

NEWSLETTER



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Delhi Technological University

Shahbad Daulatpur, Bawana Road, Delhi-110042



DEPARTMENT OF
BIOTECHNOLOGY

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About the DEPARTMENT

Established in 2004, the Department of Biotechnology has a long tradition of excellence in research and technology-based training. Through its various teaching and research programs, which encompass various basic and applied aspects of modern biotechnology, and a strong focus on interdisciplinary research and collaboration, the department is dedicated to advancing knowledge and fostering innovation through cutting-edge research and comprehensive education.

VISION of the Department

To promote innovation, invention and employability in biotechnology through education and research for the service of humanity

MISSION of the Department

To establish Centers of Excellence in various fields of biotechnology

To create awareness about potentials of biotechnology with socio-ethical implications

To impart quality education for life-long professional growth and career development

To initiate multi-disciplinary programs through academic-industry interface

PROGRAMS OFFERED by the Department

B.Tech. Biotechnology

M.Tech. Bioinformatics

M.Tech. Industrial Biotechnology

M.Sc. Biotechnology

Ph.D.

PROGRAMS COMMENCING in Upcoming Academic Year

Integrated B.Sc.-M.Sc. Biotechnology

M.Tech. by Research



Prof. Prateek Sharma
Vice Chancellor, DTU

Dated: June 30, 2024

Message from

Hon'ble Vice-Chancellor

From its inception, the Department of Biotechnology at Delhi Technological University has been a beacon of excellence in education and research. Our commitment to nurturing a culture of innovation and inquiry has positioned the department at the forefront of groundbreaking advancements in biotechnology. With state-of-the-art laboratories, dedicated faculty, and a focus on interdisciplinary collaboration, we have created an environment where scientific discovery thrives.

This biannual newsletter is a testament to the remarkable achievements of our faculty, students, and researchers. From pioneering research projects to notable publications, the accomplishments highlighted within these pages reflect the hard work and dedication that define our department. The integration of cutting-edge technologies and the implementation of NEP 2020 guidelines further demonstrate our commitment to providing our students with a world-class education that is both relevant and forward-looking.

To our faculty and staff, your unwavering dedication to teaching, research, and mentorship continues to inspire our students and contribute to the department's success. Your efforts in pushing the boundaries of science and technology are not only recognized but deeply valued.

To our students, you are the heart of this institution. The knowledge, skills, and values you have gained here will empower you to face the challenges of the future with confidence and creativity. Your contributions to research, your participation in innovative projects, and your academic achievements make us proud.

As we celebrate the milestones of the past six months, let us also look forward to the exciting opportunities that lie ahead. The Department of Biotechnology at DTU will continue to lead the way in shaping the future of biotechnology, driving progress, and making a meaningful impact on society.

Congratulations to everyone involved in these achievements, and I wish you all continued success in your endeavors.

Prof. Prateek Sharma
Vice Chancellor
Delhi Technological University



Prof. Madhusudan Singh

Registrar, DTU

Message from Registrar

I am glad to know that the Department of Biotechnology, Delhi Technological University is releasing the inaugural issue of the Biannual Newsletter. This publication represents a key milestone, documenting the department's distinguished advancements and significant achievements over the past six months.

In an era of rapid scientific advancement, the Department of Biotechnology continues to lead pioneering research and innovative projects that are shaping the future of biotechnology. The department's unwavering commitment to fostering a culture of creativity, collaboration, and excellence is clearly reflected in the remarkable accomplishments detailed in this publication.

The contributions detailed in this newsletter illustrate the department's commitment to driving forward biotechnology research and education. The Department of Biotechnology at DTU stands as a beacon of innovation and interdisciplinary collaboration. The state-of-the-art laboratories and cutting-edge research conducted here are a testament to the university's broader mission to drive scientific discovery and technological advancement. The remarkable achievements of the Department of Biotechnology are a testament to the dedication of its faculty, students and staff, whose efforts inspire both students and colleagues across the university. The students' passion for learning and innovation is equally commendable, as it prepares them to tackle future challenges with confidence and pride.

As the department continues to push the boundaries of science and technology, it remains poised to maintain its leadership in biotechnology research and education. The university takes great pride in the department's accomplishments and looks forward to the new opportunities and advancements that lie ahead.

Congratulations to everyone who has contributed to these successes. I extend my best wishes for continued excellence in all future endeavors.

Prof. Madhusudan Singh
Registrar
Delhi Technological University

Dated: June 30, 2024



Prof. Yasha Hasija
Head, DBT-DTU

Dated: June 30, 2024

Message from Head of Department

Biotechnology is now the great hope of the world. Just as the industrial revolution and information technology brought about successive paradigm shifts in the way human beings live and interact in the world, the world now looks to biotechnology to bring about the next sweeping wave of change.

The Department of Biotechnology is dedicated to fostering an environment that encourages scientific discovery, interdisciplinary collaboration, and practical applications of biotechnology. At our department, innovation, research, and education come together to shape the future of science and technology. Over the years, we have built a strong foundation in various fields such as bioinformatics, machine learning, artificial intelligence, big data, environment protection, pollution mitigation, water quality management, neuroscience, molecular medicine, functional genomics & proteomics, human diseases, medicinal plant biotechnology, cancer therapeutics, molecular biology, microbiology, bioprocess technology, nanomaterials, and biosensors, etc. Our distinguished faculty members are not only accomplished researchers but also passionate educators committed to mentoring the next generation of biotechnologists.

Our state-of-the-art laboratories and research facilities provide the perfect setting for groundbreaking research and experimentation. We are proud of our collaborations with other academic institutions and research organizations, which offer our students invaluable opportunities for real-world experience and professional growth.

We are also excited to implement NEP 2020 guidelines in our existing programs and introduce several new programs and courses designed to equip our students with the skills and knowledge required to excel in the rapidly evolving biotech landscape. These initiatives are part of our ongoing efforts to ensure that our graduates are not only well-prepared for the current job market but also poised to become leaders in their respective fields.

I extend my gratitude to all the faculty members, staff, and students for their unwavering dedication and hard work.

Prof. Yasha Hasija

HoD, Department of Biotechnology
Delhi Technological University



**Dr. Smita Rastogi
Verma**
(Editor)

Dated: June 30, 2024

From the **Desk of Editor**

I am delighted to bring forth the 'First Issue of Biotechnology Department Newsletter' and share the remarkable progress and achievements our department has accomplished during the past six months.

As we continue to navigate through a rapidly evolving scientific landscape, our department remains at the forefront of groundbreaking research, innovative projects, and significant achievements. Our department is committed to providing an environment that nurtures creativity, collaboration, and excellence. Our esteemed faculty members, students, and alumni continue to push the boundaries of science and technology and our collective efforts have led to numerous accomplishments.

Commencing with the introduction of department, programs offered, faculty biographies, overview of state-of-the-art laboratories, research focus areas, available sophisticated instruments, the newsletter highlights department's recent exciting endeavors, achievements, and opportunities. This biannual newsletter presents the recent successes of our talented faculty members, including cutting-edge research projects, notable publications, and recognitions. Glimpses of exciting diverse initiatives taken by the department on understanding the role of biotechnology in society, entrepreneurship and grant writing, health awareness, gender sensitivity, financial management, and industrial visit between January-June 2024 reveal our unwavering commitment to fostering holistic growth among our students, and empowering them in all the fields. Our students have consistently demonstrated excellence in both academic and extracurricular pursuits, and this newsletter showcases their remarkable accomplishments during this period.

The 'commitment to excellence' of faculty members and students is the cornerstone of our department's success.

Dr. Smita Rastogi Verma

Editor, Newsletter

Assistant Professor, Department of Biotechnology
Delhi Technological University

Faculty Members of the Department



Prof. Yasha Hasija

Professor and Head, DBT-DTU
Associate Dean, Alumni Affairs
Chairperson, Literature and Film Council

Prof. Jai Gopal Sharma

Professor & Ex-Head, DBT-DTU

Prof. Pravir Kumar

Professor & Ex-Head, DBT-DTU
Dean, International Affairs
Former Dean, Alumni Affairs

Dr. Navneeta Bharadvaja

Assistant Professor, DBT-DTU

Dr. Asmita Das

Assistant Professor, DBT-DTU

Dr. Smita Rastogi Verma

Assistant Professor, DBT-DTU

Dr. Kriti Bhandari

Assistant Professor, DBT-DTU

Dr. Prakash Chandra

Assistant Professor, DBT-DTU

The department is proud to have a talented and dedicated team of eight faculty members. The entire team comprising of three Professors and five Assistant Professors, each with unique expertise and research interest, is passionate about teaching, research, and service. Their valuable guidance, support, and inspiration is empowering students to make a meaningful impact. In this section, we are delighted to present their biographies, showcasing their academic achievements, research interests, and contributions to the field of biotechnology.



Prof. Yasha Hasija

Prof. Yasha Hasija (B.Tech., M.Tech., Ph.D.) is presently working as Professor and Head in the Department of Biotechnology. She is also holding the position of Associate Dean, Alumni Affairs at the University. Since her joining DTU in 2010, she is involved in supervising research for B.Tech., M.Tech., M.Sc., and Ph.D. students. Her research primarily explores the areas of genome informatics, the integration of genome-scale data for systems biology, and the application of machine learning in healthcare. She has authored more than 70 research articles and review papers in national and international journals, authored and edited three books with Academic Press, Elsevier, CRC Press, and Taylor and Francis. Prof. Yasha has contributed 15 book chapters, and presented 32 papers at various conferences and have delivered over 20 invited talks at prestigious universities and institutions. Additionally, she is also a member of the Editorial Board for numerous international journals.

She has also completed several sponsored research projects funded by DST, CSIR, and DBT, as Project Investigator. Her scholarly contributions in Biotechnology and Bioinformatics have been recognized through several prestigious awards, including the Department of Science and Technology Award from the Government of India for attending the meeting of Nobel Laureates and Students in Lindau, Germany. In 2010, she was honored with the Human Gene Nomenclature Award at the Human Genome Meeting in Montpellier, France. She has also been the recipient of DTU Research Excellence Award for five consecutive years.



Prof. Jai Gopal Sharma

Prof. Jai Gopal Sharma (M.Sc., Ph.D.) is currently working as Professor in the Department of Biotechnology. He has also served as Head, DBT-DTU from 2018-2020. Prof. Sharma completed his Ph.D. from University of Delhi (India), and PDF from Kyoto University (Japan). His research interests include water quality management, water chemistry, industrial and environmental biotechnology, aquatic ecology, aquaculture, fish nutrition, radiation biology, biosensor, bioremediation, biofuel & bioenergy, microbiology, nanobiotechnology, environmental impact assessment, and medicinal chemistry of plants. Prof. Sharma has completed several Govt. funded research projects with significant outcomes and currently running three projects funded by DBT and DST, Govt. of India. He has ~150 publications in journals of repute to his credit. He has made scientific visits to many countries, including USA, UK, China, Spain, Japan, South Africa, Australia, Israel, Denmark, Singapore, France, Tanzania, Nepal, Belgium, Malaysia,

Sri Lanka, and Norway. He is recipient of many awards including 'Education Excellence Award 2021' by Dr. Swarn Chawla Memorial Foundation, Delhi during the World Environment Summit 2021 organized by ESDA, 'National Innovative Education Award 2021' by Socrates Social Research University Trust, Constitution Club of India, New Delhi, 'National Green Award-2019' by Environment and Social Development Association for his outstanding contribution in the field of Environmental Biotechnology, and DTU Research Excellence Award.



Prof. Pravir Kumar

Prof. Pravir Kumar (M.Sc., Ph.D.) is presently working as Professor in the Department of Biotechnology and Dean International Affairs, DTU. He has also served as Head, DBT-DTU and Dean Alumni Affairs. Before joining DTU, Prof. Kumar has served as Associate Professor (Biosciences) and Assistant Director (Center) at VIT University, Vellore. He has obtained MS degree from BHU, Varanasi with Molecular and Clinical Genetics specialization, and Ph.D. degree from J.W. Goethe University, Germany in the field of coronary artery diseases and cardiovascular physiology. Before returning to India, he has spent several years in the Neurology Department at Tufts University School of Medicine, Boston, USA as a postdoctoral fellow and later at faculty position. He was holding an Adjunct Faculty status in the Neurology Department at Tufts University School of Medicine (TUSM) for several years. Prof. Kumar has more than 20 years of research experience. His areas of research interest and expertise include molecular

chaperone and ubiquitin E3 ligase in neurodegenerative disorders along with the aberrant cell cycle re-entry into aged neurons and muscles. He has more than 140 publications in high impact factor journals and several book chapters to his credit. He is also Editorial Board member of numerous international journals including Ageing Research Reviews and Scientific Reports. Prof. Kumar has delivered over 60 invited talks at various prestigious organizations. He has successfully completed three Govt. of India funded research projects, and is actively involved in supervising research for UG, PG, and Ph.D. students. For his contribution in research, each year in-house DTU Research Excellence Award is conferred upon him. He has served as national expert members in ICMR, DRDO, Fulbright fellowships, and did many confidential works of Government of India.



Dr. Navneeta Bharadvaja

Dr. Navneeta Bharadvaja (M.Sc., Ph.D.) is currently working as Assistant Professor in the Department of Biotechnology at Delhi Technological University. She has been actively engaged in research and teaching activity for the last 16 years. She is the course coordinator of B.Tech. (Biotechnology) and M.Tech. (IBT). She specializes in plant and algal biotechnology with research focus on plant tissue and algal culture-based production of industrial metabolites. She is also involved in research in phyto- and phyco-remediation of heavy metals. Dr. Navneeta has guided 5 Ph.D. students and more than 100 B.Tech./M.Tech./M.Sc. students for their respective dissertations. She has published more than 100 peer-reviewed scientific articles in the fields of medicinal and aromatic plants, algal biotechnology, bioremediation, and biofuels. Her h-index is 29 with 2933 citations. Dr. Navneeta has edited three books on medicinal and aromatic plants, biogenic

nanomaterials and algal biotechnology. She is the recipient of DTU Research Excellence Award four times. She has attended several conferences and workshops and has delivered invited lectures in the area of her research. Additionally, she works tirelessly for the welfare of students; she is the faculty coordinator of the official society of the Biotechnology Department, BioSoc-DTU. She is also the departmental coordinator of the Institute Innovation Council at DTU, where she helps and encourages students for building their start-ups. She is also a member of the anti-ragging squad.



