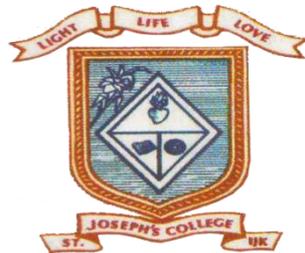


**Three Days International workshop on ‘Basics in Bioinformatics’  
Organized by**

Department of Zoology  
St. Joseph’s College (Autonomous), Irinjalakuda



**Speakers**

**Session I**

**Dr. Gigi Poulouse**

Co-ordinator, Asst. Professor & Head  
St. Joseph’s College (Autonomous), Irinjalakuda

**Session II**

**Dr. Vrinda S.**

Post-Doctoral Fellow (Brain Korea 21’)  
Incheon National University, Republic of Korea

**Session III**

**Dr. Ramya Ramankutty Nair**

Technologist  
Texas, USA

**Session IV**

**Ms. Vinu Varghese**

Asst. Professor - Applied Biotechnology  
St. Mary’s College, Thrissur

## BROCHURE

INTERNATIONAL  
**WORKSHOP**  
ON  
**BASICS IN  
BIOINFORMATICS**  
*Organized by*  
**Department of Zoology**

*Inaugural Address*  
**Dr. Sr. Asha Therese**  
Principal

*Organizing Committee*  
Dr. Vidya G, Ms. Deepthi PD, Ms. Juliet OK  
Ms. Vidya Sadanandan, Ms. Aswani Das  
Ms. Athira VC, Ms. Athira Anand  
e-Certificate will be issued

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College with Potential for Excellence  
NAAC accredited with 'A' Grade

*To Join*  
Register @  
<https://forms.gle/UwCFHw4AeUZFreBo9>

**BLAST: A Blast in Bioinformatics & GenBank Submission**  
Dr. Vrinda S.  
Post-Doctoral Fellow (Brain Korea 21)  
Incheon National University, Republic of Korea  
25-09-2021, 04.00 pm

**Tilling for Bioinformatics**  
Dr. Gigi Poulose  
Co-ordinator, Asst. Professor & Head  
25-09-2021, 03.30 pm

**Do Multiple Sequence Analysis & See the Relationship**  
Dr. Ramya Ramankutty Nair  
Technologist - Texas, USA  
26-09-2021, 06.00 pm

**Come.. Let's Try Docking**  
Ms. Vinu Varghese  
Asst. Professor - Applied Biotechnology  
St. Mary's College, Thrissur  
27-09-2021, 03.30 pm

## **REPORT** **BASICS IN BIOINFORMATICS** **Organized by** **Department of Zoology**

The three days international workshop on 'Basics in Bioinformatics' was organized by the Department of Zoology, St. Joseph's College (Autonomous), Irinjalakuda. There were four sessions in the workshop on 25<sup>th</sup>, 26<sup>th</sup> and 27<sup>th</sup> September 2021. The workshop was started with a welcome speech by Dr. Gigi Poulose, Assistant Professor & Head of Department of Zoology. The workshop was inaugurated by Dr. Sr. Anis K. V., Principal, St. Joseph's College (Autonomous), Irinjalakuda.

REC 6 Gigi Poulose is presenting

1902 - Nobel Prize in Physiology or Medicine  
Watson (b. 1928), Crick (1916-2004), Wilkins (1916-2004)  
Maurice Wilkins and Rosalind Franklin

1953 Determination of the structure of deoxyribonucleic acid (DNA)  
G.N. Ramachandran (1968)

Watson and Crick (1953) Linus Pauling and Robert Corey (1951)

Alpha, Triplet helix

Gigi Poulose  
Zoology Depart...  
Vidya Sadanan...  
Rosemol Joy  
Annet Manoj  
aswani das  
MEGHA E T  
Josmin Joseph  
Namita mk  
denna Joseph  
35 others  
You

3:42 PM | International Webinar - Tilling for Bioinform...

