

PMRF-ISSS Teaching Programme

Prime Minister Research Fellowship students' teaching requirement
facilitated by the Institute of Smart Structures and Systems



Module PMRF-ISSS013

Genome Editing: Introduction to CRISPR-Cas

Name of the PMRF student

Sakshi Gupta

Required background of the students taught

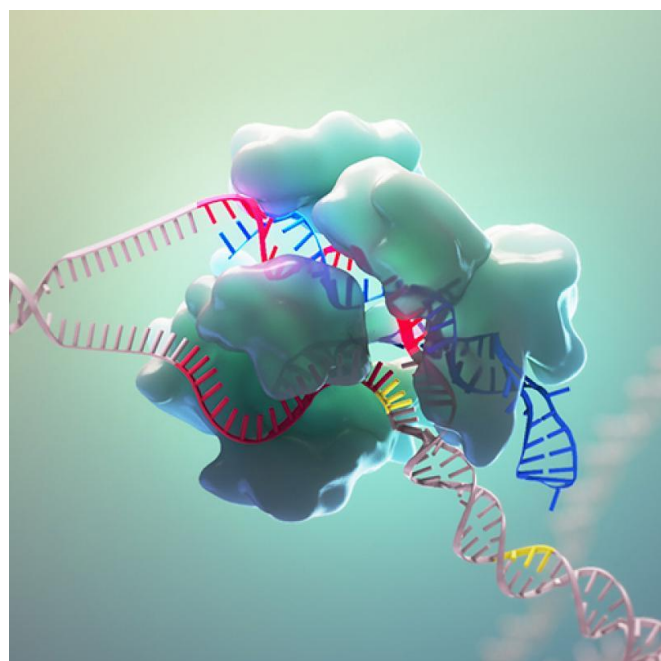
All interested UG/PG students from any background with basic knowledge of biology.

Faculty coordinator

Dr. Veda S.N.
Tyndall National Institute, University
College Cork, Ireland

Online session coordinator

Mr. Kottana Janakiram
Department of ECE, VFSTR, Guntur



Schedule of the module

Start date: Sept 17, 2021

End date: Nov 19, 2021

Every Friday: 7:00 PM – 8:30 PM

Details of the content of the module

- **Introduction to Genome editing**
 - Basics in Genetic Engineering
 - Historical perspective of genome editing
- **Genome editing: Old and New methods**
 - Homing endonucleases
 - Zinc Finger Nucleases (ZFNs)
 - Transcription activator-like effector nucleases (TALENs)
- **Introduction to CRISPR-Cas technology**
 - Principle and Discovery
 - Role in bacterial immunity
- **Genome editing by CRISPR-Cas**
 - Mechanism of action
 - Cas variants
 - Bioinformatic tools, Methodology, Library generation
 - Genome modification by CRISPR
- **Examples of genome editing by CRISPR**
 - Discussion of recent research articles
- **CRISPR in treatment of diseases**

Meeting link :

https://teams.microsoft.com/l/meetup-join/19%3Ameeting_ZDRkYWQ3MDMtNzUyNy00N2FiLWE2ZGItdDdkNjQ3MGVmNWNm%40thread.v2/0?context=%7B%22Tid%22%3A%226f15cd97-f6a7-41e3-b2c5-ad4193976476%22%2C%22Oid%22%3A%227798970d-e9b2-4a2a-8fb9-d9cca50f20ff%22%2C%22MessageId%22%3A%220%22%7D

Contact email ID: issf.forum@gmail.com

Registration link:

https://docs.google.com/forms/d/1j1HmaUydY6bC0glVZKWgqot9m5J-q7rXsnWPtm_J8Eg/edit?usp=sharing