PMRF-ISSS Teaching Programme

Prime Minister Research Fellowship students' teaching requirement

facilitated by the Institute of Smart Structures and Systems

Module PMRF-ISSS021/2023

Introduction to Transcriptomics Data Analysis

Name of the PMRF student

Ranjitha Guttapadu

Required background of the students taught

Basic understanding of biology and some commonly used computer terms. Prior programming experience, although helpful, is not essential. Students must have access to a computer/laptop with a Windows/Linux OS for the tutorials.

Online session coordinator

Will be chosen from the list of registrants

Details of the content of the module

- Basics of R and Unix programming required for transcriptomics data analysis (Hands-On Tutorials)
- Molecular aspects of transcriptomics (Lecture).
- Microarray - Workflow, Platforms, Applications (Lectures) + Microarray data analysis Hands-On tutorial.
- RNA Sequencing - Workflow, Platforms, Applications (Lectures) + RNASeq data analysis Hands-On tutorials (One single-end dataset, one paired-end dataset).
- Assignments will include literature presentations to understand the applications of transcriptomics and choosing a publicly available dataset, analyzing it, and a brief presentation on the results obtained.
- Lectures on other multi-omics approaches- Introduction to epigenetics and epigenetic sequencing, Introduction to genomics and whole genome sequencing.
- Doubt-clearing sessions will also be held.

Schedule of the module

Course dates: August 24nd – October 19th

Weekly schedule: Every Tuesday and Thursday, 6:30 p.m. – 8:00 p.m.

Meeting link : Will be shared later

Link

Contact email ID: isss.forum@gmail.com

Registration link:
https://docs.google.com/forms/d/e/1FAIp
QLSdGlJkT2j2Je3YsX-
IRZRzz6VV4E168uEC1wTZp5PI_iyeG5g
/viewform?usp=sf_link