Two day Science Academies’ Lecture Workshop on
“Recent Trends in Cellular Mechanisms and Gene Expression”
Organized by Department of Botany, St. Joseph’s College Autonomous,
Bengaluru-560027.

A Report

Venue: Xavier Hall, St. Joseph’s Post Graduate and Research Centre, #46, Langford Road, Bengaluru -560027.

Dates: 12th and 13th February 2016

Convener: Dr. D J Bagyaraj, NASI, Sr. Scientist & Chairman, CNBRCID, 41, RBI Colony, Anand Nagar, Bangalore 560024.

Coordinator: Dr. Betty Daniel, HOD, Dept. of Botany, St. Joseph’s College Autonomous

Support staff: Dr. Jacob Paul V J, Dr. Vaishnavi M, Ms. Poonam Ahuja, and Ms. Adeline Rebecca

The two day Academy lecture workshop was organized by the Department of Botany (Research Wing), St. Joseph’s College (Autonomous), Bangalore, in collaboration with the Indian Academy of Sciences, Bangalore, The National Academy of Sciences, Allahabad and Indian National Science Academy, New Delhi under the Joint Science Education Programme. The theme was “Recent trends in Cellular Mechanisms and Gene Expression”.

The seminar was intended to expose students to the recent developments in field of plant and animal gene expression which would be useful to young minds and researchers to understand how these expressions control various mechanisms in a biological system.

Printed invites included Programme schedule brochures, and posters that were sent to different departments to various colleges in Bangalore running undergraduate and postgraduate courses in life sciences, education, engineering and medicine. Around 190 participants from 13 different colleges participated in the Workshop.
Six scientists from reputed institutes of Bangalore delivered thought provoking lectures

The speakers were:

1. **Dr. M K Mathew**: Department of Membrane Biophysics, NCBS, TIFR, Bellary Road, Bangalore 560065
2. **Dr. Rajalakshmi Gope**: Professor and Head, Dept. of Human Genetics, NIMHANS, Bangalore 560029
3. **Prof. Bharathi P Salimath**: Dept. of Biotechnology, Mysore University
4. **Dr. Malali Gowda**: IISc, Next Gen. Genomics, NCBS, GKV K Campus, Bangalore 560065
5. **Dr. Anuj Kumar** (Prof. Sudhir Krishna’s Lab), NCBS
6. **Dr. Nandeesha P** Scientist, Dept. of Biotechnology, IIHR, Bengaluru

- **Prof Mathew** spoke on “The root of the matter: how rice plants cope with drought and salt”. He spoke on the prevalence of drought and salinity stress in different varieties of rice plants, of which some are resistant and others are susceptible. He explained the cellular mechanisms wherein susceptible varieties could become resistant ones.
- **Prof. Rajalakshmi Gope** spoke on “Dysregulated gene expression through post-translational modifications in human brain tumors”. She explained how post-translational modifications are crucial in regulation of protein activity since there is high correlation between mis-folding of protein and human disorders. She focused on vestibular schwannoma which arises from Schwann cells of vestibular branch of 8th cranial nerve.
- **Prof. Bharathi Salimath** spoke on “Regulation of gene expression in tumor angiogenesis”. She briefed the audience about the history of cancer and angiogenesis. She focused on epithelial-mesenchymal transition and how in situ carcinoma becomes invasive carcinoma.
- **Prof. Malali Gowda** spoke on “Dissecting cellular and phenotypic environment through metagenomics”. Prof. Malali threw light upon the concept of metagenomics and how present day genome sequencing is of prime importance and is a very quick, efficient and reliable method. He explained how unculturable microbes can be analysed to study ecological variations.
- **Dr. Anuj Kumar** spoke on “Understanding the role of host factors in regulating viral”. He began his session by briefing about Hepatitis C virus which infects humans and chimpanzees. He elaborated on host factors being important for HCV entry, replication and assembly release and how host factors can be used to regulate expression of these viral genes.
- **Dr. Nandeesha P** spoke on “Heterogenous gene expression in crop plants”. He spoke on the present day scenario where conventional breeding of commercial crop plants has been
replaced by genetically modified crops. Genetic transformation by *Agrobacterium* and the role of promoters in heterologous gene expression was explained.

The workshop was well appreciated by all the participants. They also felt the talks were informative and useful which gave the students and researchers an insight to various fields of cell expression. They were also happy with the food arrangements. The speakers were happy with the hospitality and arrangements made.

The important activities of the science academy under the science Education Panel were highlighted in the inaugural session. The journal Resonance was on display in the registration counters and many participants including faculty picked up registration forms.

The organizers express their sense of gratitude to INSc, INSA, and NASI for having collaborated with the Dept. of Botany, St. Joseph’s College, Bangalore in conducting the workshop successfully. The funding provided by the academies has been of very great help in taking care of the expenses. The college appreciates the activities of the three academies and hopes to associate with them for such useful programmes in future.

Thanking you
Dr. Betty Daniel
HOD, Dept of Botany