Dr. Asmita Das

Dr. Asmita Das (M.Sc., Ph.D.) has been working as Assistant Professor in the Department of Biotechnology at Delhi Technological University since 2010. Dr. Asmita, following her Ph.D. in Immunology from JNU, acquired 5 years of postdoctoral research experience in the Laboratory of Immunogenetics (Dr. Eric O. Long) in National Institute of Allergy and Infectious Diseases (NIAID) at National Institutes of Health (NIH), USA. She has been engaged in extensive research in NK cell development, NK receptor modulation and signalling in response to tumor cells. Her Ph.D. research in School of Life Sciences, JNU with Prof. Rajiv Saxena contributed towards the coining of the term of 'Licensing of NK cells' during NK development, which is now a part of all textbooks. Her extensive research has generated more than 65 research publications including high impact journals like *Immunity* (43.47), *Autophagy* (16.02), *Life Sciences* (6.78), *Journal of Immunology* (5.7) and many more. Her research focus is on cellular immunology, combinatorial immunotherapy for cancer and immune-

informatics. Apart from her core area of research, she is also engaged in multi-institution interdisciplinary research with IIT Delhi in the field of Computational Fluid Dynamics in Immune Complex Diagnostics, with AIIMS in tumor microenvironment studies and with JNU on nanoparticle mediated drug delivery system development. While at DTU, she has successfully completed 3 sponsored research projects and has also single-handedly designed the curriculum for M.Sc. Biotechnology. She has guided 7 Ph.D. students (degrees awarded) and presently supervising 3 Ph.D. students and has also guided more than 60 postgraduate students. She is also the recipient of DTU Research Excellence Award.



Dr. Smita Rastogi Verma

Dr. Smita Rastogi Verma (M.Sc., M.Tech., Ph.D.) has been working as Assistant Professor in the Department of Biotechnology at Delhi Technological University since 2011. Before joining DTU, she served the Department of Biotechnology, Integral University, Lucknow for more than six years, where she held several academic and administrative positions. Dr. Rastogi has 20 years of teaching and research experience. She specializes in molecular biology, plant biotechnology, and industrially-relevant microbial isolation. During her Ph.D. at University of Lucknow, she made significant contribution in the field of raising lignin down-regulated transgenic *Leucaena* plants with applicability in bioenergy and paper industries. She was awarded Smt. Guru Devi Gold Medal for being the best woman candidate to get the Doctorate Degree in the Faculty of Science. After her Ph.D., Dr. Rastogi joined as Research Associate in a DBT funded project on EST development at IISR, Lucknow. Prior to Ph.D., she completed M.Tech. (Biotechnology) from Institute of

Engineering & Technology, Lucknow with I rank. As a part of M.Tech. degree, she completed her project at Fermentation Technology Division, CDRI, Lucknow. She was the recipient of Prof. P.S. Krishnan Gold Medal for holding I position in M.Sc. (Biochemistry) from Lucknow University. Dr. Smita has authored a text-book on 'Genetic Engineering' published by Oxford University Press. She has supervised 6 Ph.D. students and ~40 postgraduate and undergraduate students for their projects. She has also handled a research project on 'Lignin-degrading microbes' funded by UP Council of Science & Technology. Dr. Rastogi has ~50 publications in reputed journals and conference proceedings to her credit. She has also contributed several chapters in nationally and internationally published books. She has qualified several national-level competitive exams, including UGC-CSIR NET, UGC-CSIR JRF, CSIR-Direct, and GATE. She has also been the recipient of DTU Research Excellence Award in recognition for her research.



Dr. Kriti Bhandari

Dr. Kriti Bhandari (M.Sc., Ph.D.) has been working as Assistant Professor in the Department of Biotechnology at Delhi Technological University since 2014. She completed her Ph.D. in Biochemical Engineering from Malaviya National Institute of Technology, Jaipur. Her research areas of interest include biochemical engineering and enzymology. She has 17 publications in international and national journals, and 19 papers in international/national conferences. She has also authored a chapter in book published by Springer. She is a member of Indian Institute of Chemical Engineers. She has qualified CSIR-JRF NET and GATE with 98 percentile in 2007. She was awarded with Canadian Commonwealth Graduate Exchange Program fellowship to carry out research work at University of Saskatchewan, Canada for 6 months (March-September 2010). She secured first rank in JEE-2004 (Joint Entrance Exam) of M.Sc. Biotechnology/ Microbiology from University of Rajasthan. She has

participated in 25 Faculty Development Programs/Short-term training/Workshops. At DBT-DTU, she has guided several undergraduate and postgraduate students, and is supervising one Ph.D. student. She has also bagged DTU Research Excellence Award.



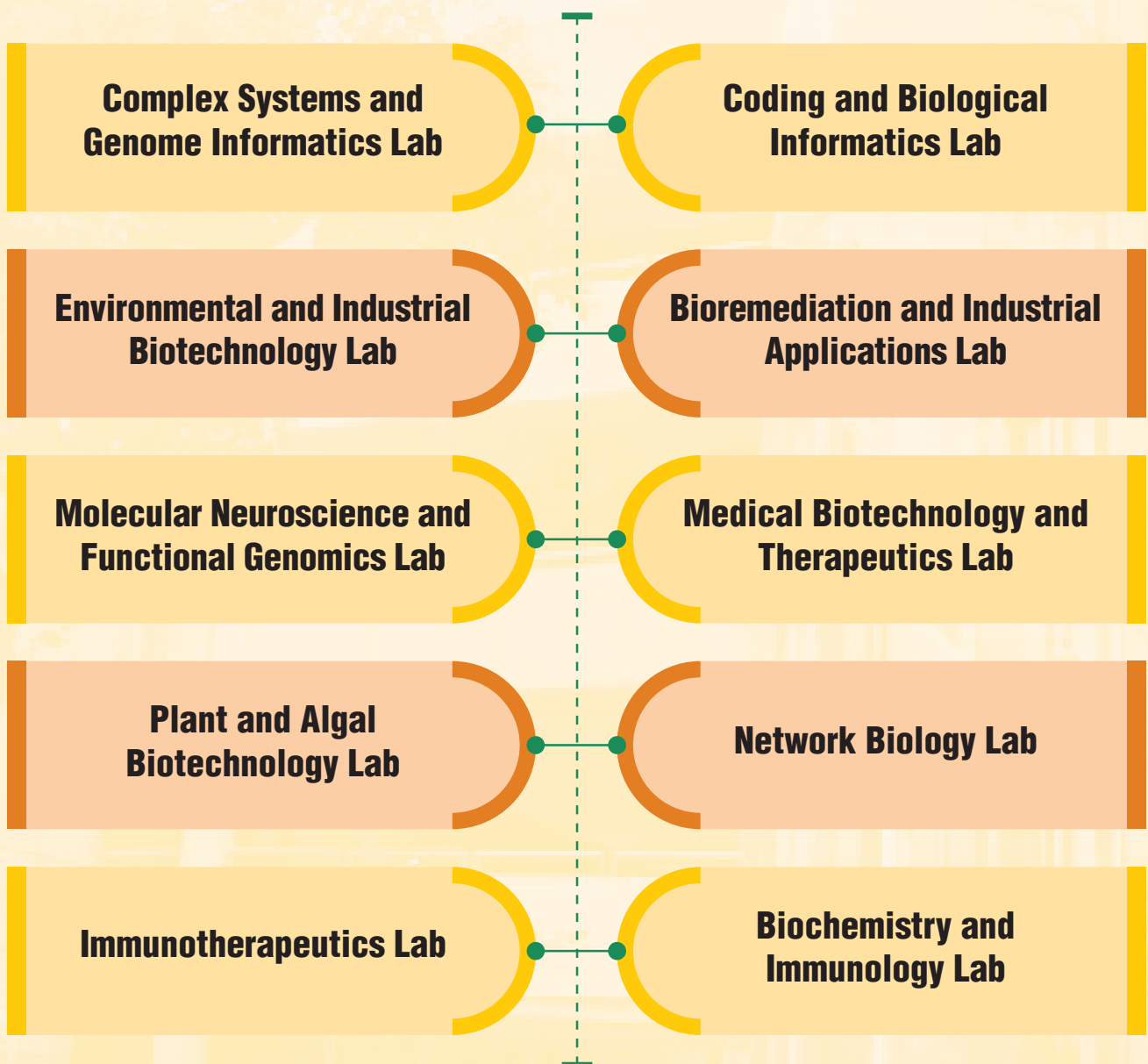
Dr. Prakash Chandra

Dr. Prakash Chandra (M.Sc., Ph.D.) has been working as Assistant Professor in the Department of Biotechnology at Delhi Technological University since 2014. He completed his Ph.D. in Biomimetic Nanoscience from Kongju National University, South Korea. During his Ph.D., he worked in interdisciplinary areas such as microfabrication, toxicology, tissue engineering, and nanotechnology. He is involved in several projects that include developing microfluidic devices, skin on a chip, and biochips for toxicological tests. He did his Masters from Jamia Hamdard, New Delhi and later worked at the Institute of Nuclear Medicine & Allied Sciences (DRDO), New Delhi. He also has industrial experience from Torrent Pharmaceuticals, Gujarat. He has more than 9 years of teaching and research experience. Dr. Chandra has published several research articles in reputed journals and chapters in books published by premier publication houses. He has guided several undergraduate, postgraduate, and two

Ph.D. students. His current research interests are in the fields of nanobiotechnology, tissue engineering, biosensors, biomicrofluidics, and toxicology. He is also the recipient of DTU Research Excellence Award.

State-of-the-Art Laboratories

At the heart of our department's research endeavors are our ten exceptionally-equipped teaching and research laboratories, where undergraduate and postgraduate students perform their experiments and research scholars are engaged in high-tech research. Let's have highlights of research focus areas, sponsored projects, sophisticated instruments available in various laboratories !! Browse through our laboratory photographs and research summary figures to get a glimpse of the cutting-edge equipments and innovative research that drive our department's pursuit of excellence. With delight, we present the names of Ph.D. scholars who have successfully completed their Ph.D. under the supervision of our esteemed faculty members. These labs have witnessed the award of Ph.D. degrees to ~40 students, and ~40 research scholars are pursuing their Ph.D.



Complex Systems and Genome Informatics Lab

Coding and Biological Informatics Lab

Network Biology Lab

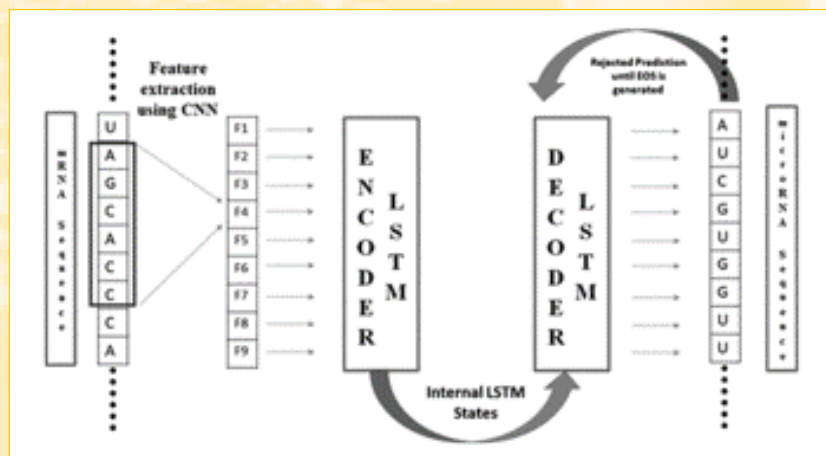


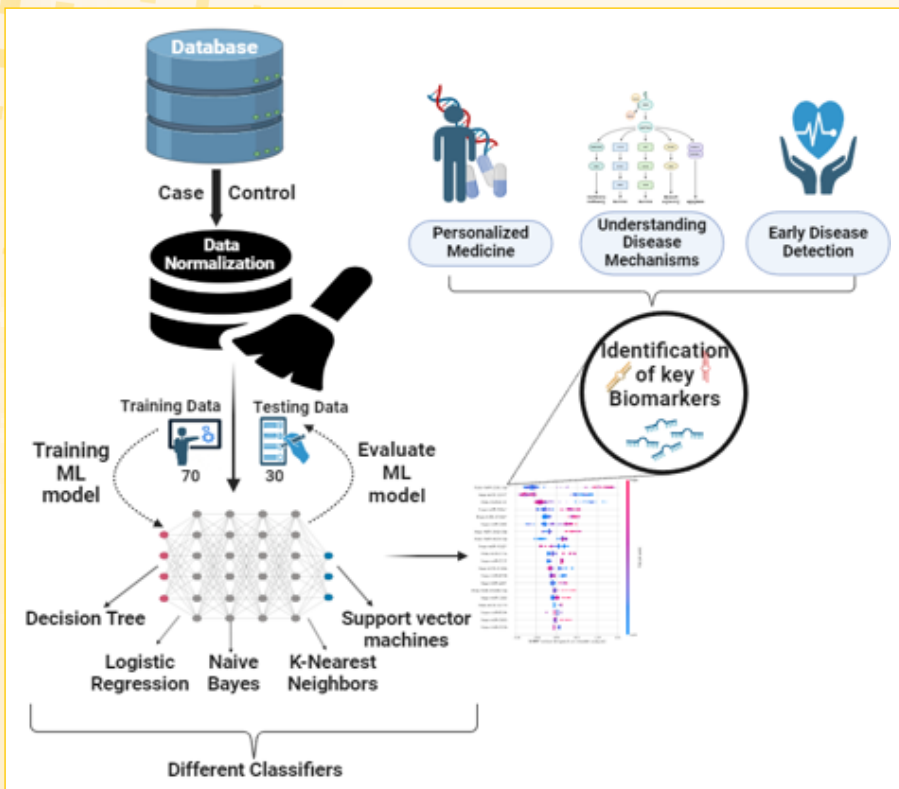
Principal Investigator:
Prof. Yasha Hasija



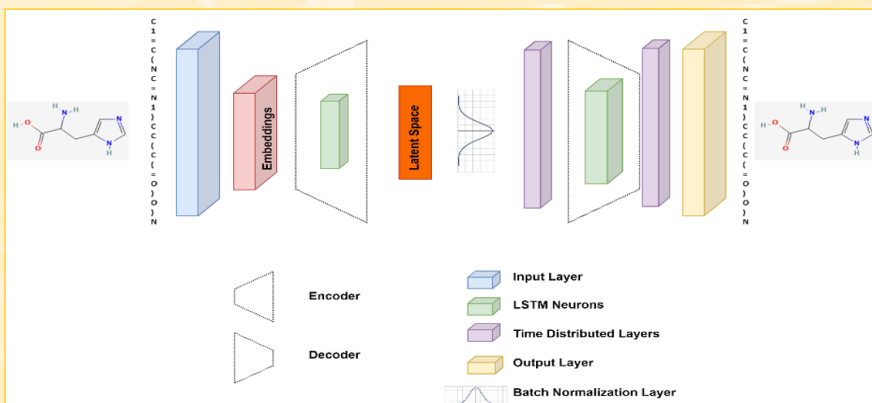
Research Focus

- *In silico* prediction of microRNA using CNN and LSTM
- AI/ML based biomarker discovery and precision medicine

