

Academies' Lecture Workshop on Modern Biology

Date: 28th & 29th September 2010 Venue: Mekastar (IETE) Auditorium, O.U, Hyderabad

Convener: Dr. Shekhar Mande (Convener, CDFD & Fellow, Indian Academy of Sciences)

Aurora's Degree & P.G College, Faculty of Life Sciences first started the Indian Academy sponsored lecture workshop in 2003 as part of 50th Anniversary of Celebration of DNA Discovery. This year the "VIIth Lecture Workshop in Modern Biology" was held on 28th & 29th Sep.2010. From 2006 onwards this lecture workshop has sponsored by all the three Science Academies, namely, Indian Academy of Sciences, Bangalore, Indian National Science Academy, New Delhi & National Academy of Sciences India, Allahabad. About 200 participants from graduate, post graduate, research scholars & faculty from various colleges & universities participated in the event.

Day 1(28-09-2010):

The inauguration for the two day workshop was done by **Dr. Ravi Paturi (Principal, Aurora Degree & P.G.College), Dr. Shekhar Mande (Convener & Fellow, Indian Academy of Sciences), Dr, Sanjeev Khosla (Staff Scientist, CDFD), Dr. Sharmistha Banerjee (Professor, HCU) & Prof Nambiar (HOD, Dept. of Microbiology & Genetics).**

The first lecture was by **Dr. Sanjeev Kholsa, Staff Scientist, Centre for DNA Fingerprinting & DNA Diagnostics (CDFD), Hyderabad** who talked on the topic "Reprogramming of genetic Information. He talked briefly about how cells with the same genetic information perform different functions. He started his lecture with Mendelian inheritance, Non Mendelian inheritance, Para mutations, how chromosomes have dimorphism, X-chromosome inactivation. He also discussed in detail about epigenetic modification especially in detail about DNA methylation.

The Second lecture was by **Dr. Sharmistha Banerjee, Asst.Professor, University of Hyderabad**. She talked on topic "**Tuberculosis: Challenges ahead**". She started the lecture enumerating the history of the disease and the recent developments and the molecular studies in tuberculosis.

The third lecture was by **Prof Tapas K Kundu, Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bangalore**. He talked about our "**Genes and Cancer**". He gave a brief history of genetics throwing special insight in Mendelian inheritance and Darwinian evolution & also gave early studies on DNA as a genetic material. He briefly talked about Central Dogma, the dynamic chromatin model of functional nuclear architecture with constant folding and unfolding of genes. He elaborated the concept of cancer studies and research. He gave elaborate information on Oncogenes and proto oncogenes and also briefly talked about age & cancer.

The fourth lecture was by **Dr. Durgadas Kasbekar, Senior Scientist, Centre for Cellular and Molecular Biology (CCMB), Hyderabad** on "**Why Study Neurospora**". He gave an excellent presentation on Neurospora, the different mating types and elaborated his research on Neurospora in his laboratory on erg-3 mutants phenotypes. He also talked about lamin- β receptor gene in Neurospora which has 40% identity with human Lamin- β receptors. The mutation in the Lamin- β receptor in human can affect the life of fetuses. He also elaborated with examples how neurospora can be used as a model

system to understand gene expression and development studies and can extrapolate it understand the functions of homologous genes in other organisms.

Day-II (29-09-2010):

The first lecture was by **Dr. Sharmila Mande, Head, Bioscience, Advanced Technology Centre Tata Consultancy Services Ltd.** She talked on “**Metagenomics: Understanding how microbes rule the world**”. She introduced the diverse world of microbes and said that we do not know about 99% of world’s microbes. She elaborated the role of microbes to modulate and maintain the atmosphere, the global carbon cycle, role of microbes in health, bioremediation.

She introduced the concept of metagenomics on the ongoing metagenomics project. She gave brief idea of culturing of microbes and pointed out most microbes cannot be cultured by traditional methods as they do not survive on isolation but have on mixed complex environments sharing symbiotic relationships. Hence culture independent cloning and analysis of microbial DNA by genomics and metagenomics approach. She gave detailed idea of metagenomics projects. Then moved on to comparative metagenomics it challenges about taxonomic estimation, assembly of genomes, gene prediction functional characterization and sequence validation. The lecture was focused on Metagenomics and computational biology.

The second lecture was by **Prof. V. Nagaraja, Indian Institute of Sciences, Bangalore on the topic Metagenomics: A fascinating area of Microbiology.** He gave an exhaustive introduction about the microbes in the world in diverse environments. He talked about classical microbiology and the rapid progress in the subject. He said only 1% of the microbes are cultivable. How do we study those microbes which are uncultivable. Hence metagenomics studies application of genomics to uncultivable (uncultured) microorganisms. He elaborated using this method how 52 phyla in microbes have been delineated. He also talked about how metagenomics is used as modern means of determining microbial diversity and evolution. He gave detailed account of metagenomics library function driven analysis and how metagenomics and its off shoots have advanced our understanding of species relationship, environmental adaption and evolutionary history.

