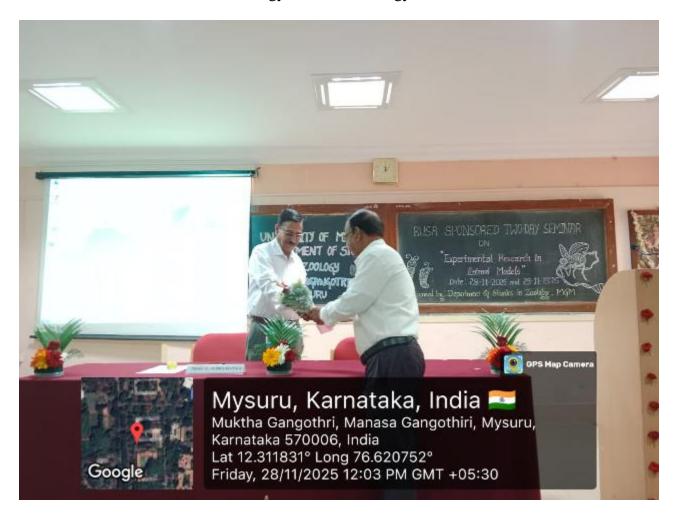
Resource Person: Prof. G. Subramanya

Former Professor, UOM, Mysuru.

Date and Time : 28th November, 2025, 11.45 am to 1.15 pm

Title : Lepidopteron Silkworm *Bombyxmori*: A unique model organism in

Genotoxicology and Gerontology Research



Session 2 speaker Prof. G. Subramanya explained that the silkworm Bombyx mori is a domesticated lepidopteran insect widely used in biological research. Its well-mapped genome, short life cycle, easy rearing, and large body size make it an excellent laboratory model organism. Because its physiological and molecular pathways share similarities with mammals, B. mori is increasingly used in genotoxicology (study of DNA damage) and gerontology (study of aging).

He also pointed out that in genotoxicology, silkworms help researchers test the effects of chemicals, pollutants, radiation, and pathogens on DNA. Their tissues respond with measurable markers such as DNA strand breaks, oxidative stress, apoptosis, and changes in gene expression. This makes B. mori a safe and cost-effective alternative to vertebrate models.



He also showed that gerontology can also be studies using silk work, silkworms are valuable for studying aging because they show clear age-related changes in metabolism, immunity, reproduction, and stress resistance. Their short lifespan allows rapid testing of anti-aging compounds, antioxidants, and pharmaceuticals. Many aging-related signaling pathways—like insulin/IGF-1, TOR, and oxidative stress pathways—are conserved between silkworms and mammals. Overall, Bombyx mori is a powerful and economical model organism, helping advance our understanding of DNA damage, environmental toxicity, aging processes, and potential therapeutic agents.

Resource Person: Dr. PanneerselvamVijayaraj.

Principal Scientist, CSIR – CFTRI, Msyuru.

Date and Time : 28th November, 2025, 11.45 am to 1.15 pm

Title : Integrating Classical Biochemistry with Functional Omics: Insights from lipid

Research case study



Dr. Paneerselvam Vijayaraj session 3 explained about the classical biochemistry has long provided detailed mechanistic understanding of enzymes, metabolic pathways, and molecular interactions. However, the emergence of functional omics—lipidomics, metabolomics, proteomics, transcriptomics—has expanded the ability to quantify and contextualize these biochemical processes at a systems level. Lipid research provides an excellent case study for examining how the integration of traditional biochemical approaches with high-throughput omics can produce deeper insights into cellular physiology, metabolic regulation, and disease mechanisms.

The topic focuses on combining classical biochemistry with modern functional omics approaches to gain deeper insights into lipid biology. Using a research case study, it illustrates how traditional biochemical methods and advanced omics technologies together can reveal lipid functions, interactions, and their roles in health and disease.

The integration of classical biochemistry with functional omics is transforming lipid research. Biochemistry provides mechanistic clarity, while omics offers systems-level insight. Together, they allow a deeper understanding of lipid metabolism, signaling, and disease pathogenesis than either approach alone. The lipid-focused case study illustrates how such integration can reveal multi-layered regulatory networks, uncover metabolic vulnerabilities, and guide the development of targeted therapeutics.

Resource Person: Prof. M. S. Krishna

DOS in Zoology

Manasagangotri, Mysuru.

Date and Time : 28th November, 2025, 3.45 pm to 5.15 pm

Title : 'Why male age is important for female mate choice: insight from

Drosophila study'



Speaker of the session 4 Prof. M. S. Krishna he explained the importance of male age in female mate choice using Drosophila as model organization. He demonstered the males on the basis of male age and obtains direct and indirect benefits from mating with preferred male age classes. He also explained different species within the same genes evolved differently for male age classes i.e., *D. melanogaster*, evolved towards younger male where as *D. bipectinata* evolved towards older males.



He demonstrated the clear understanding of sexual selection concepts and effectively explained how male age influences reproductive success through changes in sperm quality, courtship behavior and pheromone signaling. The content was well structured, relevant and presented with clarity, making complex concepts easy to follow. Overall, the seminar was informative, engaging met the expected academic standards.