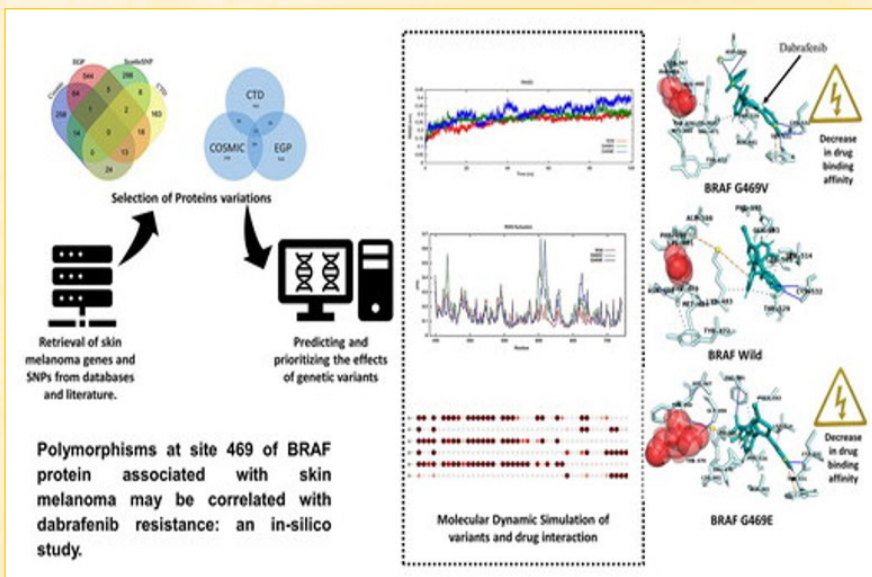




- Utilizing deep learning for drug lead optimization



- Drug design through molecular docking and simulation, coupled with *in silico* analysis of polymorphisms



Research Projects (Completed)

- Genetic analysis of dermatological disorders (2017-2020; DBT, Govt. of India)
- Tuberculosis: Genetic susceptibility and pharmacogenomics databases (2012-2015; CSIR-OSDD)
- Role of human genetic variations in age-related disorders (2012-2015; SERB under OYS Scheme)

Sophisticated Instruments

- Dell Precision 5820 Tower Workstations; All-in-one Desktop; Canon Printer/ Photocopier; HP Laser Jet Color Printer

Environmental and Industrial Biotechnology Lab

Bioremediation and Industrial Applications Lab

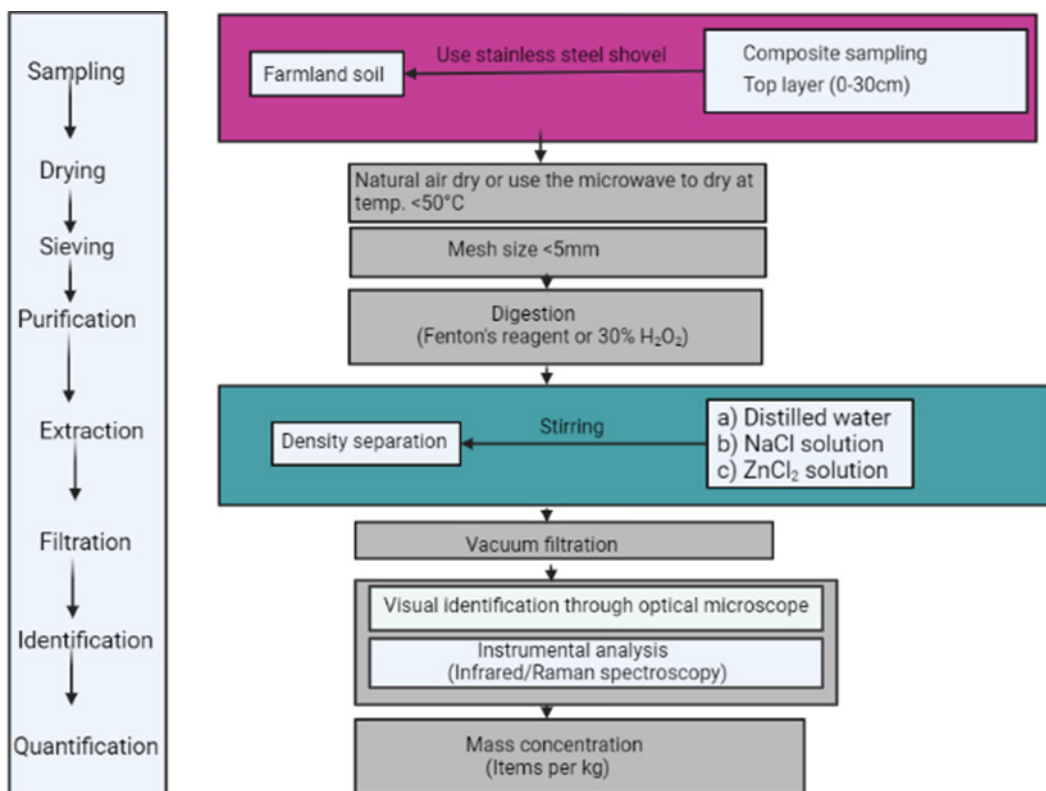
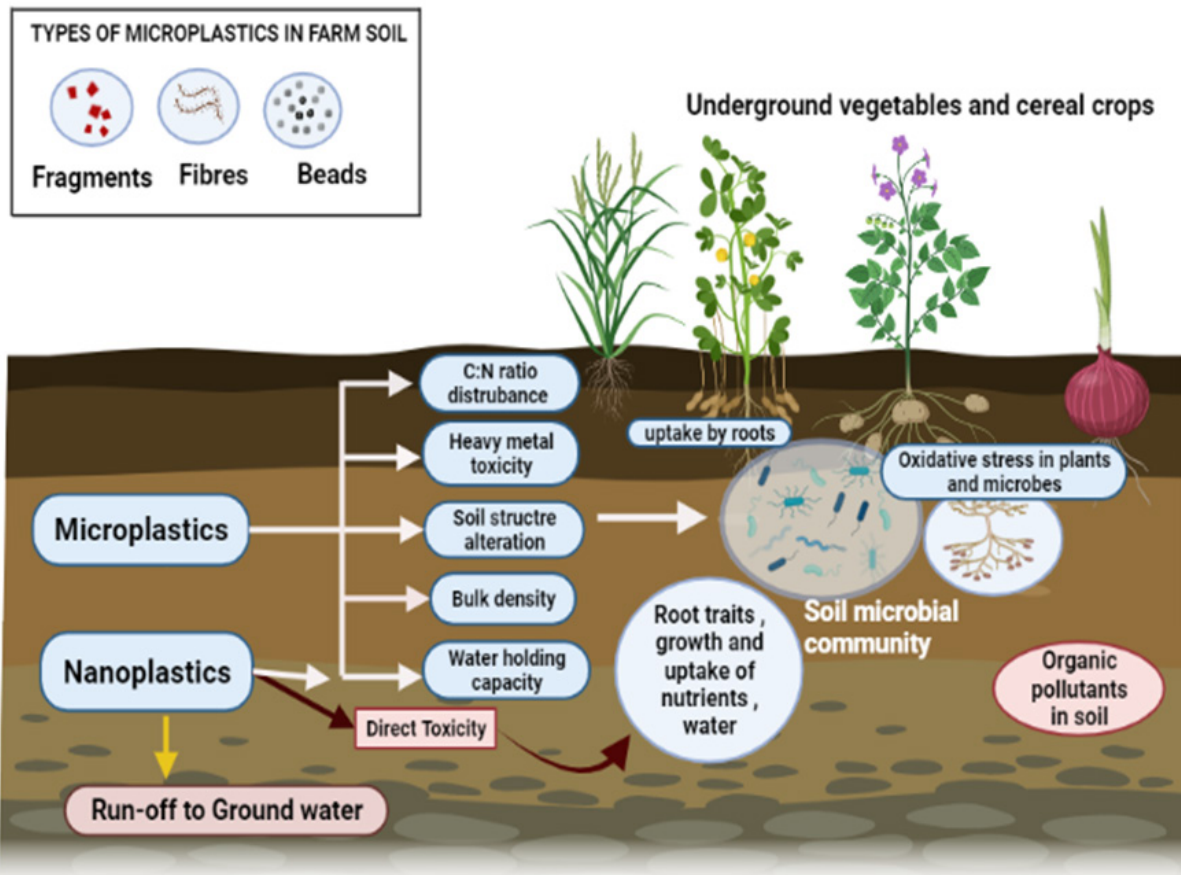


Principal Investigator:
Prof. Jai Gopal Sharma



Research Focus

- Effects of microplastics on plant growth and soil properties
- Sampling, extraction, and analysis procedures for microplastics in soil



- Industrial and environmental biotechnology
- Bioremediation
- Medicinal chemistry of plants
- Amino acids profile of medicinal plants
- Water quality management, water chemistry
- Aquatic ecology, aquaculture, fish nutrition
- Radiation biology
- Biosensor
- Bioenergy & Biofuel
- Microbiology
- Nanobiotechnology
- Environmental impact assessment

Research Projects (Ongoing)

- Investigations on micro-nano plastics (MNPs) fingerprinting in cruciferous truck crops with special reference to *Brassica oleracea* spp. (2023-2025; DBT, Govt. of India; DTU & Department of Botany MLSU Udaipur Rajasthan)
- Evaluation of effect of macrophytes based on the growth, gut physiology, expression of specific genes involved in the biosynthesis of DHA & EPA and production of quality freshwater fishes (2021-2024; DBT, Govt. of India)
- Integrated farming of *Lates calcarifer* and *Macrobrachium rosenbergii* in aquaponic system: a sustainable water utilization approach (2020-2024; DST, Govt. of India)

Research Projects (Completed)

- Dissemination and demonstration of fish culture technology among women self help groups in NCR region of Delhi as a self-employment activity (2018-2021; DBT)
- Development of pelleted diet for *Catla catla* and *Clarias batrachus* using *Achyranthes aspera* and evaluation of its immunostimulatory properties in pond culture system (2015-2019; DBT)
- Toxicity assessment and treatment of pharmaceutical waste water by novel nano catalyst based advanced oxidation method (2017-2019; SERB, DST)
- Development of alternative sustainable fish feeds to promote human health using novel non-conventional indigenous ingredients (2016-2019; Multicounty Project- BBSRC, UK, and DBT)
- Simultaneous degradation of organochlorine pesticides by microbes (2013-2018; UGC)
- Engineering of actin filament for the development of next generation diagnostic nanodevices (2013-2016; SERB DST)
- Nanoenabled biosensor for detection of *Neisseria gonorrhoeae* (in collaboration with AIIMS; 2017-2019; DBT)

Sophisticated Instruments

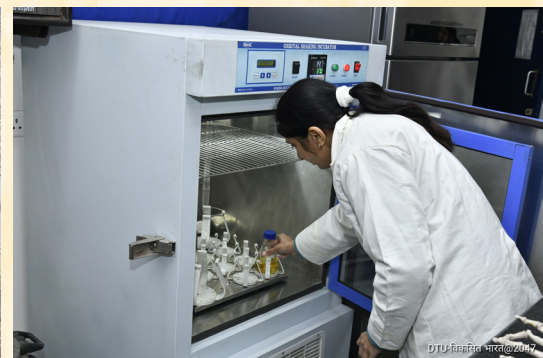
- Ultra-High Performance Liquid Chromatography; Kjeltac 8400; UV-Vis Spectrophotometer; Refrigerated Centrifuge; Laminar Air Flow; Lyophilizer; Hybridization Chamber; Electrophoresis Unit; Hach's Water Quality Multi-parameter with Various Electrodes; Screen Printer; Vacuum Evaporator; -80°C Deep Freezer; Surface Plasmon Resonance; UV-VIS-NIR Spectrophotometer; Microfluidic Pump; Colorimeter; Conductivity Meter; Digital Multimeter; Digital Micro-voltmeter; Electrochemical Analyzer; Projector

Molecular Neuroscience and Functional Genomics Lab

Medical Biotechnology and Therapeutics Lab

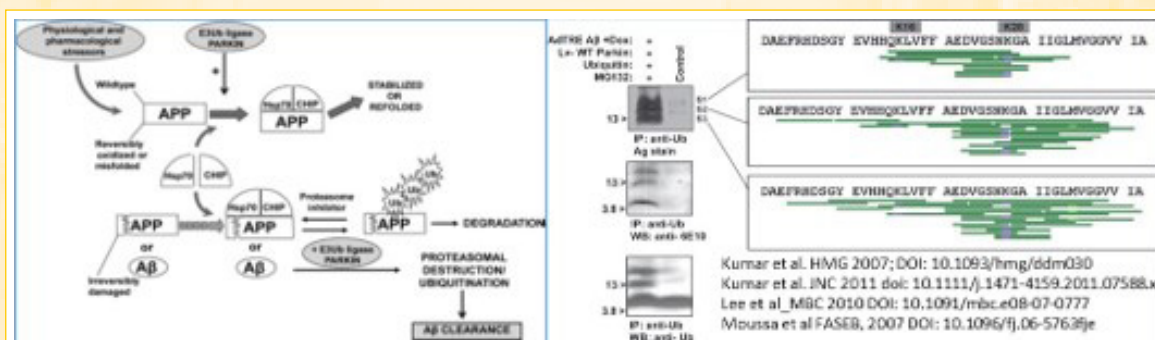


**Principal Investigator:
Prof. Pravir Kumar**

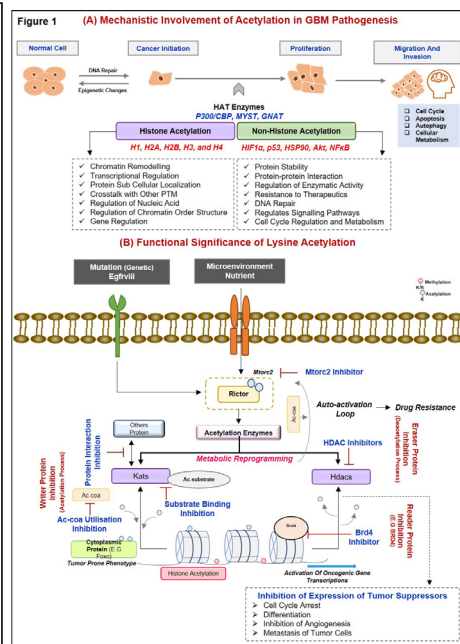
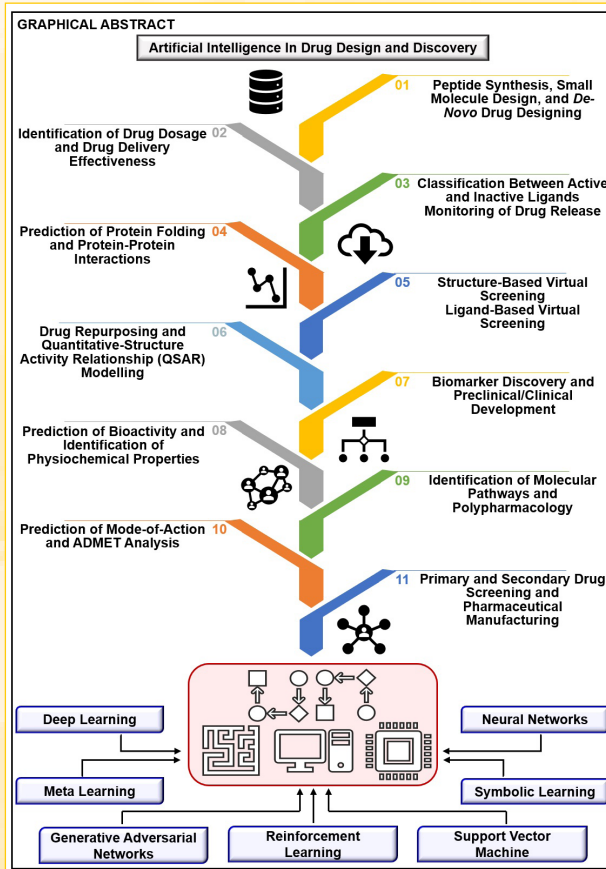


