

INTERNATIONAL CONFERENCE ON
“GENOMICS AND STEM CELLS”

On 6th & 7th January 2015

Organized by: Depts. of Botany, Zoology & Chemistry
Inaugural Session 6th January 2015



Ch. Radhika HOD. Botany inviting the Guests



Lalitha Pavani II CBZ Student presenting a Bouquet to K.U. V.C. Prof. V. Venkaiah



I.Anusha III CBZ Student presenting a Bouquet to Dr. V. Narayana Rao, Principal, KBN College



V. Nandini III CBZ Student presenting a Bouquet to Dr. P.B. Kavi Kishore, O.U, Dept. of Genetics



D. Bhavani III CBZ Student presenting a Bouquet to Treasurer Damodhar Rathi



Tejaswini III CBZ Student presenting a Bouquet to President Sri. U. Sambasiva Rao



K. Udaya III CBZ Student presenting a Bouquet to Secretary & Correspondent



Lalitha pavani III CBZ Student presenting a Bouquet to A. Nageswar Rao (CA, Alumni)



Syamala III CBZ Student presenting a Bouquet to Dr. V. Subhashini, HOD Zoology



Dr. V. Narayana Rao as president of the International Seminar



The Eminent Retd. Staff of KBN College at the International Seminar



Faculty and Students at the seminar



K.U. V.C. Prof. V. Venkaiah lighting the Lamp



Dr. P.B. Kavi Kishore, O.U, Dept. of Genetics Lighting the Lamp



Lightening the Lamp by Secretary & Correspondent Sri. S.V.S.M. Razith Kumar



Lightening the Lamp by A. Nageswar Rao (CA, Alumni)



Lightening the Lamp by Treasurer Damodhar Rathi



Lightening the Lamp by Dr. V. Subhashini
HOD. Zoology



Lightening the Lamp by Dr. V. Narayana Rao,
Principal, KBN College



Prayer song by III CBZ Students



Guests & Speakers at the International Seminar



Audience at the International Seminar



Dr. V. Narayana Rao addressing the participants at ICGSC



Sri. S.V. S.M. Razith Kumar addressing the participants at ICGSC



Dr. V. Subhashini, HOD Zoology addressing the participants at ICGSC



President U. Sambasiva Rao addressing the participants at ICGSC



Audience at the ICGSC



VC of K.U Prof. V. Venkaiah addressing the gathering at ICGSC



P. B. Kavi Kishore delivering the Keynote address



T. Bhagya Kumar delivering his speech



Vote of Thanks by T. Bhagya Kumar



Releasing the Proceedings CD of ICGSC



Presentation of Memento to Vice Chancellor



Prof.K. Venkaiah Interacting with press



Prof. P.B. Kavi Kishore Interacting with press



TECHNICAL SESSION - II



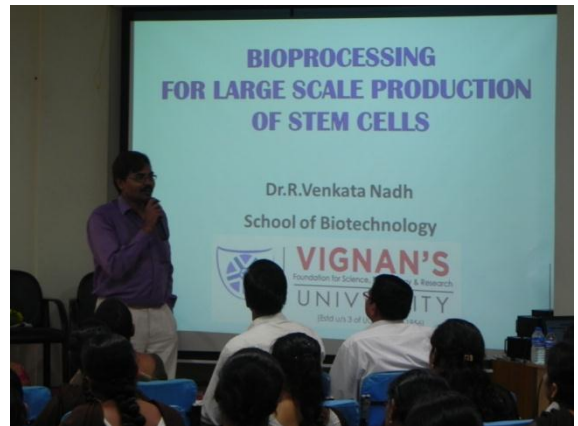
Dr. V. Mohan Krishna SARC, Scientist at ICGSC

SECOND DAY ICGSC 7-1-2015

TECHNICAL SESSION - 3



**Dr. Kiran Kumar Lecturer in PG Chemistry
Introducing Dr. R. Venkata Nadh**



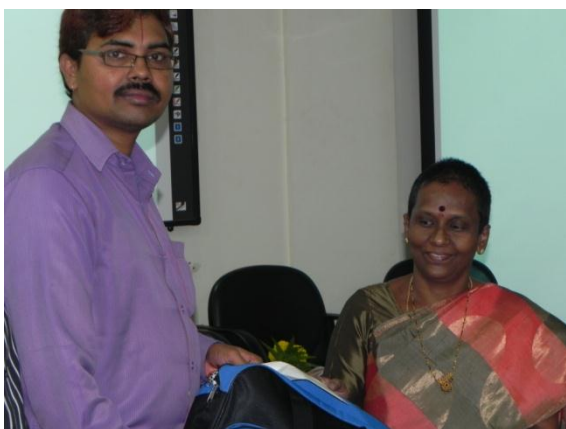
**Dr. R. Venkata Nadh, Dept. Of Bio-Technology,
Vignan University**