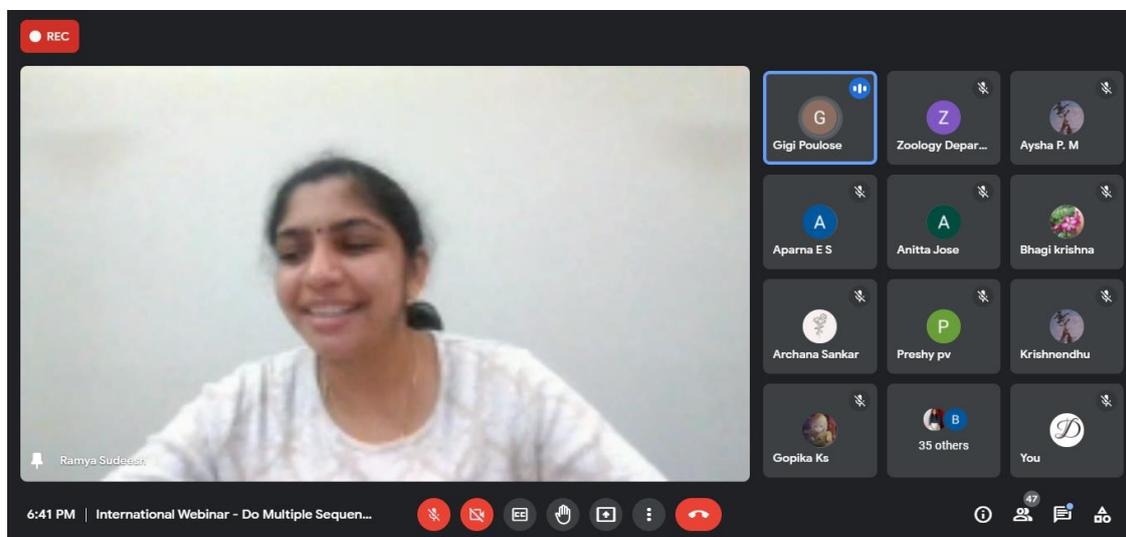
## Session I & II

A session about human genome project and computational and experimental biologists was taken by Dr. Gigi Paulose, Head of the Department of Zoology of St. Joseph College, Irinjalakuda. UG and PG students and teachers from various college and from department were the participants of the workshop. Miss gave an introduction about the perspectives of bioinformatics, BLAST and Systems Biology.

Dr. Vrinda. S, postdoctoral fellow, Inchcon National University, Republic of Korea gave a detailed explanation about the topic 'BLAST And Gene Bank Submission'. The resource person was introduced by Dr. Gigi Paulose, Head of the Department.

The Basic Local Alignment Search to Tool (BLAST) finds region of local similarity between protein or nucleotide sequences. BLAST identifies homologous sequences using a heuristic method. It is widely used in bioinformatics research area BLAST reports the best matches or hits found in the data base. There are many types of BLAST programs are BLASTN, BLASTP, BLASTX, TBLASTN and TBLASTX. This was an overall view of topic BLAST. Next Miss Vrinda discussed about the GEN BANK SUBMISSION. GEN BANK SUBMISSION is a comprehensive data base that comprises publically available nucleotide sequences. Most submissions are using the web based banklt or standalone Sequin programs. The techniques in BLAST and Gen Bank Submission are explained with the help of picture which made it easy for the participants to understand the concept.

The one hour forty-five-minute section came to an end with the vote of thanks proposed by Ms. Deepthi P. D, faculty of Department of Zoology of St Joseph college Irinjalakuda. This topic was new to many of the viewers thus gave an exposure to a new field of study. The section was helpful to understand the importance of bioinformatics in the field of BLAST.



### **Session III**

The third session of the International Workshop was on the topic “Multiple Sequence Analysis” on 26th September 2021 at 6:00 PM. The second session was taken by Dr. Ramya Ram Nair, Technologist Texas, USA. Dr. Gigi Poulouse, HOD, Dept. of Zoology, St. Joseph’s College (Autonomous) Irinjalakuda gave a brief introduction about the resource person and welcomed her to the participants after a silent prayer seeking the blessings of the Almighty. Dr. Ramya Ram Nair has eight years of research experience. She had received several awards including the Young Marine Biologist. She had completed her master’s from Bharathiar University and was awarded Ph. D in Natural Centre for Aquatic Animal Health (NCAAH), Cochin University of Science and Technology (CUSAT). She is being an Alumnae of St. Joseph’s College (Autonomous) Irinjalakuda, did her graduation in Biotechnology.