Research Focus

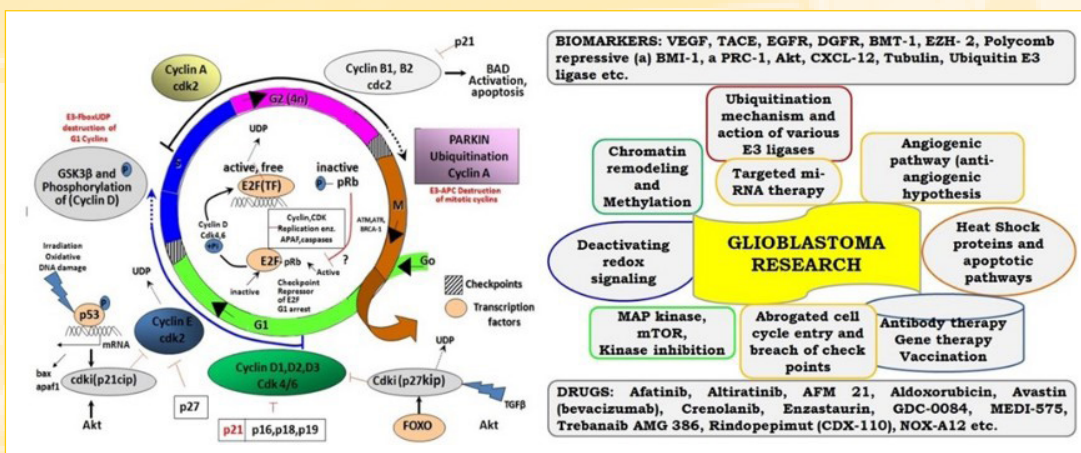
- Post translational modification in neurodegenerative disorders
- Ubiquitin E3 ligase mediated clearance of toxic metabolites and UPS assisted therapeutics
- Molecular chaperone assisted therapeutics



- Cross talk through repurposed drugs in neurodegenerative disorders and cancer
- AI/ML based drug discovery in neurodegenerative disorders and brain tumor
- Post mitotic cell division and aberrant cell cycle entry in aged neurons and muscles
- Drug repurposing approach and lead molecule identification



- Kumar et al., 2020 10.1016/j.arr.2020.101078
- Gupta et al, 2023 Sep;90:102013. doi: 10.1016/j.arr.2023.102013
- Gupta et al, 2023 Comput Biol Med. 2023 Aug; 162:107051. doi: 10.1016/j.combiomed.2023.107051.
- Kumari et al., Biochim Biophys Acta Rev Cancer. 2023 Nov;1878(6):188999. doi: 10.1016/j.bbcan.2023.188999



Research Projects (Completed)

- Functional role of heat shock proteins and ubiquitin E3 ligase under hypoxic stress condition (2009-2012; LSRB-DRDO)
- Identification and characterization of anti-cancerous and anti-angiogenic biomolecules for colon cancer (2013-2016; DST-SERB)
- Screening and investigation of biomolecules for therapy of diabetes via cell culture method (2016-2019; CSIR-Scientific Pool Scheme)

Sophisticated Instruments

- Thermocycler; Inverted Microscope; Inverted Microscope; -20°C Refrigerator; Gel Documentation System; Western Blot Apparatus; Electrophoresis Unit; Microtome; CO₂ Incubator; Workstation; Projector

Plant and Algal Biotechnology Lab



Principal Investigator:
Dr. Navneeta Bharadvaja



Research Focus

- Selection of elite accessions for industrially important secondary metabolites
- Optimization for in vitro production of high-value low volume phytochemicals through tissue culture
- Plant tissue and algal culture-based approaches for the production of industrial and medicinal metabolites
- Production of nanoparticles and study of their medicinal and industrial applications
- In silico analysis of phytochemicals for potential drug discovery against various diseases
- Phyto and phycoremediation of dyes and heavy metals
- Optimization of biomass production of microalgae for biofuels



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Figure 3.1: Shoot culture of *Plumbago zeylanica* accessions grown in MS medium with ammonium nitrate and 3% sucrose

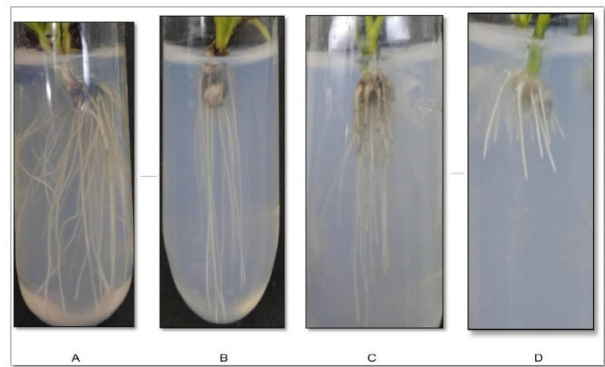


Figure 4.3: Root multiplication of *P. zeylanica* in different media A) MS+1 mg/L IBA B) Nitsch+1 mg/L IBA C) B5+1 mg/L IBA, D) Schenk & Hildebrandt+1 mg/L IBA

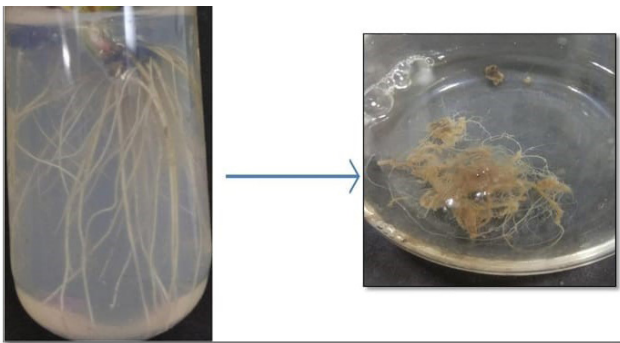


Figure 4.4: Establishment of root suspension culture of *P. zeylanica*

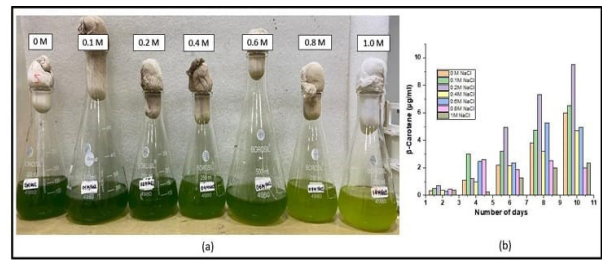


Figure 5.8 (a) The effect of salt stress on culture, with 0M as control and subsequent increase in NaCl molarity with 0.1M, 0.2M, 0.4M, 0.6M, 0.8M and 1.0M (b) The effect of salt stress on β -carotene accumulation

Sophisticated Instruments

- Temperature and Light Controlled Tissue Culture Room; Thermocycler; Gel Documentation System; UV Transilluminator; UV-Vis Spectrophotometer; Incubated Shaker; Laminar Air Flow; Autoclave; Electrophoresis Unit; Sonicator; Centrifuge; Mini-centrifuge; Double Distillation Unit; Hot Air Oven; Projector



Immunotherapeutics Lab

Biochemistry and Immunology Lab



Principal Investigator:
Dr. Asmita Das



DTU-Research@2047



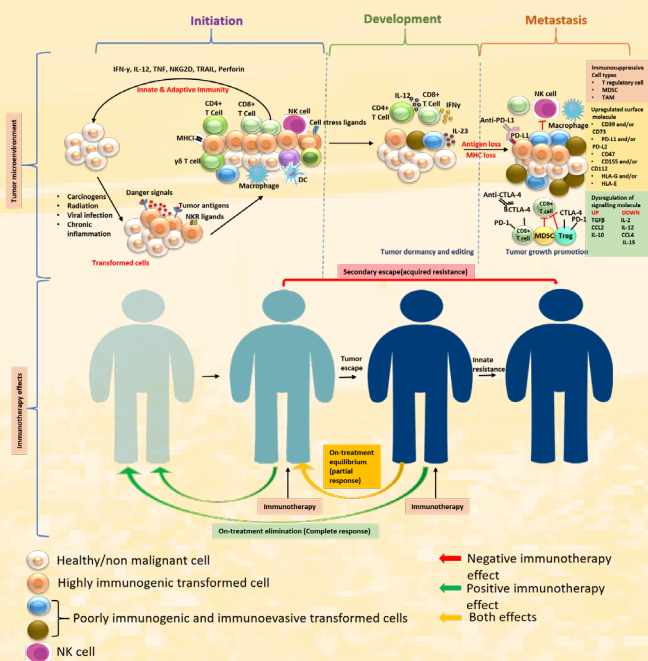
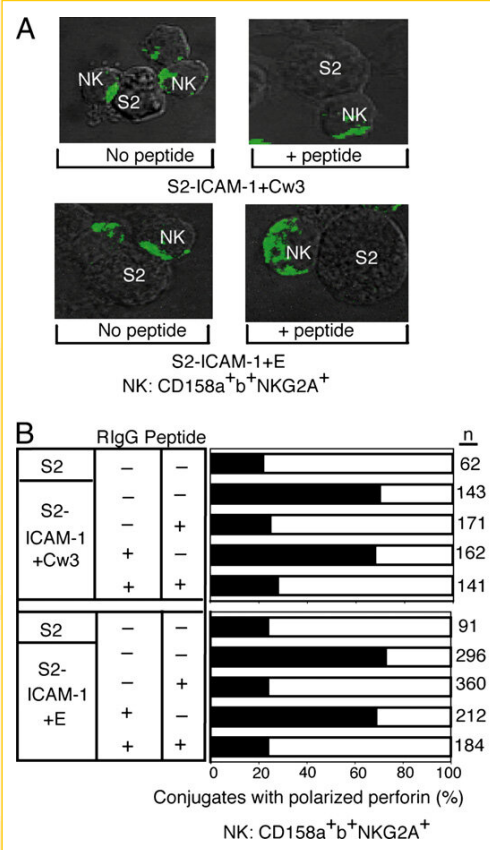
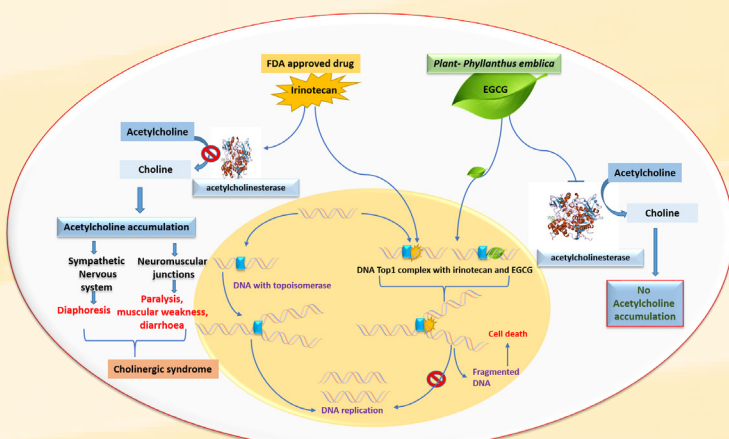
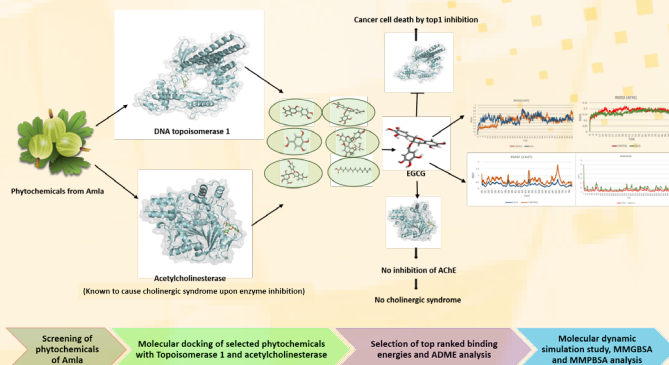
DTU-Research@2047



DTU-Research@2047

Research Focus

- Cellular immunology and therapeutics
- Modulation of tumor cells for immune evasion
- Development of combinatorial immune therapeutics for cancer
- Prediction of immunodiagnostic markers and plant derived natural compounds for cancer therapy
- Drug design and development of natural compounds as combinatorial treatment for cancer and autoimmune diseases



Sophisticated Instruments

- Flow Cytometer; CO₂ Incubator; -20°C Refrigerator; Laminar Air Flow; Liquid Nitrogen Storage Container; UV-Visible Spectrophotometer; Ice Flaking Machine; Centrifuge; Thermostated Water-bath; Projector

Research Projects (Completed)

- Tumor cell induced NK cell receptor modulation (DST; 2013-2016; Fast Track Scheme for Young Scientist)
- Preparation of tumor targeting monoclonal antibody and crocin nanoparticle conjugate for drug delivery system (2019-2021; DTU)
- Studies on elucidating silver nanoparticle as potent inhibitor of hyphal morphogenesis and drug resistance in opportunistic fungal pathogen, *Candida* and potential host cell toxicity (2014-2019; JNU-UPE)

More Research Areas of Department

Nanomedicine for cancer therapeutics

Anticancerous nanocarriers

Nanomaterials

Scaffold for tissue engineering

Biosensors

Nanotoxicology

Isolation of microbes for industrially important enzymes

Enzymology

Biochemical engineering

LABORATORY TECHNICAL STAFF MEMBERS

Laboratory technical staff members assist faculty members in the smooth conduction of labs -