The third lecture was by **Dr. M. S. Reddy, Centre for DNA Fingerprinting & Diagnostics (CDFD) Hyderabad on Apoptosis.** He briefly talked on cell life and cell death. He gave exhaustive details on genetically programmed cell death and its importance in development, homeostasis, elimination of pathogens and tumor cells.

K S S Bindhu	St.Francis (begumpet)
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P Jagadish	Telangana University
B.Nagaraju	Telangana University
V Jagan Reddy	Princeton Collage
A Hima Bindu	A.V.PG Collage
Sruthi Varier	A.V.PG Collage
A Vidhya	A.V.PG Collage
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K Satya Murthi	Osmania university
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M Ravi	Bhavans
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V R.Vinish	Osmania university
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Y David	Hyderabad Cental University
Erica Nathan	Osmania university
Ch Swathi	Osmania university
Sai Priya	Osmania university
Meron Yilma	Osmania university
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E Ragadeepthi	Hyderabad Cental University
B Jagadeeshwar Rao	Hyderabad Cental University
D Shanmukha Kumar	Hyderabad Cental University
M Eshwar	Hyderabad Cental University
M Shravan Kumar	Hyderabad Cental University
Y N Gajapathi Varma	Hyderabad Cental University
I Santosh Kumar	Hyderabad Cental University
B Madhu Krishna	Hyderabad Cental University
Anjali Khatari	Hyderabad Cental University
Vineet Sadarangani	Hyderabad Cental University
Mool Chand	Hyderabad Cental University
Harish Kumar	Hyderabad Cental University
M Vijay Kumar	Hyderabad Cental University
Y Daniel	Hyderabad Cental University
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Harsha Agarwal	Aurora degree collage
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M.Samatha Vani	Aurora degree collage
G.Soujanya	Aurora degree collage
N.Mamatha	Aurora degree collage
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Nikitha	Aurora degree collage
Jayasree	Aurora degree collage
Mounika Deshpande	Aurora degree collage
varsha	Aurora degree collage
Amala	Aurora degree collage
Gousia	Aurora degree collage
Lavanya	Aurora degree collage
Mercy	Aurora degree collage
Ajay	Aurora degree collage
Alekya	Aurora degree collage
Smrithi	Aurora degree collage
Sai Sri	Aurora degree collage
Prathyusha	Aurora degree collage
Suresh	Aurora degree collage
Madhusmitha	Aurora degree collage
Anusha	Aurora degree collage
Bala Sailaja	Aurora degree collage
Amreen	Aurora degree collage
Rajender	Aurora degree collage
samntosh	Aurora degree collage
shankar	Aurora degree collage
mahesh	Aurora degree collage
Laveen	Aurora degree collage
Mumtaz	Aurora degree collage
Renuka	Aurora degree collage
H.Shiva Jyothi	Aurora degree collage
Ganesh	Aurora degree collage
Hyder	Aurora degree collage
Dilip	Aurora degree collage
Archana	Aurora degree collage
Sahithi joshi	Aurora degree collage
Deepak Bhatia	Aurora degree collage
Siddharth	Aurora degree collage
Rajesh Ratnam	Aurora degree collage
Praveen	Aurora degree collage
G.Sailaja	Aurora degree collage
Swetha	Aurora degree collage
S.Mounika	Aurora degree collage
Valli Priyanka	Aurora degree collage
Sailaja	Aurora degree collage
Shireesha	Aurora degree collage
Makkan	Aurora degree collage
Hari Prasad	Aurora degree collage

Ravi chandra	Aurora degree collage
Mamtha	Aurora degree collage
pallavi	Aurora degree collage
Azghar	Aurora degree collage
ShashidhAR	Aurora degree collage
Ravi chandra	Aurora degree collage
BHARATH	Aurora degree collage
sharif	Aurora degree collage
bhaskar	Aurora degree collage
prasad	Aurora degree collage
kranthi	Aurora degree collage
anusha	Aurora degree collage
N.Anusha	Aurora degree collage
Rejila	Aurora degree collage
supraja	Aurora degree collage
sadath	Aurora degree collage
divya	Aurora degree collage
E.Divya	Aurora degree collage
Sowmya	Aurora degree collage
rasagna	Aurora degree collage
sai Prasanna	Aurora degree collage
Abed Kumar	Aurora degree collage
Sandeep	Aurora degree collage
Vikram	Aurora degree collage
Siddharth	Aurora degree collage
kishan	Aurora degree collage
sravani	Aurora degree collage
manisha	Aurora degree collage
sairam	Aurora degree collage
naga lakshmi	Aurora degree collage
Radhika	Aurora degree collage
Sowmya	Aurora degree collage
Gowthami	Aurora degree collage
Shilpa	Aurora degree collage
Ratna	Aurora degree collage
Shruthi	Aurora degree collage
Tejaswi	Aurora degree collage
Mary	Aurora degree collage
pavani	Aurora degree collage
Manjula	Aurora degree collage
Leela Haritha	Aurora degree collage
D.Shravanthi	Aurora degree collage
Smruthi	Aurora degree collage
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