The workshop mainly focused on how do multiple sequence analysis and see the relationship and identifying microbial communities. She also spoke about the identifying bacterial characteristics like phenotypic characteristics and size of the cell and how the genotypic characters like PCR, Isolation of DNA can be done. The session also focused on identification of partial or complete gene in Chromatogram and the submission of sequence to Genbank gives an accession number or reference number. Detailing was also given once gene sequence is received then how to use BLAST. BLAST is a Basic Local Alignment Search Tool where one can search the sequence like the sequence to a large data base which is the GenBank. From the Genbank similar sequences are acquired. She also explained about how to check the similar sequences are received, one can use MEGA software which is the Molecular Evolutionary Genetic Analysis. In Clustal W, sequences are arranged and then one can result in phylogenetic tree.

Dr. Ramya illustrated the techniques of BLAST Analysis to work within the context. She encouraged and motivated the students to soar greater heights by knowing the topic of your taste and to excel to the core by putting maximum knowledge and efforts.

Ms. Athira V.C, Guest Faculty, Department of Zoology proposed the official vote of thanks to the resource person for sharing her valuable time and knowledge.

### **Session IV**

The Last session of workshop was ‘let’s try docking’ taken by Ms. Vinu Varghese, Assistant professor, Applied Biotechnology, St. Mary’s college, Thrissur on 27 September at 3 pm.UG and PG students and teachers from Various college and from department were the participants of the webinar. Resource person was welcomed by Dr. Gigi Poulouse, head of the Department of Zoology.

Ms. Vinu gave a detailed explanation on molecular docking. Docking is a study to know how two molecules interact when they bound. In this section we discussed about key terms of docking including binding mode, pose scoring, docking assessment. Main steps of docking-selection of target and ligand, generation of possible conformation and selection of scoring function were explained in detail. Insight into types of docking, flexible docking and rigid docking and their classifications was given by the resource person. Fast shape matching, incremental construction, monte Carlo simulation and simulation annealing were the different

docking approaches discussed in the webinar. Docking process was explained with the help of structures which made it easy for the participants to understand the concept.

The forty-five minutes section on docking came to an end with the proposal of vote of thanks by Ms. Vidya Sadanandan A., Asst. Professor, Department of zoology of St. Joseph's college, Irinjalakuda. The section on molecular docking clarified its importance in clinical trial studies and rational drug designing. This topic was new to many of the audience thus gave them exposure to a new field of study.

The screenshot shows a Zoom meeting interface. The main window displays a presentation slide titled "LETS DEFINE DOCKING". The slide content includes:

- Computational simulations of a candidate, ligand binding to a receptor
- Molecular modelling technique used to predict the preferred orientation of one molecule to a second when bound to each other to form a stable complex.

Below the text is a diagram illustrating the docking process. It shows a "Target" (a dark, irregular shape) and a "Ligand" (a green, flat shape). An arrow labeled "docking" points to a "Complex" where the ligand is bound to the target. A second arrow labeled "undocking" points to the ligand and target separated.

The Zoom interface shows the presenter "Vinu Shoby" and a grid of participants including Gigi Poullose, Meenakshy Jils..., Riya Babu, Dona Mary, Drisya Kp Drisy..., SHREYA NUPU..., Aiswarya Babu..., Annet Manoj, and 37 others.

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**CERTIFICATE**

This is to certify that **Ms. Riya Babu** of **St. Joseph's College, Irinjalakuda** has participated in the online **International Workshop on Basics in Bioinformatics** organized by the **Department of Zoology, St. Joseph's College (Autonomous), Irinjalakuda, Kerala** on **25-27th September, 2021**.

Certificate ID 271001

**Dr. Gigi Poullose**  
Co-ordinator & HoD

**Dr. Sr. Anis K. V.**  
Convener  
Principal