- Mr. Chhail Bihari
- Mr. Jitendra Singh
- Mr. Lalit Kumar
- Ms. Saumya Maurice



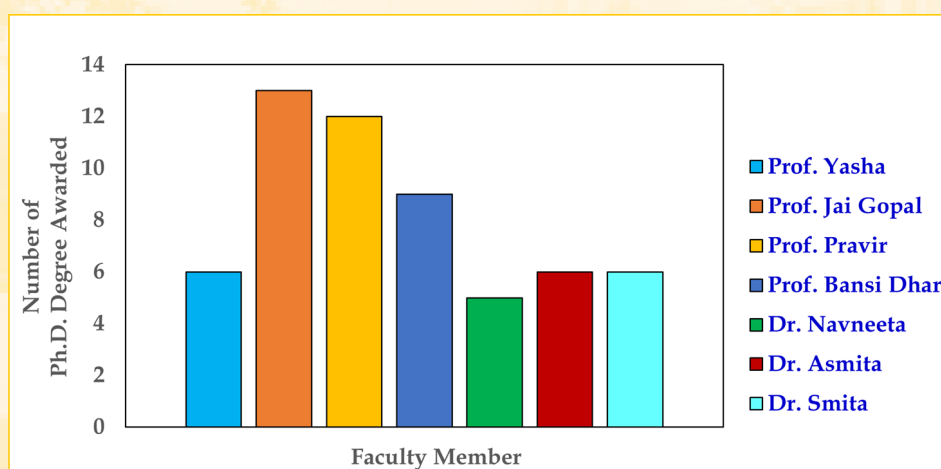
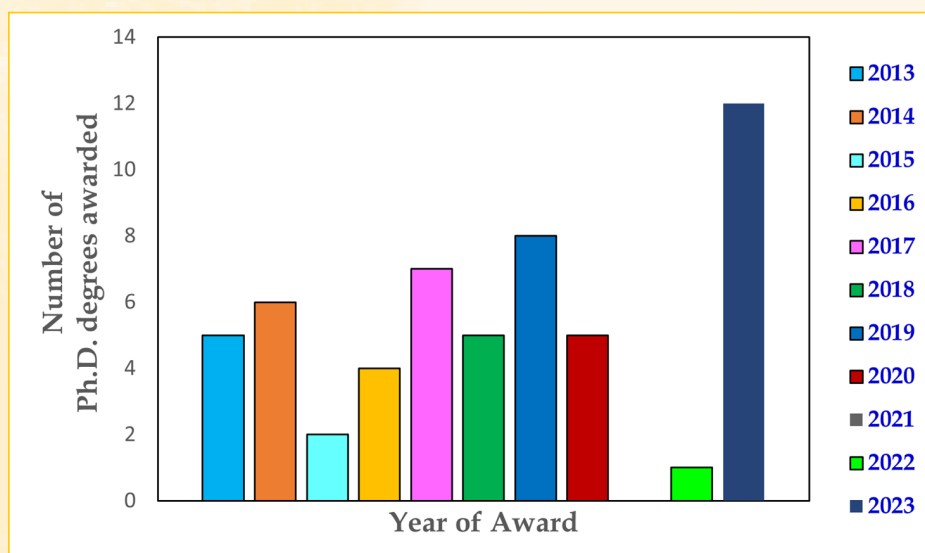
Ph.D. AWARDED

Student	Supervisor	Thesis Title	Year of Award
Jaishree Meena	Prof. Yasha Hasija	Study of dysregulated genes during squamous cell carcinoma for identification of potential biomarkers and therapeutics	2023
Rajkumar Chakraborty	Prof. Yasha Hasija	Genomic language processing using machine learning	2023
Richa Virmani	Prof. Yasha Hasija	Post translational modification mediated regulation of <i>Bacillus anthracis</i> and <i>Mycobacterium tuberculosis</i> metabolism	2019
Tanwee Das De	Prof. Yasha Hasija	Molecular analysis of neuro-olfactory system of Indian malarial vector <i>Anopheles culicifacies</i>	2018
Isha Srivastava	Prof. Yasha Hasija	Evaluation of some alpha ketoglutarate (AKG) formulations as cellular and tissue repair agents	2017
Lalita Mehra	Prof. Yasha Hasija	Computational analysis of age-related disorders: a genetic perspective	2017
Navneet Chaudhary	Prof. Jai Gopal Sharma	Nano-material-based biosensors for the detection of antibiotics	2023
Parul Puri	Prof. Jai Gopal Sharma	Evaluation of storage conditions on the amino acids, fatty acids, vitamins and elemental profiles of aquafeed	2023
Neha Tiwari	Prof. Jai Gopal Sharma	Microbial degradation of HDPE and nylon 6,6 microplastics: A potential bioremediation strategy for cleaner ecosystems	2023
Avanish Kumar Srivastav	Prof. Jai Gopal Sharma	Mass production of aquatic macrophyte <i>Spirodela polyrhiza</i> , its amino acid and fatty acid profiles study and its use in carps' feed formulation	2023
Anchita Kalsi	Prof. Jai Gopal Sharma	Bioremediation of RDX and HMX contaminated soil and sediments using <i>Janibacter cremeus</i> immobilized in calcite and egg shell based bio-formulations	2020
Vivek Chopra	Prof. Jai Gopal Sharma	Algal biodiversity-based reconstruction of the past local and regional environmental conditions of river Yamuna in Delhi region	2020
Abhishek Saini	Prof. Jai Gopal Sharma	Studying the effect of growth factors on expansion and erythropoietic differentiation of hematopoietic stem cells	2019
Satish Kumar	Prof. Jai Gopal Sharma	Detoxification of residual toxins in <i>Jatropha</i> press cake for its application in animal feed development	2018
Shilpi (TRF)	Prof. Jai Gopal Sharma	Development of microbial consortium for bioremediation of synthetic pesticides contaminated soil and water	2018

Vineet Kumar Goswami	Prof. Jai Gopal Sharma	Bioprocess optimization for production, downstream processing, purification and characterization of an alkaline lipase from <i>Pseudomonas aeruginosa</i> and its novel industrial applications for future green enzyme technology	2017
Saurabh Kumar	Prof. B.D. Malhotra/ Prof. Jai Gopal Sharma	Development of nanomaterial - based biosensors for oral cancer detection	2016
Suveen Kumar	Prof. B.D. Malhotra/ Prof. S. Maji/ Prof. Jai Gopal Sharma	Nanomaterials modified paper-based biosensors for cancer detection	2016
Dr. Nawaj Alam Khan	Prof. Jai Gopal Sharma	Physiological responses of Indian major carps <i>Catla catla</i> and <i>Labeo rohita</i> to different light intensities and role of dietary supplementation of vitamin C, vitamin E and tryptophan in stress amelioration	2019 (Non-DTU)
Sudhanshu Sharma	Prof. Pravir Kumar	Collaborative action of molecular chaperones, ubiquitin E3 ligases and signaling molecules in the reversal of glioblastoma and other brain tumors	2023
Smita Kumari	Prof. Pravir Kumar	Modulating tumor microenvironment using combinatorial therapy	2023
Rohan Gupta	Prof. Pravir Kumar	Acetylation mechanism and HDAC's enzymes in neurodegenerative diseases	2023
Dia Advani	Prof. Pravir Kumar	Intrinsic mechanism of anti-cancer drugs in neurodegenerative disorders	2023
Dhiraj	Prof. Pravir Kumar	Characterization, investigation and clearance mechanism of neurotoxic proteins in AD and PD	2019
Pooja Srivastava	Prof. Pravir Kumar	Design, synthesis and characterization of novel heterocyclic ligands for biomedical imaging	2019
Saurabh Kumar Jha	Prof. Pravir Kumar	Therapeutic action and signaling mechanism of biomolecules in neurodegenerative disorders	2017
Niraj Kumar Jha	Prof. Pravir Kumar	Organs damage under hypoxic stress condition and their therapeutics approaches	2017
Renu Sharma	Prof. Pravir Kumar	Cyclin, HSPs and E3 ligase activity in cell cycle deregulation and neuro-muscular degeneration	2017
Kushi Anand	Prof. Pravir Kumar	Characterization and screening of biomolecules for cancer therapy	2013 (Non-DTU)
Sonia Angeline	Prof. Pravir Kumar	Rotenone induced Parkinson's disease model and differential expression of molecular chaperones	2013 (Non-DTU)
Aditi Sarkar	Prof. Pravir Kumar	Neuroprotective effect of bio molecules (naringenin and quercetin) under hypoxic stress conditions	2013 (Non-DTU)
Shine Augustine	Prof. B.D. Malhotra	Development of nanomaterials based biosensors for breast cancer detection	2020

Ruchika Chauhan	Prof. B.D. Malhotra	Study on development of piezoelectric immunosensor for aflatoxin B1 detection based on nanostructured thin films	2016 (Non-DTU)
Aditya Sharma	Prof. B.D. Malhotra	Quantum dots based biosensors for cancer detection	2015 (Non-DTU)
Saurabh Srivastava	Prof. B.D. Malhotra	Carbon nanomaterials for food toxin detection	2014 (Non-DTU)
Md. Azahar Ali	Prof. B.D. Malhotra	Nanostructured metal oxide based microfluidic biosensors for point-of-care diagnostics	2014 (Non-DTU)
Manoj Patel	Prof. B.D. Malhotra	Nucleic acid biosensors for the detection of pathogen	2014 (Non-DTU)
Renu Singh	Prof. B.D. Malhotra	Studies of polymer based DNA biosensors for <i>Neisseria gonorrhoeae</i> detection	2013 (Non-DTU)
Lakhan Kumar	Dr. Navneeta Bharadvaja	Algal bioprocessing for enhanced biofuel and biochemical production	2023
Arpita Roy	Dr. Navneeta Bharadvaja	Biotechnological production of plumbagin from <i>Plumbago zeylanica</i>	2020
Deshika Kohali	Dr. Navneeta Bharadvaja	Identification of key genes involved in root knot nematode (<i>M. incognita</i>) development for effective resistance in plants using RNAi	2019
Mansi Punjabi	Dr. Navneeta Bharadvaja	RNAi induced transcriptional silencing of inositol polyphosphate 6-/3-/5-kinase (IPK2) gene in soybean seeds to generate low phytate lines	2019
Nupur Jauhari	Dr. Navneeta Bharadvaja	<i>In vitro</i> and <i>in silico</i> studies of important medicinal plants	2018
Sunil Kumar	Dr. Asmita Das	Combinatorial therapy for tumor treatment	2023
Neeraj Kumari	Dr. Asmita Das	Role of interleukin 6 in cellular and systemic responses to ionizing radiation	2020
Madhuri Chaurasia	Dr. Asmita Das	Elucidation of the role of autophagy and mitophagy in radiation response	2019
Sanghamitra Mylavarapu	Dr. Asmita Das	Identification and characterization of novel molecular markers in cancer prevalent among Indian patients	2019
Richa Sharma	Dr. Asmita Das	Tumor mediated modulation of NK cell receptor and their role in cancer	2018
Ashish Chandra Trivedi	Dr. Smita Rastogi Verma	Coexpression study and drug target identification for <i>Helicobacter pylori</i> using genes expression data analysis	2013 (Non-DTU)
Hariom Kushwaha	Dr. Smita Rastogi Verma	Molecular cloning and <i>in silico</i> studies of <i>Dof</i> (DNA binding with one finger) transcription factor genes and domain of different cereals and millets	2014 (Non-DTU)
Mohammad Shahid	Dr. Smita Rastogi Verma	Studies on molecular variability in <i>Trichoderma</i> sp. and their antagonistic effect against <i>Fusarium udum</i> causing wilt of pigeonpea	2014 (Non-DTU)

Faria Fatima	Dr. Smita Rastogi Verma	Biodiversity analysis of phosphate solubilizers at biochemical and molecular levels	2014 (Non-DTU)
Ira Chaudhary	Dr. Smita Rastogi Verma	Isolation of ligninolytic microorganisms and their biochemical and molecular characterization	2015 (Non-DTU)
Suman Lata	Dr. Smita Rastogi Verma	Screening of phytase producing soil isolates and fermentative production of phytase	2016 (Non-DTU)



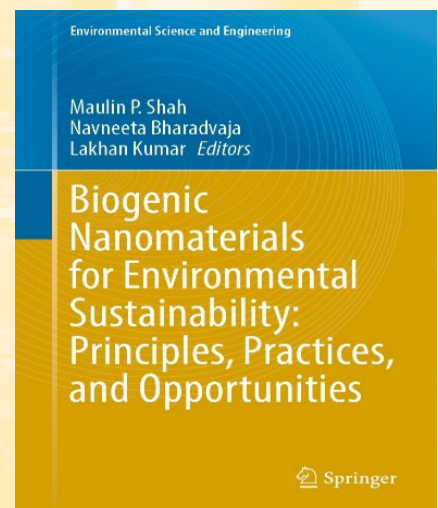
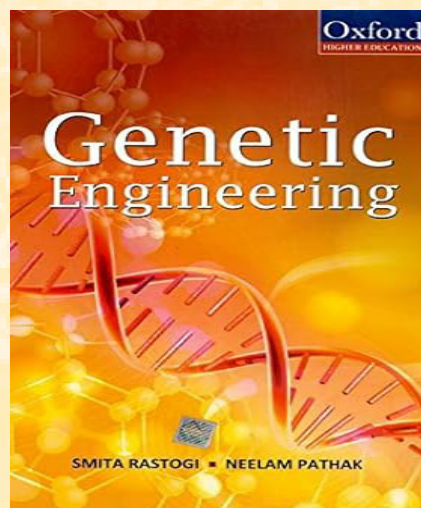
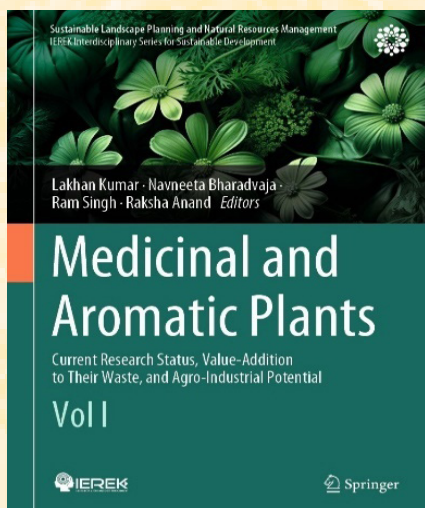
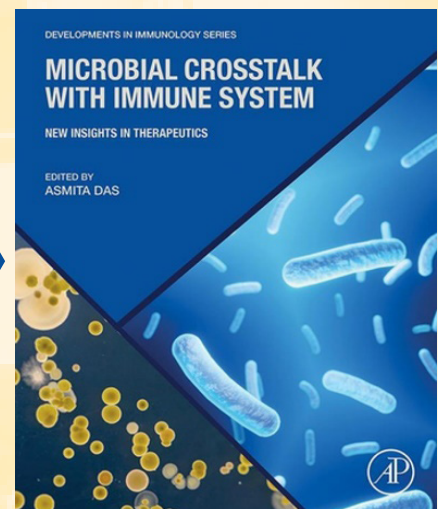
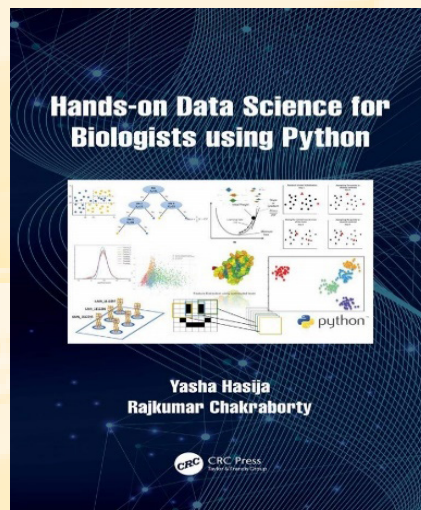
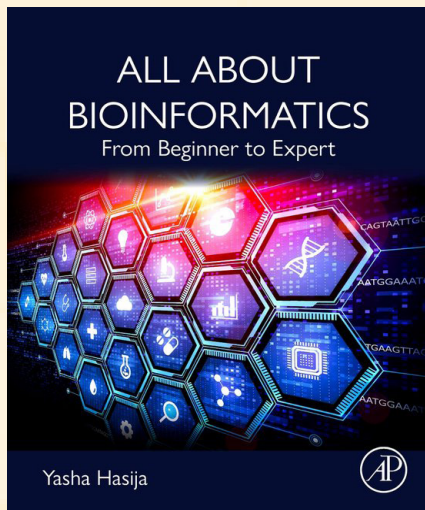
CUMULATIVE AND AVERAGE CITATIONS & h-INDEX OF DEPARTMENT

The department has established itself as a hub of research excellence and scholarly impact. Department's high cumulative h-index and total citations showcase the research prowess and commitment of faculty members and Ph.D. scholars to producing high-quality research with significant influence in the field.

