



Module PMRF-ISSS037/II/2024

Biological Systems Modelling: Advanced Techniques

Name of the PMRF student

Pradyumna

Details of the content of the module

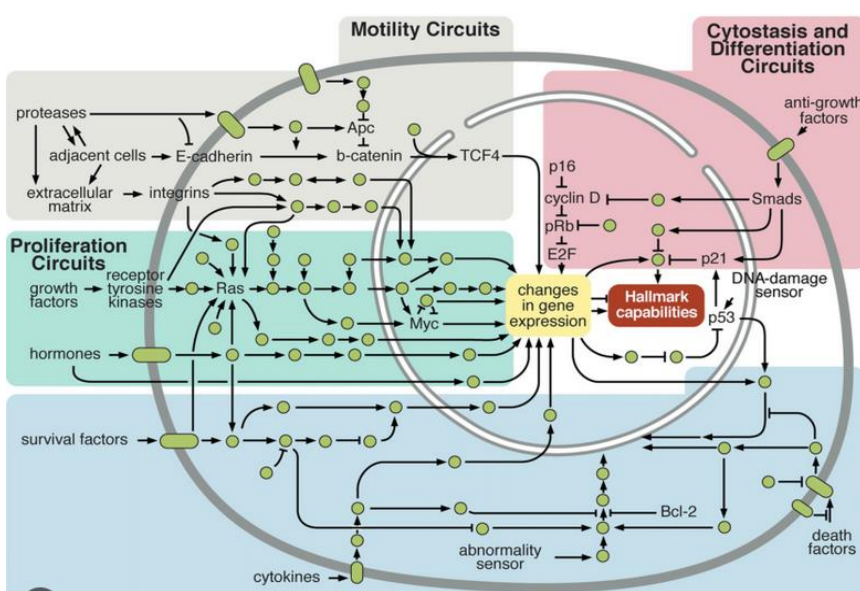
Required background of the students taught

Linear Algebra.
Ordinary Differential Equations (ODEs)
Mathematical Methods for Solving ODEs.
Basic Biology (Up to +2 Level)

This course offers a series of lectures covering essential topics aimed at providing students with a solid foundation in various approaches to mathematical modeling of biological systems:

- **Graph Theory:** Delve into the intricacies of graph theory with a focus on static networks, unveiling the structural dynamics inherent in complex biological systems.
- **Modeling Approaches for Biological Networks:** Learn about tailored modeling approaches designed for metabolic networks and gene regulatory networks, gaining insight into analyzing the intricate complexities of biological processes.
- **Parameter Estimation Techniques:** Master the art of parameter estimation, acquiring the skills to accurately infer and refine model parameters crucial for understanding and predicting biological phenomena.

Through a blend of theoretical lectures and real-world case studies, participants will cultivate proficiency in analyzing and interpreting biological networks, equipping them with the requisite expertise to navigate the complexities of computational biology.



Schedule of the module

- **Start Date:** 13th April 2024
- **End Date:** 28th April 2024
- **Lecture Schedule:** Recorded lectures will be uploaded on Saturdays and Sundays at 4:00 PM.
- **Extra Tutorial Classes:** Additional tutorial classes can be requested.

Meeting link : Will be shared later

Contact email ID: iss.forum@gmail.com

Registration

link: <https://forms.gle/6A2X5Vga7GjCz1RH>

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