DEPARTMENT OF ZOOLOGY
SUBJECT SOCIETY – SYNAPSES

Apr – June 2024

Convenor, Synapses: Dr. Renu Solanki

Teacher In-Charge: Dr. Shailly Anand

10th April 2024: Students (46) and Faculty members (2) of Department of Zoology embarked on an **Educational Trip** to the **Sulabh International Museum of Toilets** located in New Delhi. The purpose of the trip was to enhance students understanding of public health, hygiene, and sanitation and their importance in promoting overall well-being and preventing diseases. Students came to know about the history and evolution of toilets and sanitation practices, innovative solutions for addressing sanitation challenges globally, relationship between hygiene, nutrition, and overall health outcomes. (*Teacher Coordinators: Dr. Jai Kumar, Dr. Priya Yadav*)

21st April 2024: An **Industry Academia Awareness Program** was organized on the occasion of International Earth Day on **"E-Waste Management and Recycling: A Path towards a Sustainable Earth"**. This awareness program was organized in collaboration with "WE The Recycling Company and Sorditcon Pvt. Ltd". Chief speakers were:

- **Dr. Payal Nandurkar**, Founder of WE The Recycling Company and
- **Mr. Aditya Rai**, the Co-founder of Sorditcon Pvt. Ltd.

They spoke about the e-waste and their management and gave brief information about the e-waste disposal Mechanism. Mr. Aditya also elaborated about his company Sorditcon Pvt. Ltd. Which is a 360° Green Consulting company, working closely with the Schools, Colleges, Universities, Residential Complexes & Corporates in meeting up with their Environmental obligations such as proper Waste Management, Conducting of Awareness about E-Waste Management, Collection of E- waste & providing the required compliance for the same as per the guidelines of Central Pollution Control Board or State Pollution Control Board. (*Teacher Coordinator: Dr. Guddu Kumar*)

27th April 2024: Synapses, The Zoological Society organized **ADIEU'24**, a **Farewell Program** to bid adieu to the graduating seniors of the 2024 batch. The event was filled with nostalgia, joy, and heartfelt moments as the juniors and faculty came together to honour the achievements and memories of the departing students. (*Teacher Coordinator: Dr. Anita Gulati*).

30th April 2024: An **Educational Trip** for ……. students of B.Sc. (H) Zoology and B.Sc. Life Sciences was organized to the **National Rail Museum** and **India Gate** located in the heart of the city. This visit was intended to enhance their understanding of the evolution of the railway system in our country and its impact on both historical and socioeconomic developments. (*Teacher Coordinator: Dr. Jai Kumar*)

20th May 2024: Synapses, the Zoological Society of Deen Dayal Upadhyaya College, held its **Valedictory Session** on 20th May, 2024. The event marked the end of a year of exciting activities and learning experiences. graced the session with her inspirational valedictory speech. The event

also included the distribution of prizes for various positions in the Synapses society. (*Teacher Coordinator: Dr. Priya Goel*)

27th June -11th June 2024: 15-days Summer Internship cum Hands-on Training Program (SITP'24) on **"Fundamentals of Recombinant DNA Technology (From Environment to Laboratory: Isolation, Amplification and Cloning)"** was organized for 30 undergraduate students of biological sciences association with Science Foundation and DBT Star College Program under which the following experiments and talks were covered:

- **Invited Talk:** Recombinant DNA Technology & its Applications by **Prof. Rup Lal**, F(AAM), FNA, FNASc, FNAAS; INSA Senior Scientist, ANDC, UoD
- **Lecture 1:** Basics of Concentrations and Dilutions, Dr. Jai Kumar DDUC, UoD
- **Lecture 2:** Fundamentals of Primer Designing, Dr. Princy Hira, Maitreyi College, SUoD
- **Lecture 3:** Basics of DNA Isolation and Gel Electrophoresis, Dr. Jaya Malhotra, Deshbandhu College, UoD
- **Lecture 4:** Essentials of Polymerase Chain Reaction, Dr. Guddu Kumar, Fish Biology Laboratory, Department of Zoology, UoD
- **Lecture 5:** Methods of DNA Quantitation, Dr. Parikha Monga DDUC, UoD
- **Lecture 6:** The era from Genomes to Metagenomes!, Dr. Utkarsh Sood, Kirori Mal College, UoD
- **Lecture 7:** DNA Modifying Enzymes used in Recombinant DNA Technology & their importance, Dr. Guddu Kumar, Fish Biology Laboratory, Department of Zoology, University of Delhi
- **Lecture 8:** Transformation Techniques in Prokaryotes, Dr. Guddu Kumar, Fish Biology Laboratory, Department of Zoology, UoD
- **Lecture 9:** Screening Method: An Introduction to Alpha Complementation, Dr. Shailly Anand, DDUC, UoD
- **Experiment 1:** Preparation of Solid and Liquid Culture Media; Stock Solutions for gene manipulation studies
- **Experiment 2:** Preparation of M-FC Basal Plates
- **Experiment 3:** Sample Collection and Storage
- **Experiment 4:** Preparation of Serial Dilutions
- **Experiment 5:** Spread Plating on rich culture media & specific culture media
- **Experiment 6:** Designing of Gene Specific Primers using bioinformatics tools
- **Experiment 7:** Inoculating E. coli into Culture Medium
- **Experiment 8:** Isolation of total DNA from E. coli cells
- **Experiment 9:** Visualization of DNA by agarose gel electrophoresis
- **Experiment 10:** Polymerase Chain Reaction for amplification of gene of interest
- **Experiment 11:** Agarose Gel Electrophoresis to detect the amplified PCR product
- **Experiment 12:** Extraction of DNA from the gel using Gel Elution Kit
- **Experiment 13:** Quantitation of DNA using Nanodrop
- **Experiment 14:** DNA Sequencing of the Gene of Interest by Sanger's Method
- **Experiment 15:** Analysis of Electropherogram of the Gene of Interest
- **Experiment 16:** Ligation of the eluted gene into pGEMT Easy Vector
- **Experiment 17:** Preparation of E. coli DH5alpha Competent Cells by CaCl2 method

- **Experiment 18:** Preparation of culture plates containing IPTG, Ampicillin and X-gal
- **Experiment 19:** Transformation of the ligated product in E. coli DH5alpha cells by Heat Shock Method
- **Experiment 20:** Calculation of Transformation Efficiency

(*Resource Persons:* **Dr. Shailly Anand,** DDUC, UoD, **Dr. Rohit Jamwal**, Gut Microbiome Laboratory, Department of Zoology, UoD, **Dr. Guddu Kumar,** Fish Biology Laboratory, Department of Zoology, UoD, **Dr. Anjali**, Gut Microbiome Laboratory, Department of Zoology, UoD, **Dr. Parikha Monga**, DDUC, UoD, **Dr. Jai Kumar**, DDUC, UoD, **Dr. Vinay S. Dagar**, DDUC, UoD, **Dr. Priya Yadav,** DDUC, UoD)