	Google Scholar	Scopus
Total citations	Average – 2011; Cumulative – 16091	Average – 963; Cumulative – 8670
h-index	Average – 19; Cumulative – 153	Average – 13; Cumulative – 118

Remarkable Milestones in Academic Publishing by Faculty Members

Esteemed faculty members of the department have made significant contribution to academic literature by authoring and editing books published by renowned publishing houses, including Academic Press, Elsevier, Springer, CRC Press, and Oxford University Press. These books showcase the expertise and dedication of faculty members to their respective fields, and demonstrate department's commitment to knowledge creation and dissemination.



BioSoc-DTU

BioSoc-DTU stands as the official society of the Department of Biotechnology at Delhi Technological University. Under the esteemed guidance of faculty advisor Dr. Navneeta Bhardvaja and the visionary leadership of Head of Department, Prof. Yasha Hasija, the society thrives as a beacon of innovation and scholarly pursuit. With over 50 passionate and committed members, BioSoc-DTU is dedicated to nurturing an enduring passion for biotechnology and its interdisciplinary fields.

MISSION

BioSoc-DTU is steadfast in its mission to cultivate a dynamic and intellectually stimulating environment that promotes the exchange of knowledge, pioneering innovation, and collaborative endeavors among students. The society is committed to empowering the next generation of biotechnologists to explore cutting-edge advancements and make significant contributions to the field.

Activities and Initiatives

The society orchestrates a plethora of activities designed to enrich both the academic and practical realms of biotechnology -

WORKSHOPS AND SEBINARS:

Conducted by distinguished industry experts and academic luminaries, such sessions offer profound insights and hands-on experience in contemporary biotechnological techniques and breakthroughs

COMPETITIONS:

These intellectually rigorous contests challenge students to apply theoretical knowledge in innovative and practical scenarios, fostering a spirit of ingenuity and problem-solving

INDUSTRIAL VISITS:

To seamlessly integrate academic learning with industrial applications, BioSoc-DTU organizes visits to leading companies. These excursions provide invaluable exposure to real-world biotechnological practices and operations



Student Council Members

PRESIDENT

Shivam Raju

VICE PRESIDENT

Katyayani Agarwal

GENERAL SECRETARY

Sanskar Srivastava

TREASURER

Prajakta Tiwari

Students Co-Heads

Content and Research

- Anjali Sharma
- Anushka Goswami
- Isha Jain
- Nishant Kumar

Events and Collaborations

- Ayushi Gupta
- Khyati Tuli
- Mohit Daber

Corporate

- Bhavya Choudhary
- Sakshya Singh

Technical Affairs

- Ayushi Gupta
- Hutashan Solanki
- Soham Sheemar
- Unnati Nath

Public Relations

- Aman Yadav
- Harshit Bharadwaj
- Kushagra
- Shreya Raman

National & International Events Organized Under the Umbrella of Viksit Bharat@2047

January-June 2024



Under the visionary initiative of Viksit Bharat@2047, the role of biotechnology emerges as a cornerstone for achieving sustainable development goals. Biotechnology serves as a catalyst for progress, addressing key challenges across agriculture, healthcare, environmental conservation, and industry. Through innovative applications and advanced healthcare solutions, biotechnology is positioned to drive a transformative and sustainable future for Bharat by the year 2047.

To create a vibrant academic ecosystem that benefits students, faculty, industry partners, and the wider community, the department organized diversified events between January-June 2024.

These programs were designed not only to disseminate knowledge about biotechnology, but also to provide a holistic education, going beyond the confines of the classroom. The goal was to enrich our students' academic experience as well as to prepare them to excel in various aspects of life, making them well-rounded and industry-ready professionals.

The events organized broadly covered the impact of biotechnology on society, sustainable development, entrepreneurship - mentorship, start-up ideas, venture development, grant writing, health awareness, gender sensitization, and financial management.

BIOTECHNOLOGY & SOCIETY WELFARE

A Symposium on 'Biotechnology for Sustainable Development' was organized on January 23, 2024

Eminent Speakers -

- **Dr. Manish Kumar**, Head, Department of Biophysics, Delhi University delivered a talk on 'One Health Approach to Antibiotic Resistance and Sustainable Development'
- **Dr. Neel Sarovar Bhavesh**, Group Leader, Transcriptional Regulation, ICGEB, New Delhi talked about 'Mainstreaming Traditional Knowledge into Modern Health Practices for Precision Wellness'
- **Prof. Sonika Bhatnagar**, Head, Department of Biological Sciences and Engineering, NSUT, New Delhi delivered a talk on 'A Novel Approach to Structure-based Drug Design and Discovery for Inflammatory Diseases'

The symposium unravelled the innovative applications of biotechnology that can contribute to key facets of sustainable development, aligning with Viksit Bharat's commitment to comprehensive progress. Through a series of engaging discussions and collaborative sessions, the role of biotechnology in addressing societal challenges, promoting economic growth, and ensuring environmental conservation was highlighted.



Bioinsight Forum: A Panel Discussion on 'Drug Discovery and Bioinformatics' was organized by BioSoc-DTU, SRG-India International Society for Computational Biology on February 9, 2024

Panellists -

- **Prof. Urmi Bajpai**, Department of Biomedical Science, ANDC, DU
- **Dr. Janendra Batra**, INSA Senior Scientist, ICMR
- **Dr. Deeksha Pandey**, Scientist, ICGEB
- **Dr. Dibyabhaba Pradhan**, Scientist, AIIMS

The forum unfolded with an interactive panel discussion on cutting-edge topics in drug discovery and bioinformatics, including challenges in analyzing large datasets and validation, importance of data quality and standardization, predicting drug efficacy and toxicity, and personalized medicine. Panellists also highlighted future directions and emerging technologies.



LAB RATZ QUIZ 2.0 was organized by BioSoc-DTU on February 12, 2024

The quiz competition unfolded as a grand spectacle of intellect and camaraderie. **Dr. Debojyoti Basuroy** (Scientist, AIIMS), the esteemed Quiz Master set the stage for a thrilling competition after an inspiring introduction to the society's visionary mission.

The quiz commenced with an engaging online round, leading to three riveting offline rounds at DTU: two dynamic Bounce and Pounce sessions featuring Multiple Choice Questions and Case Study-Based fill-in-the-blanks, and a captivating JAM (Just a Minute) session.

The winners, **The Mighty Chordians** led by Aashi Barwal claiming 1st place, **Divya Dracos** led by Divya Sharma securing 2nd place, and **VitalH** led by Soham and Anushka clinching 3rd place, showcased exceptional knowledge and strategic acumen.



An International Symposium on ‘Current Trends in Biotechnology’ was organized on February 27, 2024

Eminent Speakers -

- **Dr. Ingo Schiessl**, Faculty, Biology Medicine and Health, University of Manchester talked about ‘From Bench to Bedside: How Interdisciplinary Research at the University of Manchester Shapes Future Treatments’
- **Dr. Arun Kumar Kondadi**, Group Leader, Medical Faculty, Heinrich Helne University delivered a talk on ‘Updated Insights into Mitochondrial Biology and Dynamics: Relevance to Health and Disease’
- **Dr. Ruchika Anand**, Group Leader, Medical Faculty, Heinrich Helne University delivered a lecture on ‘Unlocking Hope: Exploring Mitochondrial Diseases and the Promise of iPSCs (Induced Pluripotent Stem Cells)’

The aim of the symposium was to encourage students and build scientific aptitude and research-oriented outlook towards modern-day problems in the field of biotechnology. Speakers also focused on opportunities, mentorship, and initiatives for students to advance a career in biotechnology.



BIOTECHNOLOGY FOR SELF-RELIANT INDIA - STEPS TOWARDS ENTREPRENEURSHIP & START-UPS

An Outreach Event on Writing Proposals on ‘BIRAC - BIG 24th CALL’ was organized on January 11, 2024

Eminent Speaker -

- **Dr. Saket Chattopadhyay**, Senior Manager, FITT, IIT Delhi briefed about ‘Translational Research and Entrepreneurship’

Dr. Saket discussed various grant opportunities available to our students for their venture towards entrepreneurship. In his talk he exemplified the potential collaboration of co-incubator facility of FITT, IIT Delhi with DTU, so as to facilitate translation of research into products and patents as well as entrepreneurship ventures.



BioTech Venture X, a pioneering pitching competition, was organized by BioSoc-DTU on February 10, 2024

The competition provided a platform for aspiring biotech entrepreneurs to pitch innovative ideas. It illuminated the intersection of entrepreneurial prowess and biotechnological acumen.

Participants showcased visionary startup ideas that transcended the boundaries of theoretical knowledge and practical application in biotechnology. The winning innovations included **CareCoders**, led by Pranay Agarwal from Amity University; **Mitochondria is the PowerHouse of the Cell.IO** (MITPOTC.IO), spearheaded by Aditya Khuntia from DTU; and **Bottle of Gold**, helmed by Yash Walia from Ramjas College, University of Delhi. These ventures epitomized dedication to innovation and excellence, underscoring the event's role in fostering transformative ideas that promise to shape the future of biotechnology.



An 'Entrepreneurship-Academia Mentorship Program' was organized on May 20, 2024

Resource Persons -

- **Dr. Atul Kumar Jain**, Founder Director, Aquaculture
- **Mr. Nilanshu Shekhar**, Co-Founder, KAnalysis Consultant
- **Mr. Avijit Das**, Founder and Chairman, Premas Biotech
- **Dr. Alok K. Jain**, Director, Virat Export Pvt. Ltd.
- **Dr. Samik Ghosh**, Co-Founder & Chief Operating Officer, SBX Corp., CEO, SBX Technologies Corp., Co-Founder, lom Bioworks, India
- **Mr. Gaurav Gupta**, Co-Founder & CEO, CarePay
- **Dr. Jameel Ahmad**, MERIL Life Sciences
- **Mr. Kumar Ujjawal**, Entrepreneur, PowerLaw Pvt. Ltd.
- **Dr. Deeksha Bhartiya**, Founder & Director, GENOMIKI Solutions
- **Mr. Sandy Sandeip**, Duchana Founder, MEDSOLIN



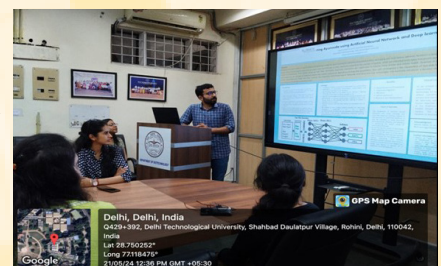
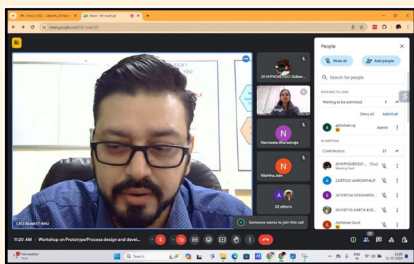
The program represented a groundbreaking initiative aimed at bridging the gap between entrepreneurs and academia and nurture a culture of innovation and creativity among participants. The event encouraged innovative thinking and problem-solving by leveraging the diverse perspectives of mentors from both academics and industries. Through this program, aspiring entrepreneurs gained access to valuable mentorship, guidance, and resources that blend practical industry insights with theoretical knowledge. By providing a dynamic ecosystem of mentorship and learning, the program empowered the participants to develop essential entrepreneurial skills, navigate challenges, seize opportunities, and ultimately drive innovation and success in their entrepreneurial endeavors. Additionally, the program cultivated a culture of collaboration, knowledge exchange, and lifelong learning, thereby enriching both the entrepreneurial community and the academic landscape. Looking forward, the program seeks to expand its reach, enhance its offerings, and continue fostering a dynamic ecosystem where aspiring entrepreneurs can thrive.

A Workshop on 'Prototype/ Process Design and Development' was organized on May 21, 2024 jointly with Institute Innovation Council (IIC-DTU) and University Innovation and Incubation Foundation (DIIF-DTU)

The workshop focused on designing and developing prototypes and processes for efficient product development. Dr. Saket shared his expertise and best practices in the integration of robust prototyping and process design methodologies that is essential for translating innovative concepts into successful, market-ready products. Rapid prototyping allows for quick iterations, enabling designers to test and refine their concepts efficiently. Concurrently, process design and development play a critical role in ensuring that these prototypes can be scaled up for mass production without compromising quality or functionality. Using advanced technologies such as 3D printing, computer-aided design (CAD), and simulation tools, companies can accelerate the development cycle, reduce costs, and bring products to market faster. Dr. Saket's extensive experience in technology transfer, process development, and incubation fostered a vibrant ecosystem for innovation and commercialization. Many participants presented E-Posters in the event on various topics related to the theme of workshop. Overall, the workshop offered valuable perspectives on the transformative role of biotechnology in India, highlighting its impact on economic growth, digital literacy, and development.

Eminent Speaker -

- **Dr. Saket Chattopadhyay**, CEO of BioNEST, BHU



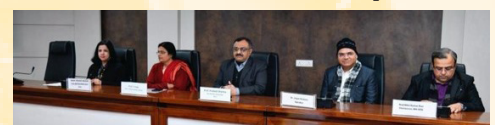
HEALTH AWARENESS & SENSITIZATION PROGRAMS

A Sensitization Program on 'Cancer Awareness and Palliative Care' was organized jointly with NSS-DTU in association with DNipCare on January 24, 2024

Keynote Speaker -

- **Dr. Jugal Kishore**, Director, Professor and Head, Community Medicine, Vardhaman Mahavir Medical College and Safdarjung Hospital, New Delhi

Dr. Jugal Kishore enlightened the youth on awareness and prevention of diseases, cancer awareness and importance of self-care. He also laid emphasis on health-related diseases due to emotional and mental depression, and the importance of vaccination in controlling chronic diseases. His presentation offered a compelling glimpse into the world of palliative care, highlighting its capacity to enhance the well-being of patients facing life-threatening diseases, such as cancer.



An Awareness Talk on 'Lifestyle Diseases: Role of Yoga in Health Promotion, Disease Prevention and Management' was organized jointly with NSS-DTU on February 22, 2024

Keynote Speaker -

- **Dr. Rima Dada**, Department of Anatomy, AIIMS

Addressing the program, Dr. Reema said that Yoga is a Mind-Body Energy Medicine that targets the entire body. Yoga has impact on health and wellness, including its potential to prevent disease onset. Her talk highlighted the impact of Yoga on various diseases, including glaucoma, unexplained male infertility, arthritis, depression, idiopathic recurrent spontaneous miscarriages, and polycystic ovarian syndrome. Dr. Reema emphasized that yoga should be integrated into modern medicine for the management of complex lifestyle related diseases. She supported her statements with scientific studies from her lab. The research findings prove that yoga activates the expression of DNA repair genes, reduces oxidative stress and inflammation, increases telomerase (an enzyme that prevents cells from dying) activity, promotes neuroplasticity, improves both nuclear and mitochondrial integrity, and impacts sperm genome and epigenome.

