

FINAL REPORT OF SCIENCE ACADEMIES

Lecture Workshop on
Foundation Lectures in Biology

August 16-17, 2018

Sanction Letter No. SEP/LW/July 2018 dtd. 12th July 2018

Submitted to
Indian Academy of Sciences, Bengaluru, India

Submitted by

Dr. Jean Jose. J
(Coordinator & Assistant Professor in Zoology)

Sponsored By



Indian Academy of
Sciences, Bengaluru



Indian National Science
Academy, New Delhi



The National Academy
of Sciences, India
Allahabad



Organized by

Department of Zoology
St. Gregorios College, Kottarakara
Kollam District, Pincode- 691531
Kerala State, India

SCIENCE ACADEMIES' EDUCATION PROGRAMME

JOINT SCIENCE EDUCATION PANEL

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Murthy, M.R.N.
(Chairman)
Kanhare D.G.
(Co-Chairman)
Arunan, E.
Bachawat, A. K.
Balakrishnan, V.
Chattopadhyay, Nitin
Dhar, Deepak
Mukunda, N.
Radhakrishnan, T. P.
Rangarajan, Govindan
Saidapur, S.K.
Sankaran, P.
Satheesh, S.K.
Sebastian, K. L.
Sengupta, Pulak
Subramaniam,
Annappurni

Indian National Science Academy

Chattaraj, P. K.
Chaudhuri, Probal
Ghosh, Amit
Goswami, J.N.

The National Academy of Sciences, India

Dimri, V.P.
Khurana, Paramjit
Misra, Gadadhar
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SEP/LW/July/2018

12 July 2018

Dr Jose
Assistant Professor
Dept. of Zoology
St.Gregorios College,
Kottarakara, kerala

Sub: Lecture Workshop on "Foundation Lecture in Biology" at St. Gregorious College, Kottarakara, Kerala during 16 -17 August 2018.

Dear Dr Jose ,

This has reference to the letter forwarding a proposal and budget for organizing a two-day Lecture Workshop at, St. Gregorious College, Kottarakara , Kerala. The Joint Science Education Panel of the three Academies will be happy to sponsor and support the Lecture Workshop. We note that Prof S. K. Saidapur (Dharwad) will be the Workshop Convener and you will be the Workshop Co-ordinator.

(a) Your budget of Rs. 1,22,000/- Excluding travel expenses. (Resource Persons travel expenses (i) II tier A/C train fare for persons below the age of 60 (ii) air travel by Air India only for Resource Persons over the age of 60) for 150 participants has been approved by the Science Education Panel. As per the guidelines, the ideal number of participants in a Lecture Workshop should be between 100 and 125 and in any case should not exceed 150, to maximize interaction between participants and resource persons. Please note that you have to adhere to our guidelines and the approved amount is strictly following the budget heads in the guideline.

(b) Please note that only the names of Convener and Coordinator of the Workshop should be included in brochure/invitation etc. Names of members of the management, organizing committees, patrons etc must not be printed.

(c) Please ensure that the expenditure on individual items does not exceed the sanctioned BUDGET HEAD. If the actual expenditure exceeds the sanctioned budget, THE HOST INSTITUTION SHOULD TAKE CARE OF THE DIFFERENCE.

(d) Lecture Workshops are sponsored and supported by the three National Science Academies – IASc, INSA and NASI. The names of INDIAN ACADEMY OF SCIENCES (BENGALURU), INDIAN NATIONAL SCIENCE ACADEMY (NEW DELHI) and THE NATIONAL ACADEMY OF SCIENCES, INDIA (ALLAHABAD) should therefore be mentioned in all publicity material such as programme sheet, invitation cards, etc.



Indian Academy
of Sciences,
Bengaluru



Indian National
Science Academy,
New Delhi



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of Sciences, India
Allahabad

(e) It may be noted that no formal certificates should be issued to participants. A letter of attendance signed by Coordinator may be issued to those who need it.

(f) The Workshop should be called Science Academies' Lecture Workshop in "Foundation Lectures in Biology".