**Faculty and Students Listening to
Dr.R. Venkata Nadh**



**Dr. G. Krishna Veni & Dr. Kiran Kumar
Conducting the Technical Session**



**Dr. V. Subhashini presenting a memento
Dr.R. Venkata Nadh**



**Faculty and Students Listening to
Dr.R. Venkata Nadh**



**Prof. P. Rama Chandra IIIT, Hyderabad
addressing the gathering**



**Prof. P. Rama Chandra IIIT, Hyderabad
addressing the gathering**



**Faculty and Students Listening to
Prof. P. Rama Chandra**



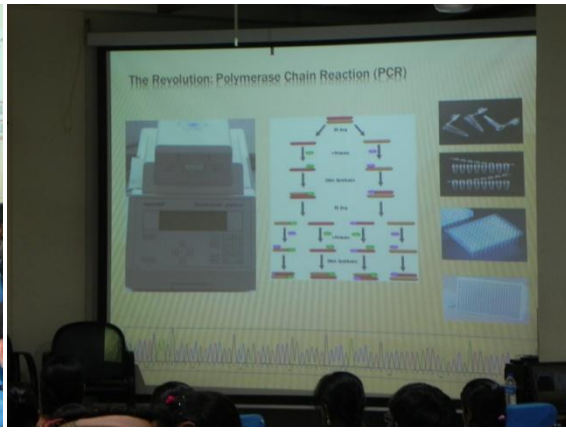
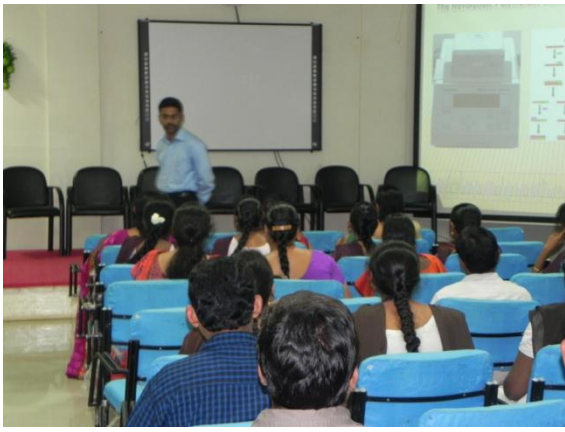
**Faculty and Students Listening to
Prof. P. Rama Chandra**



Participant clearing the doubt



**Dr. G. Krishna Veni & O. Sailaja PG Dept. of
Chemistry**



**Lead Lecture by Dr. Aditya Upadrasta
Asst. Manager, R &D, Unique Bio Tech Ltd.**



Lead Lecture by Dr. Aditya Upadrasta



**Lead Lecture by Dr. G. Mohana Krishna
Dept.of Bio-Chemistry, AU**



**Lead Lecture by Dr. G. Mohana Krishna
Dept.of Bio-Chemistry, AU**



**J. Pandu Ranga Rao presenting a memento
Dr. G. Mohana Krishna**

ORAL PRESENTATIONS



Dr. Rose Mary Lecturer in Botany, AL College, Vja



Dr. Anita Susan Lecturer in Zoology, AC Clg, Gnt.



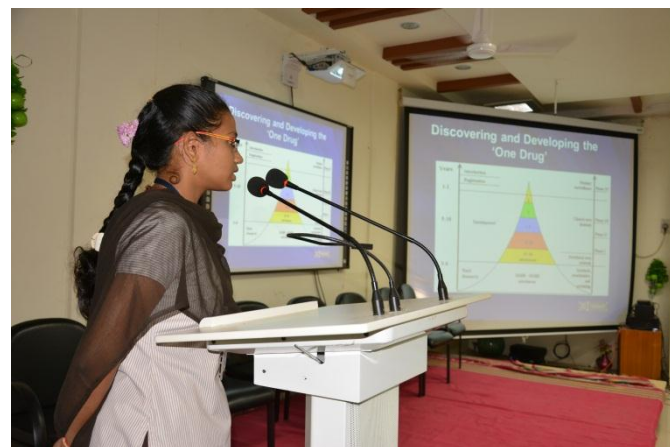
Smt. Niraja Lec. In Bio-Tech. Maris Stella Clg, Vja