Day - 2

Session 5

Resource Person: Prof. Mahadesh Prasad A J

DOS in Biochemistry School of Life Sciences

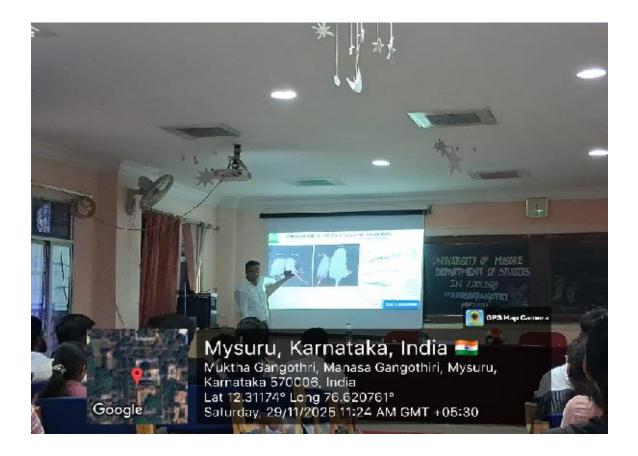
Pooja Bhagavat Memorial Mahajana Education Centre, Mysuru

Date and Time : 29th November, 2025, 10.00 am to 11.30 am

Title : 'Utilization Of Animals in Vaccine discovery'



Session 5 Resource person was Prof. Mahadesh Prasad he gave special lecture on utilization of Animals in Vaccine discovery. His Lecture focus on different animal models ranging from transgenic animals to larger mammals are chosen based on the specific aspects of the Vaccine developments they are meant to study. The uses of animals in Vaccine discovering the study its immune responses, Testing vaccine effectiveness and investigating herd immunity, safety and toxicity testing and immunity transfer has been emphasized.



In his talk, Prof. Mahadesh Prasad explained the crucial role of **animal models** in vaccine research and development. He discussed how animals such as **mice**, **rats**, **rabbits**, **guinea pigs**, **and non-human primates** are widely used to study pathogen behavior, assess immune response, and evaluate the **safety**, **toxicity**, **and efficacy** of vaccine candidates before human trials. He emphasized that these models help researchers understand disease progression, identify immune markers, and optimize vaccine formulations.

Overall, the session provided valuable insights into the scientific, ethical, and technological aspects of vaccine development, highlighting the indispensable role of animal models in ensuring vaccine safety and effectiveness.

Resource Person: Dr. T. Shivanandappa

Former Scientist-G, CSIR -CFTRI, Mysuru

Date and Time : 29th November, 2025, 11.45 am to 1.15 pm

Title : 'Fly vs Rodent models in experimental biology and drug discovery'



Session 6 Prof. T. Shivanandappa had emphasised in his lecture that the fly model was useful for their genetic tools and short generation times, which accelerate the screening of many compounds, where as rodents offer a more complex maintain system for assuring drug efficiently, safety and pharmacokinetics in centre human like model.



He also emphasized on how fly and rodent models complement each other in experimental biology and drug discovery, explaining that Drosophila enables rapid genetic screening, lifespan assessment, and cost-effective testing of natural bioactive molecules while rodent systems provide detailed physiological and morphological validation, Over all it provides discovery of drug and experiments in models of Rodent vs Fly.

Resource Person: Dr. Kusuma L

Scientist -D,

Central Sericulture Research and Training Institute, Mysuru.

Date and Time : 29th November, 2025, 2.00 pm to 3.30 pm

Title : 'Marker Assisted selection in the development of silkworm hybrids'



Dr. Kusuma L resource person for session 7 gave special lecture a **Marker-Assisted Selection** (MAS) in the Development of Silkworm Hybrid Breeding: She explained the sizes the domesticated silkworm *Bombyx mori* is a genetically tractable lepidopteran species widely used for silk production and as a model organism for studying insect genetics, physiology, and host–pathogen interactions. In India, where multivoltine × bivoltine hybrids form the backbone of commercial sericulture, genetic improvement programs increasingly incorporate molecular tools to accelerate breeding efficiency. Among these, **Marker-Assisted Selection** (MAS)—especially with **Simple Sequence Repeat** (SSR) markers—has emerged as a robust strategy to complement traditional phenotypic selection. Over all it provides in silkworm hybrids the development marker.



Resource Person: Prof. S. R. Ramesh.

Former Professor, UOM, Mysuru.

Date and Time : 29th November, 2025, 3.45 pm to 5.15 pm

Title : 'Markers in genetic research: Lessons from *Drosophila nasuta* subgroup'





Session 8 Prof. S.R. Ramesh had explained how various genetic markers can be used in the research work of *D.nasuta* such as morphological markers eg., eye color mutants, cytological makers eg; karyotypic variation, protein markers such as gene protein and accessory gland proteins. Further he also emphasized how these markers were used to explain the evolutionary changes in the pattern of inheritance and natural polymorphism in *D.nasuta* species overall it provide knowledge in genetics research from studies of *D. nasuta* subgroup.

List of participant who attended the workshop

UNIVERSITY OF MYSORE MALAVIYA MISSION TEACHER TRAINING CENTRE Manasagangotri, Mysuru-570006.

USA Sponsored Faculty Improvement Programmes (Department of Studies in Zoology)

2-Day Seminar on "Experimental Research on Animal Models" From 28.11.2025 to 29.11.2025.

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4	4.	Asha P-J. DOS in Zoology. University & Mysoore	Grust Lecturer	Fernale	OBC	9148896030 ashapj13@) gmail.com	8
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Feedback Session

The feedback from the seminar participants had highlighted that this seminar was useful for writing a research project proposals, conducting experimental research work, publishing paper and useful for there to carryout major research project work. They also pointed out that this seminar imparted the knowledge of different animal models used for experimental research work. Further limitation of each model in some research area.

In addition to the above feedback, the attendees of the seminar insisted the organizing committee to conduct such programme in future too.

Template of the Participation Certificate

No.	IVERSITY OF MYSO	7
MALAVITA	MYSORE, KARNATAKA. Certificate This is to certify that	NG CENTRE
		has participated in the
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	mprovement Programmes organized by the C	
Prof. Jyothi H.P. Director, MMTTC		Prof. N.K. Lokanath Vice-Chancellor

Workshop attendees receiving their participation certificates