(g) You should send us three copies of the printed programme cards once it is printed.

(h) We urge you to open a new bank account in the name of the lecture workshop or in the name of the principal and provide full details of the account:

1. Account No;
2. Name of the Account Holder;
3. Name of the Bank;
4. Name of the Branch;
5. IFS code for non-SBI accounts.

Alternatively you can provide us the existing college bank account number to which we can transfer the amount.

(i) The audited expenditure statement/utilization certificate duly signed by competent authority (CA or Financial Controller) to be sent along with the report, once the Course is over. This is required for the audit compliance.

You can go ahead with organizing the Workshop in consultation with Prof S.K.Saidapur and keep in touch with us about the progress.

With regards,

Yours sincerely,



C S Ravi Kumar
Coordinator
Science Education Programme

The Department of Zoology, St. Gregorios College, Kottarakara, Kerala organized Science Academies two day's Lecture Workshop on **Foundation Lectures in Biology** from 16th to 17th August 2018 sponsored by the Indian Academy of Sciences, Bengaluru. The main focus of the workshop is the exchange of good practices for the development and management of biological sciences and for exploring best practices to build and organize knowledge in the form of testable explanations and predictions.

In the inaugural session, Dr. Jean Jose. J, Coordinator of the Workshop welcomed the eminent resource persons of the Science Academy and the gathering. Dr. Suman Alexander, Principal of the College delivered the presidential address, Prof. S. K. Saidapur, Convener inaugurated the workshop and mentioned about the importance of the Lecture Workshop in his inaugural speech. He motivated the participants to interact with the resource persons and make the workshop more effective. Dr. Rani. S. Dharan, HOD proposed the vote of thanks. The participants were represented by 19 teachers, 9 research scholars and 48 students from various colleges. After the inaugural function, the academic sessions were started.

Day 1

Academic session I

Milestones that Advanced Biology - by Prof. S. K. Saidapur

The session was very informative and gave new concepts in the field of evolution, epigenetics, major advances in biological sciences with special focuses on DNA, PCR and DNA fingerprinting. In his talk he mentioned the

role of genes in axis formation and cell differentiation during embryonic development.

Academic session II

Genotype to Phenotype: In the eyes of 'OMICS' by Prof. H. A. Ranganath

The second session started with the history of Genetics, Johann Gregor Mendels experiments and the phenotypic and genotypic ratios. He explained the deviations from Mendels observations such as incomplete dominance, Codominance, epistasis, polygenic inheritance and his experiments in *Drosophila melanogaster* as an animal model.

Academic session III

Biology of Aging: Proximate Causes by Dr. T. Shivanandappa

The session gave importance for the Senescence and theories related to it such as Free radical theory, Oxidative damage theory and Mitochondrial free radical theory. He also mentioned about the role of antioxidants in reducing free radicals in the body.

Academic session IV

Evolution of Sexuality by Prof. Bhagyashri A. Shanbhag

This session covered the topics related with viviparity, ovoviviparity, pseudo viviparity in teleost, skin pouch brooding, gastric brooding and vocal sac brooding. She also mentioned about the breeding experiments conducted in *Calotes spp.*

Day 2

Academic session I

Reproductive modes and strategies in Vertebrates by Prof. B. A. Shanbhag

The first session of the second day gave emphasis on hermaphroditism, its advantages, variation in genetic code, parthenogenesis – facultative and obligative, and mentioned mitosis and meiosis.

Academic session II

Biology of Aging: Ultimate Causes by Dr. T. Shivanandappa

The ultimate causes of aging were discussed in this session with preference to Classical evolutionary theory of aging, Disposable soma theory, programmed senescence theory, telomeric theory, interventions in the aging process, cell-based therapies, hormonal therapies and caloric reduction in humans etc.

Academic session III

Synthetic Genomes: An Overview by Prof. H. A. Ranganath

This session discussed about the RNA sequencing, transcriptomic databases, translation of mRNA, genomics, proteomics and metabolomics. He also mentioned about the metabolic finger printing, synthetic biology, gene expression, heterogeneous pool of RNA, regulatory RNA and catalytic RNA etc.

