

Research

1. Star Innovation Project Cluster Innovation Center, DU 2016-19 (DR-07) (22lakhs)

Title: Evaluating the effects of common food additives on Vertebrate development and organogenesis using Zebrafish as a model system.

Supervisor: Dr. Chitra Bhasin, Dr. Madhu (Zoology Dept.), Dr. Padmshree Mudgal, Dr. Anita Garg Mangla (Biochemistry Department)

Students: Biochemistry: Sakshi, Arushi, Surbhi Chauhan, Ojaswi, Shefali, Mahima, Sonali, Kangana, Kanishka, Aanchal, Life Science: Kanika, Ritika, Surbhi Pandey

2. Star Innovation Project Cluster Innovation Center, DU 2016-19 (DR-01) (7.5 lakh)

Title: Campus sustainability index (Joint project with Department of Economics and Biochemistry)

Supervisor: Dr. Sarita Nanda (Biochemistry Dept.), Ms. Malini Sharma (Economics Dept.)

Students: Enonomics (Hons): Aashi Garg, Cheshta Grover, Jyotsana, Ananya Lodha, Mansi Arora, Himani Gupta. Biochemistry (Hons): Himanshi, Mansi Saini Ujjainwal.

Zoology (Hons): Anuradha Sharma, Zainab Afreen, Arpita Bhatt

3. Star Innovation Project Cluster Innovation Center, DU 2016-19 (DR-02) (3.25 lakh)

Title: Investigating prevalence of PCOS in undergraduate students

Supervisor: Dr. Sarita Nanda, Dr. Anju Jain (Department of Zoology), Dr. Meetu Khosla (Psychology Dept.), Dr Jyoti Taneja (Department of Zoology)

Students: Zoology (Hons): Kaushki pandey, Soumya, Tanya Agarwal, Prerna, Gunjan, Sonali. Biochemistry (Hons) Manisha Debnath. Psychology (Hons) Ekta Chopra.

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Research Guidance

Name of student	Gender	Degree for which guidance given	Date of Registration	Supervisor/Cosupervisor	University	Title of Thesis	Date of submission of thesis	Date of Award of Degree

Nishant Ranjan	Male	Ph.D	2013	Co Supervisor	Bharathiar University	Heat Stress Induced Ischemia & Neuroinflammation And Role Of Thermal Preconditioning To Improve Thermotolerance	08/02/2018	4 th Feb, 2018
Manisha Gupta	Female	M.Sc dissertation	1 st Jan, 2019	Supervisor	Manav Rachna Deemed University	Evaluation of air pollution tolerance index and an anticipated performance index of plant species growing around Najafgarh Drain in Vishwavidyalaya , Delhi	30 th June, 2019	July, 2019
Simran	Female	M.Sc Dissertation	1 st Jan, 2019	Supervisor	Manav Rachna Deemed University	Evaluation of air pollution tolerance index and anticipated performance index of plant species growing in DRC campus, Vishwavidyalaya, Delhi.	30 th June, 2019	July, 2019
Pooja Sharma	Female	Ph.D(JRF)	23 rd December, 2019	Supervisor	Delhi University	Optimisation and characterization of food quality of vegetables grown on biofertilizers made from organic waste.	Ongoing	Ongoing
Sophayo Mohango	Male	Ph.D (JRF)	23 rd December, 2019	Supervisor	Delhi University	Optimisation and characterisation of bioresources formed from organic waste on campus	Ongoing	Ongoing

Research labs/Resource centres

1. Zebrafish Lab Facility

The zebrafish lab facility was set up in October 2015, jointly by the Biochemistry department and Zoology department in collaboration with CSIR-IGIB, Mathura Road, Delhi, and Sansriti Foundation Delhi. The facility has been funded by Star Innovation projects DU, Star College project DBT, Govt. of India, and Innovation projects DU. It was developed with the aim of providing an alternative ***in vivo non –invasive model system for science education, teaching and research.***

The state of the art temperature and photo-period controlled facility houses an automated re-circulatory fish habitat system, RO water plant, stereo-microscopes, inverted microscope with digital display screen (Evos) and fluorescent microscope (Nikon). Apart from ongoing research projects, the facility provides training in zebrafish model systems to faculty and students. Till date ~ 65 faculty members and ~500 students from various science streams from different Delhi University Colleges have participated in various workshops and training programs conducted by the zebrafish lab facility.

Summer internship programs are available to under-graduate and postgraduate students to get hands-on training and research experience.

Zebrafish lab facility also serves as a resource center to provide zebrafish and embryos to other colleges/ departments and research institutes to support teaching and lab practicals.

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1. The Bioinformatics Center

Computational and systems biology programs involve usage of computational tools and approaches in teaching and research in biological, medical, behavioural or health data, including those to acquire, store, organize, archive, analyze, or visualize such data. Daulat Ram College, biochemistry department believes in interdisciplinary goal-oriented research and innovation in the areas broadly related to computational sciences, such as computational & systems biology using mathematics and statistics. As the bioinformatics course is offered by the department, BIC provides services to cater the course in the department. Further the center aims to conduct workshops for students and faculties of other colleges to train them in basic bioinformatics tools. Small scale research can also be conducted with undergraduate students. The facility also assists students in developing skills such as scientific writing and presentation, knowledge of intellectual property rights, ethics, morals and socio-scientific attitude to ensure their overall development.

1. Drosophila Resource Center

The Drosophila Resource Centre was set up in the Department of Biochemistry almost 10 years ago. The centre is funded by DBT Star College Project. It aims to teach the basic principles of genetics using Drosophila as a model system. Almost 250 students have been trained since its inception. Students of different life science streams such as Botany, Biochemistry, Life Sciences and Zoology from DU and Punjab University have been trained at the centre. A lab manual on 'Rediscovering Genetics' has been published in 2016 that covers the range of experiments performed by the students at the centre. The students have been immensely benefited by this training which is reflected in their selection and perusal of higher education in genetics from prestigious places. The centre also provides stocks and support to many colleges of Delhi University and AIIMS.

Insert Dorosophila Lab.jpg

1. Campus Sustainability Center

We are working on various aspects of Campus Sustainability like environment and Health

Environment Sustainability

We are working on environmental sustainability on the DRC campus. We had undertaken a project on Campus footprint and HandPrint on Campus. Under this project we undertook the study on our polluting parameters and our saviors of pollution on campus. To increase the handprint we have set up a recycling unit where the recycling of fallen leaves and paper is undertaken. I have trained two M.Sc students who worked on the Air Pollution Tolerance Index and Anticipated Performance Index of the green campus. At present I have two PhD students enrolled who are working on the biotechnological project of converting organic waste to bio-resource which can be used in organic farming. They will be using biochemical, chemical, microbiological and metagenomic studies for this purpose.

Health Sustainability

We have been working on health sustainability by focusing on issues like Polycystic Ovary Syndrome (PCOS) amongst young women studying on campus. We had undertaken a project on investigating the prevalence of PCOS in undergraduate girls.

MoU

Party 1	Party 2	Purpose	Objective
Dr Sarita Nanda	Harit Agro	To Facilitate Composting of organic waste	To optimize functioning of the recycling Unit
Dr Padamshree Mudgal	Sansriti Foundation	To Facilitate Zebrafish research	To optimize functioning of the Zebrafish Lab