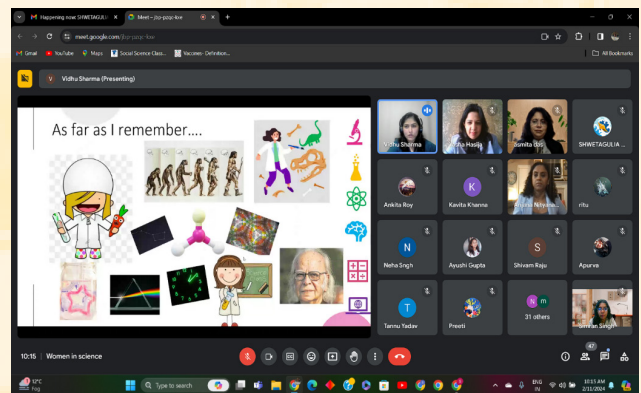


PROGRAM ON WOMEN IN SCIENCE

International E-Symposium on 'Women in Science' was organized on February 11, 2024

Eminent Speakers -

- **Dr. Vidhu Sharma**, Research Operations Manager, The University of British Columbia delivered a lecture on 'Building Bridges: From Lab Coats to Biomedical Research Management'
- **Dr. Anjana Nityanand**, Director of Operations, Stem Cells Lab, St. Jude Children's Research Hospital, Memphis, Tennessee, USA delivered a talk on 'Neurobiology and Immunology'
- **Dr. Kavita Khanna**, Campus Director, DSEU, India talked about 'Emerging Trends in Artificial Intelligence'



The symposium provided valuable insights into the journey of women in the realm of science and their contribution towards research and technology development. The symposium brought together experts to discuss the contributions, challenges, and opportunities for women in science, highlighting their achievements and addressing the gender gap.

PROGRAM ON FINANCIAL MANAGEMENT

A Session of 'Financial Management' was organized on April 04, 2024

Resource Person -

- **Mr. Madhur Kukreja**, Happy Finserv

The session covered essential topics on personal financial management, including budgeting, saving, investing, and debt management. Participants learnt practical strategies for achieving financial stability and security.

INDUSTRIAL VISIT

An educational tour to 'MILKYWAY MUSHROOM SPAWN' was organized by BioSoc-DTU on 30th March 2024

Participants from BioSoc-DTU recently embarked on an educational excursion to Milkyway Mushroom Spawn's facilities, gaining valuable insights into the industrial processes of mushroom cultivation. The visit provided a comprehensive overview of extraction, sterilization, and spawn culturing techniques, meticulously explained by patient mentors. Attendees explored the entire production line, from cultivation through to packaging, witnessing firsthand the application of advanced farming methodologies. The excursion concluded with attendees receiving thoughtful gifts, enhancing the educational value and leaving a lasting impression on all participants. Such initiatives contribute significantly to the experiential learning opportunities for students interested in biotechnological applications.



Achievements of Faculty Members, Alumni & Students January-June 2024

The department celebrates the diverse achievements of our faculty members, students, and alumni, spanning academic, research, and extracurricular spheres. From the perspective of faculty members, this section includes various areas, including academic assignments, conference presentations, invited talks, participation in faculty development programs, and research publications. The department especially takes pride in the multifaceted achievements of students, ranging from scholarly pursuits to professional milestones and extracurricular successes.

PARTICIPATION IN INTERNATIONAL CONFERENCE

Prof. Yasha Hasija presented a paper titled 'From atoms to applications: Computational insights in nanomechanics' in the IEEE-sponsored 3rd International Conference on Computational Modelling, Simulation and Optimization, organized at **Phuket, Thailand** held between June 14-16, 2024. The conference was organized by Innovative Research Foundation (IRF), National Institute of Technology Kurukshetra, India, Andhra Loyola Institute of Engineering & Technology, Andhra Pradesh, India, Sampoerna University, Indonesia.

INVITED TALK

Prof. Jai Gopal Sharma delivered an invited talk on 'Role of Science & Technology in the Development of Society' at Physica, The Physics Society, Department of Physics, Deshbandhu College, University of Delhi, February 28, 2024

PARTICIPATION IN FACULTY DEVELOPMENT PROGRAMS / SHORT-TERM TRAINING PROGRAMS

- **Prof. Jai Gopal Sharma** attended the National Training Programme on 'Biogas Production, Power Generation and Compressed Biogas Technology' held at Centre for Rural Development and Technology, IIT, Delhi, January 17-19, 2024).
- **Dr. Navneeta Bharadvaja** attended one week FDP on 'Advanced Teaching Pedagogy and Outcome-Based Education in Context of NEP-2020' organized by Human Resource Development Center, DTU in association with National Institute of Technical Teachers' Training & Research (NITTTR), Bhopal, May 27-31, 2024
- **Dr. Smita Rastogi Verma** attended FDP on 'NEP Orientation and Sensitization' under Malviya Mission Teacher Training Center (UGC-MMTTC) of UGC organized by the Centre for Professional Development in Higher Education (CPDHE), University of Delhi, May 20-30, 2024

OUTSTANDING ACHIEVERS IN GATE-BIOTECHNOLOGY



Sanyam Jain

(2K20/BT/54)

All India Rank 2



Suvani Rohatgi

(2K20/BT/64)

All India Rank 7

ADMISSION TO TOP-RANKING INTERNATIONAL UNIVERSITIES



Kunal Dugar

(2K20/BT/31)

MSc, Advanced Chemical Engineering with
Biotechnology



(QS Rank #2)



Sanyam Jain

(2K20/BT/54)

Full-time Ph.D. Program in School of Chemistry,
Chemical Engineering and Biotechnology



(QS Rank #15)



Prabal Kishore

(2K20/BT/41)

MS, Earth and Environmental
Engineering, Fu Foundation
School of Engineering and
Applied Science



Sanvidhi Singh

(2K20/BT/53)

MS Bioinformatics and
Biostatistics Degree
Program in Biostatistics,
School of Public Health and
Health Professions



Rashi Sharma

(2K20/BT/46)

Graduate Program (Degree
Level Ph.D.), Department of
Biomedical Engineering



QUALIFIED NATIONAL LEVEL COMPETITIVE EXAMINATIONS



Sanyam Jain

(2K20/BT/54)

IIT-JAM Biotechnology
(AIR 3)

DBT Biotechnology
Eligibility Test (BET)
(Category I)



Suvani Rohatgi

(2K20/BT/64)

Joint Graduate Entrance
Examination for Biology
and Interdisciplinary Life
Sciences (JGEEBILS)

DBT Biotechnology
Eligibility Test (BET)
(Category I)



Himanshi Pal

(2K20/BT/23)

DBT Graduate Aptitude
Test Biotechnology
(GAT-B)



Aayush Garg

(2K20/BT/02)

XAT with 84.09
percentile

PGDM, IMT Nagpur,
PGDM (Marketing), IMT
Hyderabad, PGDM,
LBSIM Delhi

ADMISSION TO PREMIER INSTITUTIONS IN INDIA



Suvani Rohatgi

(2K20/BT/64)

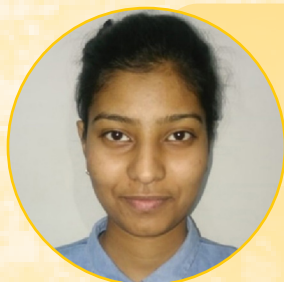
M.Tech. Bioengineering



Smriti Marjara

(2K20/BT/62)

M.Tech. Biotechnology



Himanshi Pal

(2K20/BT/23)

M.Tech. Biotechnology



Aayush Garg

(2K20/BT/02)

PGDM (Big Data
Analytics)









DELHI TECHNOLOGICAL UNIVERSITY CLASS OF 2024



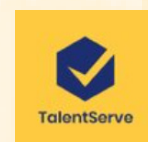
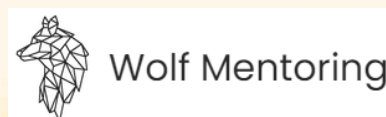
DELHI TECHNOLOGICAL UNIVERSITY CLASS OF 2024





PLACEMENTS

RECRUITERS



Student	Position	Company	Salary (Rs.)
POSTGRADUATE STUDENTS			
Yagyesh Kapoor (2K22/BIO/07)	Post Graduate Engineering Trainee	Stryker	10+2 LPA
Akanksha Sahu (2K22/MSCBIO/05)	Assistant Lecturer	Aakash Educational Services Ltd.	7.2 LPA
Anamika (2K22/MSCBIO/07)	Business Development Executive	Teachnook	6 LPA
Ashish (2K22/MSCBIO/14)	Assistant Lecturer	Aakash Educational Services Ltd.	7.2 LPA
Himani Joshi (2K22/MSCBIO/20)	Business Analyst Intern	Physics Wallah	--
Jaspreet Kaur (2K22/MSCBIO/22)	Zoology Faculty	Physics Wallah	5 LPA
Nishant Kumar (2K22/MSCBIO/34)	Academic Mentor	Vedantu	5 LPA
Sanya Arora (2K22/MSCBIO/44)	Zoology Faculty	Physics Wallah	5 LPA
Sejal Dogra (2K22/MSCBIO/45)	Management Trainee	TalentServe	10.5 LPA
Shivani Srivastava (2K22/MSCBIO/47)	Academic Mentor	Vedantu	5 LPA

Yogita Tomer (2K22/MSCBIO/56)	Academic Mentor	Vedantu	5 LPA
Ashima Gulia (2K22/MSCBIO/57)	Zoology Faculty	Physics Wallah	5 LPA
Ishita Sehgal (2K22/MSCBIO/58)	Outreach Program Manager	Wolf Mentoring	10 LPA
Taneem Alam (2K22/MSCBIO/60)	Trainee - Physician Assistant	IDS Infotech Ltd.	4 LPA
Kanchan Kumari (2K22/MSCBIO/62)	Academic Mentor	Vedantu	5 LPA
Anjali Sharma (2K22/MSCBIO/66)	Bioinformatics Analyst in Biotech Industrial Training Program	Mr. Biologist	20K/pm by DBT
UNDERGRADUATE STUDENTS			
Aaryan Vijay Kumar (2K21/BT/506)	Environmental Engineer	AI Dafarge Group Petroleum & Construction Company LLC, UAE	AED 29,500/ pm
Aaryan Vijay Kumar (2K21/BT/506)	ESG Research Analyst	Quess IT Staffing (A Division of Quess Corp. Ltd.)	3 LPA
Ankit Kumar (2K20/BT/07)	Intern – SMB & Mid Market Sales	Bhartipay Services Pvt. Ltd., New Delhi	20K/pm stipend
Ankit Thakur (2K20/BT/09)	Analyst	IQVIA	8 LPA
Ishi Thakur (2K20/BT/25)	Analyst	Everest Group	11 LPA
Parth Tyagi (2K20/BT/40)	Systems Engineer	TATA Consultancy Services Ltd. (TCSL)	7 LPA
Rashi Sharma (2K20/BT/46)	Analyst	IQVIA	8 LPA
Ritika Saha (2K20/BT/48)	Chief Product Officer	Einstein Classes Pvt. Ltd.	15 LPA
Sarthak Banerjee (2K20/BT/55)	Analyst	IQVIA	8 LPA
Sehar Sharma (2K20/BT/57)	Decision Analytics Associate	ZS Associates India Pvt. Ltd.	13.6 LPA
Shivam Bilandi (2K20/BT/58)	Analyst	IQVIA	8 LPA
Tia Verma (2K20/BT/65)	Management Trainee	Mobisaturn Technology Pvt. Ltd.	4 LPA
Udit Jain (2K20/BT/67)	Analyst	IQVIA	8 LPA
Utkarsh (2K20/BT/68)	Associate Consultant	Synapse Biopharma Research Pvt. Ltd.	8 LPA
Yukti Varshney (2K20/BT/72)	Decision Analytics Associate	ZS Associates India Pvt. Ltd.	13.65 LPA

PARTICIPATION IN CONFERENCES

Student(s)	Faculty Supervisor	Presentation / Poster Title & Conference Details
Ph.D. STUDENTS		
Neha Kumari (2K19/PHDBT/06) Akansha Bisht (2K23/PHDBT/01)	Prof. Yasha Hasija	From atoms to applications: Computational insights in nanomechanics in 'IEEE-sponsored 3 rd International Conference on Computational Modelling, Simulation and Optimization (ICCMO-2024)' organized by Innovative Research Foundation (IRF), National Institute of Technology Kurukshetra, India, Andhra Loyola Institute of Engineering and Technology (ALIET), Andhra Pradesh, India, Sampoerna University, Indonesia at Phuket, Thailand, June 14-16, 2024
Neha Kumari (2K19/PHDBT/06)	Prof. Yasha Hasija	CADD: Exploring the digital frontier in drug designing in 'ICCMO-2024' organized by IRF, NIT Kurukshetra, ALIET, Andhra Pradesh, Sampoerna University, Indonesia at Phuket, Thailand, June 14-16, 2024
Khushi Yadav (2K22/PHDBT/504), Nakul Tanwar (2K22/PHDBT/507)	Prof. Yasha Hasija	Exploring the role of gut microbiota in hypertension: Insights from machine learning and explainable AI in '15 th International IEEE Conference on Computing, Communication and Networking Technologies (ICCCNT-2024)', organized by IIT-Mandi, Himachal Pradesh, June 24-28, 2024
Rahul Tripathi (2K18/PHDBT/503)	Prof. Pravir Kumar	Computational insights into antimicrobial resistance in Alzheimer's disease: Unravelling the interactions at the molecular level in '3 rd International Conference on Antimicrobial Resistance, Novel Drug Discovery and Vaccine Development: Challenges and Opportunities (ICAMRNDDVD-2024)' organized by SRM University, Delhi-NCR, March 18-20, 2024
Neetu Rani (2K21/PHDBT/05)	Prof. Pravir Kumar	Revolutionizing antimicrobial defence: Unleashing CDK5 as a molecular maestro against drug resistance in 'ICAMRNDDVD-2024' organized by SRM University, Delhi-NCR, March 18-20, 2024
Mehar Sahu (2K21/PHDBT/03)	Prof. Pravir Kumar	Interplay between AMR susceptibility testing using deep learning: Implication for drug development in 'ICAMRNDDVD-2024' organized by SRM University, Delhi-NCR, March 18-20, 2024
Shefali Kardam (2K22/PHDBT/506)	Prof. Pravir Kumar	Navigating the dual challenge: Antimicrobial resistance and Parkinson's disease in 'ICAMRNDDVD-2024' organized by SRM University, Delhi-NCR, March 18-20, 2024
Shrutikirti Vashishth (2K22/PHDBT/503)	Prof. Pravir Kumar	Traversing the crossroads of antimicrobial resistance: Unmasking challenges and possibilities in innovative drug discovery and advancements in vaccines with a special focus on the gut microbiota in 'ICAMRNDDVD-2024' organized by SRM University, Delhi-NCR, March 18-20, 2024