Smt. Nitya Lec. In Zoology, Maris Stella Clg, Vja



Sk. Chand Basha, Research Scholar, ANU



Hima Bindu, I MSc (Chemistry) KBN College



Dr. G. Krishna Veni HOD, PG. Chemistry conducting Technical Session



Madhavi, Viswa Bharathi College of Pharmaceutical Sciences, Guntur



R. Ranjani, Padmavathi Mahila College, Tirupathi



M. Pradeep, M.Sc Bio-Chemistry, Govt Degree College, Srikakulam



Staff & Participants at ICGSC

POSTER PRESENTATIONS



G. Sudhakara Rao, Viswa Bharathi College of Pharmaceutical Sciences, Guntur



Bhavani, M.Sc (Che), JMJ College, Tenali



B. Yaswasi, M.Sc (Zoology), AC, College, Guntur



Madhavi, Viswa Bharathi College of Pharmaceutical Sciences, Guntur



VALIDICTORY SESSION



Dr. V. Narayana Rao, Principal addressing the valedictory audience



Sri. S.V. S.M. Razith Kumar, Sec & Corr. addressing the valedictory audience



Valedictory address by Dr. Srinivas Raju, IMA Chairman



Valedictory address by Prof. M. Basaveswara Rao Special Officer, KU





Valedictory address by Dr. V. Narayana Rao



Conveners' Report by Dr. V. Subhashini



Feed Back by K. Ravi Shankar, Lecturer in Zoology, Andhra Lovola College, Vijayawada



Feed Back by Dr. Satya Latha Lecturer in Zoology, TJPS College, Guntur



Feed Back by B. Harika, SARC Scientist, Hyderabad.



Felicitating Prof. M. Basaveswara Rao

DISTRIBUTION OF ICGSC CERTIFICATES



Dr. V.Subhashini, receiving the certificate



Ch. Radhika, receiving the certificate



J. Panduranga Rao, receiving the certificate



O. Sailaja, receiving the certificate



K. Ravi Shankar, receiving the certificate



T. Bhagya Kumar, receiving the certificate



P. Nitya, Maris Stella College, receiving the certificate



G. Srinu, Research Scholar, ANU receiving the certificate



Sk. Chand Basha, Research Scholar, ANU receiving the certificate



V. Mohan Krishna, receiving a Memento



Vote of Thanks by Lt. K. P. T. Vijay Bhaskar



Audience of at ICGSC Conference at Valedictory function

International Conference on Genomics and Stem Cells

6th & 7th January, 2015

Stem cells have the unique and defining characteristics of unlimited self-renewal and capacity to differentiate into progeny cells of specialized function. During the course of human embryonic development and throughout the adult lifespan, stem cells play a pivotal role in the establishment and on-going repair of virtually all organ systems. Impairment of normal stem cell function can result in birth defects, tissue degeneration, and even cancer. Thus, it is essential to develop a detailed understanding of the molecular basis by which stem cells regulate the processes of self-renewal and differentiation. At present, the scientists are working with adult, embryonic, and cancer stem cells to unravel the complex networks that control these states and to understand how misregulation can lead to disease.

Stem cell research is a hot topic in science and the media. Stem cells renew themselves for long period of time through cell division. When a stem cell divides, it can either remain a stem cell or become another type of cell with a more specialized function such as a blood cell, a muscle cell, or a brain cell. Scientists are investigating by using cell- based therapies to treat diseases.

Genomics is a newer term that describes the study of all the genes in a person, as well as interactions of those genes with each other and with that person's environment. This conference will discuss progress in genomics and stem cell based therapies and will explore the challenges that medical professionals face. Unique insights contributing for shaping the future of personalized medicine will be discussed; ranging from the discovery of disease-associated variants to the resulting insights into disease biology and the potential for clinical application of scientific findings.

Invited talk - I

Comprehend the Linkage between Spatial Informatics and Genetics

Dr. Rama Chandra Prasad Pillutla

Lab for Spatial Informatics, International Institute of Information Technology,

Gachibowli, Hyderabad 500032

Abiotic factors, along with anthropogenic activities are considered as main driving causes of genetic variation in the species across the world. Genetic diversity is important in the context of evolutionary biology to understand the phenotype characteristics of species in relation to its environmental conditions. Thus a single species distributed globally shows variation in their genetic structure with respect to their eco-climatic conditions. Identifying and mapping such diversity patterns helps to combat current climate changes and other global threat in relation to species survivability and sustainability. The approach of using spatial informatics to map the genetic diversity makes it possible to correlate the variation in genetic makeup to environmental conditions such as temperature, rainfall, altitude and other human driven changes. Spatial informatics also help in modelling the genetic diversity from a known location to unknown based on similar environmental parameters.

In view of above context, this presentation describes the concept of hybrid science "Landscape genetics" which is a combination of landscape ecology, spatial statistics, population genetics and spatial informatics. The presentation focuses on basic concepts of spatial informatics — Geographical Information System (GIS), Global Positioning System (GPS) and satellite remote sensing and their linkage to genetics or genetic diversity mapping. Further to comprehend the concept, examples are described from case studies on spatial epidemiology, genetically modified organisms/species distribution, Genome Spatial information System, etc. The presentation makes an attempt to create awareness among the geneticists to take up an interdisciplinary research approach breaking the monotonous traditional investigations and adding new dimension in genomic research, which is perhaps lacking or lesser.

