

Report on

National Level Competition for Bio-Science Students

July 05 – 06, 2018

Workshop Topic

“BIOINFORMATICS”

Organized by



**Department of Biotechnology,
Faculty of Arts, Science and Humanities
Karpagam Academy of Higher Education
Coimbatore, Tamil Nadu**

Association with Becon Fest (IIT Delhi Event)

**Program Coordinator: Dr. Prabu, G.R.,
Head (i/c), Department of Biotechnology, FASH, KAHE**

“Bioinformatics”

About the Session:

Bioinformatics is both an umbrella term for the body of biological studies that use computer programming as part of their methodology, as well as a reference to specific analysis "pipelines" that are repeatedly used, particularly in the field of genomics.

Common uses of bioinformatics include the identification of candidate genes and nucleotides.

Bioinformatics has been used for *in silico* analyses of biological queries using mathematical and statistical techniques.

The program has been organized at the **Computer lab 3, B-Block, KAHE** with an short welcome address by **Dr. Prabu, G.R.**, Head (i/c), and the **student co-ordinator, Ms. T. Priyadharshini**, III year **B.Sc (Biotechnology)** student.

Resource person:

Dr. C.N. Prashantha, IIT- Delhi certified member and Resource person from REVA University, Bengaluru has provided the training to the student participants.



Inaugural session

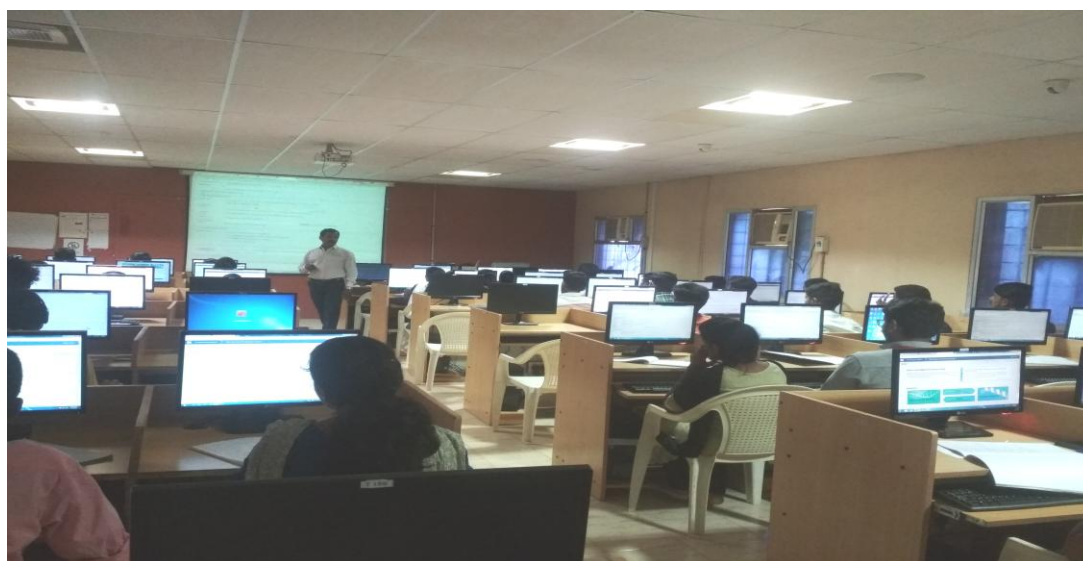
Topics:

The following topics have been covered and practiced in the training

Content covered:

- Basics of Unix
- Introduction
- Powerful text searching and matching with Regexes
- Databases and details
- Data retrieval from the database
- BLAST search – Types, Usage, Parameters
- Alignment methods
- Phylogenetic tree construction, various methods, inference
- Protein sequence and structure analysis
- Protein structure prediction
- Structure validation
- Drug design
- Molecular Docking studies
- NGS analysis tools
- High-Performance Computing
- Experimental design for sequencing experiments
- Analysis methods
- Best practices for sequencing analysis
- Computational skills

Fourty Nine students from II, III year B.Sc, B.Tech., (Biotechnology, Chemical Engineering), II Year M.Sc (Biotechnology) have actively participated and completed the tasks given by the resource person.



Technical Session

After the training, the students have participated in the **written test and group discussion** with the following questions:

Written test questions:

1. Write the list of Biological databases and their applications
2. Write the role of bioinformatics in biological research?
3. What is homology modeling and write the steps used in protein modeling?
4. What is phylogenetics and write their applications
5. How drug can be identified based on disease and write the example.
6. What is genome analysis and write the steps used in genome analysis.
7. Why genome sequencing analysis is important in population genetics?
8. How biotechnology is related to bioinformatics?
9. Write the applications of bioinformatics?
10. Why have you chosen Biotechnology for your studies?

Group discussion Topics:

1. Advanced Technologies in Biotechnology
2. Where you can see your carrier in future? Why?
3. Predicted and Personalized medicine.
4. Any biology innovative ideas

Common group discussion topic:

Why Food and Dairy industry is important

There are four groups of students for the group discussion and students have actively discussed about their views in the above mentioned topics.

Group discussion Photographs





Based on the assigned task completion, dedication in the training, interaction levels, written test and group discussion, following **five students** have been **selected** for the **final round of competition to be organized at IIT, New Delhi during October, 2018.**

List of the top five students selected for final round of competition:

- | | |
|---------------------------|----------------------------------|
| 1. Mr. ADITHIA SANKAR, B. | – II year M.Sc (Biotechnology) |
| 2. Ms. SHILPA, G. | – II year M.Sc (Biotechnology) |
| 3. Ms. T. PRIYADHARSHINI | - III year B.Sc (Biotechnology) |
| 4. Ms. SANGAVI, K | – II year B.Tech (Biotechnology) |
| 5. Ms. SWATHI, V | - II year B.Tech (Biotechnology) |

All the students have given their feedback about the program and the uses of this program in their future studies.

Finally, **Dr. Prabu, G.R, Program coordinator**, has announced the selected five students for the final round of competition at IIT, New Delhi during October, 2018 and the program ended with vote-of thanks and group photo session.



Group photo of the participants and the organizers