MARUDHAR KESARI JAIN COLLEGE FOR WOMEN, VANIYAMBADI
(A project of Sri Marudhar Kesari Jain Trust)

Recognised u/s 2(f) & 12(B) by UGC Act, 1956 - Permanently Affiliated to Thiruvalluvar University
Re-Accredited by NAACwith"A" Grade –An ISO 21001:2018 Certified Institution

INTERNSHIP ON COMPUTATIONAL STRUCTURAL BIOLOGY

INVITATION

Dr. M. INBAVALLI, M.Sc., M.C.A., M.Phil, Ph.D.,
PRINCIPAL
Marudhar Kesari Jain College for Women
Vaniyambadi-635 751.

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AGENDA

Day	Date	Session (10:00-12:30)	Assignment/Practicals (1:30-4:00)	Theory Sessions	Practical Sessions
1	19-06-2023	Registration	General introduction	Dr. R. Jesu Jaya Sudan & Dr. J. Lesitha Jeeva Kumari	-
2	20-06-2023	Biological Databases- Primary	Collection of primary protein information from protein databases	Dr. J. Lesitha Jeeva Kumari	Dr. J. Lesitha Jeeva Kumari & Dr. R. Jesu Jaya Sudan
3	21-06-2023	Secondary and tertiary databases	Collection of secodary and tertiary information from databases	Dr. R. Jesu Jaya Sudan	Dr. J. Lesitha Jeeva Kumari & Dr. R. Jesu Jaya Sudan
4	22-06-2023	Expasy tools	Analysis of primary sequence information using Expasy tools	Dr. J. Lesitha Jeeva Kumari	Dr. J. Lesitha Jeeva Kumari
5	23-06-2023	Sequence alignment	Sequence similarty search using BLAST	Dr. J. Lesitha Jeeva Kumari	Dr. J. Lesitha Jeeva Kumari
6	24-06-2023	Multiple sequence alignment	Conserved region identification and phylogenetic tree analysis	Dr. J. Lesitha Jeeva Kumari	Dr. J. Lesitha Jeeva Kumari
7	26-06-2023	Protein motif and domain architecture	Motif identification using PHI-Blast and Prosite	Dr. R. Jesu Jaya Sudan	Dr. J. Lesitha Jeeva Kumari & Dr. R. Jesu Jaya Sudan
8	27-06-2023	Rasmol commands and visualization	Visualization of differed protein domain structures using RASMOL	Dr. J. Lesitha Jeeva Kumari	Dr. J. Lesitha Jeeva Kumari
9	28-06-2023	SwissPDBViewer visualization and editing	Induced mutation and energy minimization of protein structures using sPDBv	Dr. R. Jesu Jaya Sudan	Dr. J. Lesitha Jeeva Kumari
10	29-06-2023	Protein motion and dynamics and energy components	Protein motion visualization using elNEMO	Dr. J. Lesitha Jeeva Kumari	Dr. J. Lesitha Jeeva Kumari & Dr. R. Jesu Jaya Sudan
11	30-06-2023	Recap and Valediction			

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REPORT

The two weeks Internship on "Computational Structural Biology" was organised by Research and Development Cell and conducted between 19-06-2023 to 29-06-2023. About 24 participants registered for the program. The theory and practical sessions were handled by Dr. R. Jesu Jaya Sudan and Dr. J. Lesitha Jeeva Kumari. During the internship program the students were taught about the importance of Bioinformatics in research. The program gave a theoretical and practical insights into the difference databases where the students were practically taught to access biological data, retrieve sequence and structure information. The thoretical concepts of the 3-dimentional structures of proteins were elaborated and the participants were taught to visualize the protein structures and domains using various structure visualization programs like RASMOL and SwissPDBviewer. The program also covered different protein modeling techniques that are generally applied to predict the theoretical structures of the proteins. Protein structure modeling programs were the taught and the participants were given a detailed practical training into applying the concepts to model the 3dimenstional structure of the proteins. In addition protein motions and dynamics were observed by the participants and were given an opportunity to explore the various molecular changes and dynamics that a protein might undergo. At the end of every session the participants were given assignment to carryout in their lab. On the final day the students were asked to present the collective report of their findings and explain the inferences. During the valediction day the students were asked to give the feedback and the internship ended with Certificate distribution.

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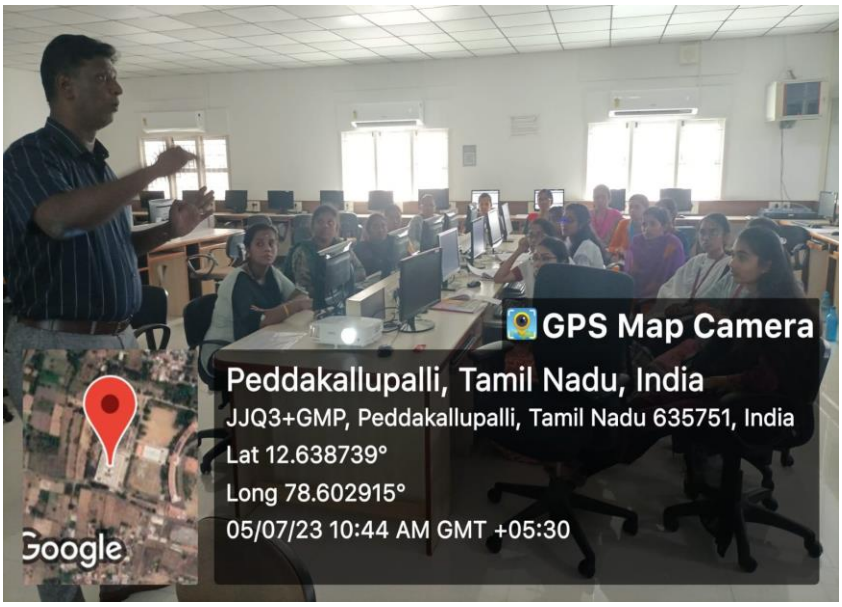
PHOTOS



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