Invited talk-2

Prospects in Diatom research for new bioactive compounds and biofuels.

**Mr. Thomas kiran. M. Chief Technology Officer, Kadambari Consultants Pvt. Ltd.,
Hyderabad, India**

In recent years, there has been tremendous interest in micro algal metabolites among researchers such as natural products chemists, pharmacologists, and biochemists. There are two major reasons for this surge of interest. First, it has been recognized that microalgae can be a source of new types of metabolites or potential drugs. In the past drug searches have been focused mostly on organisms such as actinomycetes, fungi, and higher plants. Here, people are increasingly isolating known compounds or close analogues of known compounds, and the task is becoming more and more repetitive and wasteful. Meanwhile, microalgae have yielded new types of structures not found in higher plants or other traditional drugs sources. The second reason is that microalgae have been attracting so much attention is the realization that they may be primary source of some exciting molecules found in marine invertebrates. In the past two decades a number of new structures with unique biological activity have been found in invertebrates. Many of them are potential therapeutic drugs, but their supplies are very limited. Of all the micro algal species diatoms is a major group having enormous potential in neutraceutical and biofuel industry.

A number of commercial developments have occurred in microalgal biotechnology in recent years. New products are being developed for use in the mass commercial markets as opposed the health food markets. these include algal derived long chained polyunsaturated fatty acids.

Invited talk-3

Enhanced sensitivity to hydrogen peroxide-induced apoptosis in Evil transformed Rat I fibroblasts due to repression of carbonic anhydrase III

G. Mohana Krishna and T. Raghava Rao Department of Biochemistry, Andhra University

Abstract

EVII is a nuclear zinc finger protein essential to normal development, which participates in acute myeloid leukaemia progression and transforms Rat I fibroblasts. In this study we show that enforced expression of Evil in Rat I fibroblasts protects from paclitaxel-induced apoptosis, consistent with previously published studies. Surprisingly, however, these cells show increased sensitivity to hydrogen peroxide like induced apoptosis, demonstrated by elevated catalytic activity. This effect is caused by a reduction in carbonic anhydrase production. Carbonic anhydrase transcripts are repressed by 92-97% by evil expression, accompanied by a similar reduction in Carbonic anhydrase protein. Reporter assays with the rat carbonic anhydrase gene promoter show repressed activity, demonstrating that evil expressions directly or indirectly modulate transcription of this gene in Rat I cells. Targeted knockdown of Carbonic anhydrase alone, with Dicer-substrate short inhibitory RNAs, also increases the sensitivity of Rat I fibroblasts to H₂O₂, which occurs in the absence of any other changes mediated by evil expression. Enforced expression of ca III in Evil - expressing Rat I cells reverts the phenotype, restoring H₂O₂ resistance. Together these data show that Evil represses transcription of caIII gene expression, leading to increased sensitivity to carbonic anhydrase induced apoptosis in Rat I cells and might suggest the basis for the development of a novel therapeutic strategy for the treatment of leukaemia's and solid tumours where evil is overexpressed.

Invited talk-4

Current trends in genomic biomedical research: A Bioinformatics approach

Dr. V. Mohan Krishna, Scientist, SARC, Hyderabad.

Molecular medicine requires the integration and analysis of genomic, molecular, cells as well as clinical data and it thus offers a remarkable set of challenges to bioinformatics. Bioinformatics nowadays has an essential role both, in deciphering genomic and proteomic data generated by high-throughput experimental technologies, and in organizing information gathered from traditional biology and medicine. On the advent of a completely assembled human genome, modern biology and molecular medicine stepped into an era of increasingly rich sequence database information and high-throughput genomic analysis. However, as sequence entries in the major genomic databases currently rise exponentially, the gap between available, deposited sequence data and analysis by means of conventional molecular biology is rapidly widening, making new approaches of high-throughput genomic analysis necessary. However, as sequence entries in the major genomic databases currently rise exponentially, the gap between available, deposited sequence data and analysis by means of conventional molecular biology is rapidly widening, making new approaches of high-throughput genomic analysis necessary. At present, the only effective way to keep abreast of the dramatic increase in sequence and related information is to apply bio computational approaches. Thus, over recent years, the field of bioinformatics has rapidly developed into an essential aid for genomic data analysis and powerful bioinformatics tools have been developed, many of them publicly available through the World Wide Web. In this review, we summarize bioinformatics tools for genomic research such as: genomic databases, tools for sequence alignment, single nucleotide polymorphism databases, tools for gene prediction, expression databases, and algorithms for promoter prediction.