Academic session IV

Evolution and Human Health by Prof. S. K. Saidapur

This is the last session of the Lecture Workshop and in this session, major causes of diseases were discussed. In this session harmful genes that cause many diseases such as diabetes, Huntington's disease, hemochromatosis, progeria, sickle cell anaemia and thalassemia were explained. Evolution of

antibiotic resistance was another major point discussed. He also pointed out that virulence is an evolutionary phenomenon.

Publicity materials used for the Lecture Workshop

Ecofriendly materials were used in preparing publicity materials. Cloth Banners, jute files and seed pen were used.

I. Brochures

Note:

1. Registration for Lecture Workshop is free and limited to 125 participants.
2. No TA/DA or accommodation will be provided for the participants.
3. Interested persons may contact the Coordinator (Email: jeanlincy@gmail.com)
4. List of Participants shall be finalized by 10th August 2018.

Conveners
Prof. S. K. Saidapur FASC., FNA, FTWAS
 Former Vice Chancellor, Karnatak University, Dharwad
Dr. Suman Alexander
 Principal, St. Gregorios College, Kottarakara

Address for Communication
Dr. Jean Jose. J (Coordinator)
 Department of Zoology
 St. Gregorios College, Kottarakara-691531 (Kerala)
 Email: jeanlincy@gmail.com M: 94476 96739

Resource persons:
Prof. S. K. Saidapur FASC., FNA, FTWAS
 Former Vice Chancellor, Karnatak University, Dharwad (Convenor).
 & Former Founder Director of Higher Education Academy, Dharwad
 Email: saidapur@gmail.com
Prof. H. A. Ranganath, FASC., FNASc., FNA,
 Former VC, Bangalore University, Former Director, NAAC, Bangalore,
 and Visiting Professor, IISc., Bangalore.
 Email: haranganath@gmail.com
Prof. B. A. Shanbhag FASC., FNA, FNASc.,
 Former INSA Senior Scientist & Former Professor of Zoology,
 Karnatak University, Dharwad. Email: bhagyashrisanbhag@gmail.com
Dr. T. Shivanandappa,
 Former Senior Scientist, CFTRI, Mysore
 & Professor Emeritus, Mysore University, Mysore.
 Email: tshivanandappa@yahoo.com

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Organized by
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 St. Gregorios College, Kottarakara
 Kollam District, Pincode- 691 531
 Kerala State

II. Cloth Banners



IV. Jute file



V. Seed pen



Programme photos

Registration's counter



Welcoming Resource persons by Dr. Jean Jose. J (Coordinator)



Dr. Suman Alexander (Principal) accompanying Resource persons



Welcome speech by Coordinator LW



Presidential address by Principal



Inauguration and Inaugural address by Prof. S. K. Saidapur (Convener LW)



Vote of thanks by Dr. Rani. S. Dharan (HOD)



Participants from various colleges



Academic sessions

Prof. S. K. Saidapur



Prof. H. A. Ranganath



Prof. B. A. Shanbhag



Dr. T. Shivanandappa



Discussions and feedback



Memorable moments with Resource persons



Feedback from participants

During the valedictory session members from teaching faculty, research scholars and students gave feedback about the two days Lecture Workshop. In their talk they appreciated the Science Academies, the relevance of the topics selected by the resource persons, way of presentation and motivated the students and research scholars to develop their research aptitude in the field of Biology.

Acknowledgements

As a coordinator of the workshop, I am very much thankful to the Academy for the financial assistance. I express my gratitude to Shri. C. S. Ravi Kumar (Coordinator, Science Education Programme), Prof. S. K. Saidapur (Convener of LW) and resource persons for their valuable support and guidance. Science Academies Workshop hosted will be a great honor to our institution as it is the first of its kind in Life Sciences among the affiliated colleges in University of Kerala funded by Indian Academy of Sciences, Bengaluru.