Shweta Gulia (2K20/PHDBT/02)	Dr. Asmita Das & Dr. Prakash Chandra	Computational insights into <i>Punica granatum</i> phytochemicals as HSP90 inhibitors: Implications for cancer therapy in '12 th International Conference on Contemporary Engineering and Technology' organized by Organization of Science & Innovative Engineering and Technology, Prince Shri Venkateshwara Padmavathy Engineering College, Prince Dr. K. Vasudevan College of Engineering & Technology, Chennai in collaboration with Samarkand State University, Uzbekistan, March 23-24, 2024
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POSTGRADUATE STUDENTS

Aditi Singh (2K22/MSCBIO/03)	Prof. Yasha Hasija	Computational approach targeting Yin-yang 1 inflammatory pathway as an alternative to alleviate the symptoms of major depressive disorder in 'International Conference on Emerging Technologies in Science and Engineering (ICETSE-2024)' organized by Akshaya Institute of Technology and Hinweis Research' Karnataka, June 26-27, 2024
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Anjali Sharma (2K22/MSCBIO/66)	Prof. Yasha Hasija	Neurobiological basis of autism spectrum disorder: Focus on <i>Shank2</i> gene and molecular docking studies in 'International Conference on Intelligent Computing and Communication Techniques' organized by JNU, New Delhi, June 28-29, 2024
Kanchan Kumari (2K22/MSCBIO/62)		

Supriya Singh (2K22/MSCBIO/52)	Prof. Yasha Hasija	<i>In silico</i> approach for Parkinson's disease by targeting MAOB with pterostilbene in 'International Conference on Synergy in Progress: Navigating the Future Through Multidisciplinary studies, Technology, Digitalization, Sustainability and Research (ICMDISR-2024)' organized by Dronacharya Group of Institutions, June 28, 2024
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Aastha Kaushik (2K22/BIO/01)	Prof. Pravir Kumar	<i>In silico</i> design and immunoinformatics analysis of a mutation-resistant SARS-CoV-2 N-protein derived vaccine: Towards antimicrobial resistance mitigation in 'ICAMRNDDVD-2024' organized by SRM University, Delhi-NCR, March 18-20, 2024
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Aastha Kaushik (2K22/BIO/01)	Prof. Pravir Kumar	Computational insights into E3 ligase modulators targeting shared pathways in neurodegenerative diseases and cancer in 'Recent Advances in Neurochemistry and Neuroscience (RANN)' organized by Jamia Hamdard in collaboration with Society for Neurochemistry (SNCI), Delhi Local Chapter, March 25-26, 2024
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Anistha (2K22/MSCBIO/09)	Prof. Pravir Kumar	Revolutionizing glioblastoma treatment: In silico discovery targets <i>SOX2</i> gene through molecular docking, unveiling potential of cosmegen and repurposed penfluridol in 'IEEE 2024 International Conference on Automation and Computation (AUTOCOM-2024)', organized by Graphic Era Hill University, Dehradun, March 14-16, 2024
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Anistha (2K22/MSCBIO/09)	Prof. Pravir Kumar	Utilizing artificial intelligence and machine learning to address antibiotic resistance in bacterial infections for enhanced treatment of neurological disorders in 'ICAMRNDDVD-2024' organized by SRM University, Delhi-NCR, March 18-20, 2024
Anjali Roy (2K22/MSCBIO/10)	Prof. Pravir Kumar	From challenge to solution: Exploring drug reprofiling for neurological disorders in 'RANN' organized by Jamia Hamdard in collaboration with SNCI, Delhi Local Chapter, March 25-26, 2024
Nancy (2K22/MSCBIO/32)	Prof. Pravir Kumar	From challenge to solution: Exploring drug reprofiling for neurological disorders in 'RANN' organized by Jamia Hamdard in collaboration with SNCI, Delhi Local Chapter, March 25-26, 2024
Parneet Kaur (2K22/MSCBIO/36)	Prof. Pravir Kumar	Unravelling the neurobiology of antimicrobial resistance in central nervous system infection in 'ICAMRNDDVD-2024' organized by SRM University, Delhi-NCR, March 18-20, 2024
Nancy (2K22/MSCBIO/32) Anjali Roy (2K22/MSCBIO/10)	Prof. Pravir Kumar	From challenge to solution: Exploring drug reprofiling for neurological disorders in 'Recent Advances in Neurochemistry and Neuroscience' organized by Jamia Hamdard, Delhi, March 25-26, 2024
Parneet Kaur (2K22/MSCBIO/36)	Prof. Pravir Kumar	Unravelling the impact of physical exercise: Insights into neuroinflammation, neuroplasticity and neurodegeneration in 'RANN' organized by Jamia Hamdard in collaboration with SNCI, Delhi Local Chapter, March 25-26, 2024
Akanksha Sahu (2K22/MSCBIO/05)	Prof. Pravir Kumar	Exploring the role of <i>SORL1</i> gene and its pharmacological interactions in Alzheimer's disease in 'International Conference on Emerging Technologies in Science and Engineering (ICETSE)' organized by Akshay Institute of Engineering, Karnataka, June 26-27, 2024
UNDERGRADUATE STUDENTS		
Ishi Thakur (2K20/BT/25)	Prof. Yasha Hasija	Multiclass classification of glioblastoma and medulloblastoma tumors using machine learning in 'IEEE 2024 14 th International Conference on Cloud Computing, Data Science & Engineering (Confluence)', Amity University, UP, January 18, 2024
Achint Kaur (2K20/BT/04)		
Anvi Sud (2K20/BT/12)		
Harsh Batra (2K20/BT/22), Arpit Kumar Singh (2K20/BT/13)	Dr. Smita Rastogi Verma	Accelerating biological network analysis with deep learning in 'International Conference on Agriculture, Forestry, Biotechnology and Food Science (ICAFBFS)' organized by Science Globe & Institute of Research and Journals (IRAJ), Chennai, May 11, 2024
Tungalan Ganbaatar (2K20/BT/66), Rachael Kabichi (2K20/BT/44)	Dr. Prakash Chandra	Revolutionizing acute myeloid leukaemia treatment: Exploring and unravelling iPSC technology for personalized medicine as well as therapies in 'National Conference on BioTechnology and BioMedicines (NCBB-24)' organized by National Conference, Trivandrum, April 20, 2024

PUBLICATIONS

Esteemed faculty members, alumni, and students from the department published quality publications in the form of edited books, research publications in refereed journals, book chapters, and full-length papers in conference proceedings.

BOOKS EDITED BY FACULTY MEMBERS & DEPARTMENTAL ALUMNI

- Shah MP, **Bharadvaja N**, Kumar L (Eds.) (2024) Biogenic Nanomaterials for Environmental Sustainability: Principles, Practices and Opportunities. Publisher: Springer Cham
- Kumar L, **Bharadvaja N**, Singh R, Anand R (Eds.) (2024) Medicinal and Aromatic Plants: Current Research Status, Value-Addition to their Waste, and Agro-Industrial Potential (Vol I). Publisher: Springer Cham
- Bharadvaja N**, Kumar L, Pandit S, Banerjee S, Anand R (Eds.) (2024) Recent Trends and Developments in Algal Biofuels and Biorefinery. Publisher: Springer

PUBLICATIONS IN JOURNALS OF REPUTE

Student(s)	Faculty Supervisor & Publication Details
Nakul Tanwar (2K22/PHDBT/507)	Tanwar N, Hasija Y (2024) Explicate molecular landscape of combined pulmonary fibrosis and emphysema through explainable artificial intelligence: a comprehensive analysis of ILD and COPD interactions using RNA from whole lung homogenates. <i>Medical & Biological Engineering Computing</i> , https://doi.org/10.1007/s11517-024-03099-8
--	Sharma JG , Rai M, Guino-O li RS (2024) Microplastics influence the functional responses of omnivorous calanoid, a tropical estuarine calanoid <i>Pseudodiaptomus annandalei</i> . <i>Frontiers in Ecology and Evolution</i> , 12: 1277332
Sweeti Mann (2K19/PHDBT/04)	Mann S, Sharma JG , Kataria R (2024) Optimization of acidic pre-treatment conditions using response surface methodology for ethanol production from <i>Pistia stratiotes</i> using <i>Saccharomyces cerevisiae</i> and <i>Pichia stipitis</i> . <i>Biomass Conversion and Biorefinery</i> , 193: 105852
Madhulika Singh (2K18/PHDBT/511)	Singh M, Sharma JG , Giri B (2024) Unravelling the synergistic potential of mycorrhizal consortium in augmenting salinity stress tolerance in wheat by advancing physiological, metabolic, nutrient, and ultrastructural attributes. <i>Journal of Soil Science and Plant Nutrition</i> , 24: 3714–3733
Megha Bansal (2K21/PHDBT/01)	Singh M, Sharma JG , Giri B (2024) Unravelling the synergistic potential of mycorrhizal consortium in augmenting salinity stress tolerance in wheat by advancing physiological, metabolic, nutrient, and ultrastructural attributes. <i>Journal of Soil Science and Plant Nutrition</i> , 24: 3714–3733
Tushar Agarwal (2K21/IBT/15)	Agarwal T, Atray N, Sharma JG (2024) A critical examination of advanced approaches in green chemistry: microbial bioremediation strategies for sustainable mitigation of plastic pollution. <i>Future Journal of Pharmaceutical Sciences</i> , 10(1): 78
Jaspreet Kaur (2K22/MSCBIO/22)	Kaur J, Haokip L, Sharma JG (2024) Symbiotic microbial consortia for biodesalination: A novel approach towards sustainable seawater desalination. <i>Sustainable Chemistry and Pharmacy</i> , 40: 101605
Arif Khan (2K22/MSCBIO/13)	Khan A, Yadav S, Sharma JG (2024) Bio Synergize: Microbial synergy driving simultaneous bioremediation and nanoparticle synthesis. <i>African Journal of Biological Sciences</i> , 6(9): 672-696
Suman Yadav (2K22/MSCBIO/49)	

Moin Khan (2K22/MSCBIO/29), Shivani Srivastava (2K22/MSCBIO/47)	Khan M, Srivastava S, Sharma JG (2024) Spirulina as neuroprotective supplement in parkinsonism; A review. African Journal of Biological Sciences, 6(9): 2055-2074
Divya (2K22/MSCBIO/64), Himani Joshi (2K22/MSCBIO/20)	Divya, Joshi H, Sharma JG (2024) Bioremediation of heavy metals in contaminated water bodies. African Journal of Biological Sciences, 6(5): 5045-5070
Nilesh Yadav (2K20/BT/35) Vanshika Dabas (2K20/BT/69)	Yadav N, Dabas V, Sharma JG (2024) Microbial and phytoremediation of heavy metals from aquatic ecosystem: An initiative for sustainable environment. Journal of Pure and Applied Microbiology, 18(2): 823-836
Ankit Kundu (2K20/BT/08)	Kundu A, Sharma JG (2024) Magnesium oxide nanoparticle synthesis using Rhizophora lamarckii plant extract and its characterization. African Journal of Biological Sciences, 6(8): 200-208
Mehar Sahu (2K21/PHDBT/03), Neetu Rani (2K21/PHDBT/05)	Sahu M, Rani N, Kumar P (2024) Simulation and computational study of RING domain mutants of <i>BRCA1</i> and <i>Ube2k</i> in AD/PD pathophysiology. Molecular Biotechnology, 66(5): 1095-1115
Dia Advani (2K18/PHDBT/12)	Advani D, Kumar P (2024) Uncovering cell cycle dysregulations and associated mechanisms in cancer and neurodegenerative disorders: A glimpse of hope for repurposed drugs. Molecular Neurobiology, 10.1007/s12035-024-04130-7
Aastha Kaushik (2K22/BIO/01), Somya Parashar (23/BIO/01)	Kaushik A, Parashar S, Ambasta RK, Kumar P (2024) Ubiquitin E3 ligases assisted technologies in protein degradation: Sharing pathways in neurodegenerative disorders and cancer. Ageing Research Reviews, 96: 102279
Mehar Sahu (2K21/PHDBT/03), Rohan Gupta (2K19/PHDBT/01)	Sahu M, Gupta R, Ambasta RK, Kumar P (2024) IoT-driven augmented reality and virtual reality systems in neurological sciences. Internet of Things (Netherlands), 25: 101098
Mehar Sahu (2K21/PHDBT/03) Shrutikirti Vashishth (2K22/PHDBT/503) Neha Kukreti (2K19/PHDBT/10), Ashima Gulia (2K22/MSCBIO/57), Ashish Russell (2K22/MSCBIO/14)	Sahu M, Vashishth S, Kukreti N, Gulia A, Russell A, Ambasta RK, Kumar P (2024) Synergizing drug repurposing and target identification for neurodegenerative diseases. Progress in Molecular Biology and Translational Science, 205: 111-169
Neetu Rani (2K21/PHDBT/05), Aastha Kaushik (2K22/BIO/01), Shefali Kardam (2K22/PHDBT/506), Sonika Kag (2K19/PHDBT/17)	Rani N, Kaushik A, Kardam S, Kag S, Raj VS, Ambasta RK, Kumar P (2024) Reimagining old drugs with new tricks: Mechanisms, strategies and notable success stories in drug repurposing for neurological diseases. Progress in Molecular Biology and Translational Science, 205: 23-70

Neha Kukreti (2K19/PHDBT/10)	Kukreti N, Kumar P , Kataria R (2024) A sustainable synthesis of polyhydroxyalkanoate from stubble waste as a carbon source using <i>Pseudomonas putida</i> MTCC 2475. <i>Frontiers in Bioengineering and Biotechnology</i> , 12: 1343579
Neetu Rani (2K21/PHDBT/05), Mehar Sahu (2K21/PHDBT/03)	Rani N, Sahu M, Ambasta RK, Kumar P (2024) Triaging between post-translational modification of cell cycle regulators and their therapeutics in neurodegenerative diseases. <i>Ageing Research Reviews</i> , 94: 102174
--	Hediyal TA, Vichitra C, Anand N, Bhaskaran M, Essa SM, Kumar P , Qoronfleh MW, Akbar M, Kaul-Ghanekar R, Mahalakshmi AM, Yang J, Song BJ, Monaghan TM, Sakharkar MK, Chidambaram SB (2024) Protective effects of fecal microbiota transplantation against ischemic stroke and other neurological disorders: an update. <i>Frontiers in Immunology</i> , 15: 1324018
Sonika Kag (2K19/PHDBT/17)	Kag S, Kumar P , Kataria R (2024) Acid hydrolysis of <i>Solanum tuberosum</i> periderm for accumulation of polyhydroxyalkanoates in <i>Pseudomonas putida</i> MTCC 2475. <i>Frontiers in Bioengineering and Biotechnology</i> , 12: 1343540
Kanjam Manocha (2K20/BT/27)	Manocha K, Bharadvaja N (2024) Flavonoids and their therapeutic applications in neurological disorders. <i>African Journal of Biological Sciences</i> , 6(Si2): 84-102
Shweta Gulia (2K20/PHDBT/02)	Gulia S, Chandra P, Das A (2024) Natural compound dioscin targeting multiple cancer pathways through its high affinity binding to B Cell lymphoma-2. <i>Current Computer Aided Drug Design</i> , 10.2174/0115734099279130231211053542
Amit Mathur (2K19/BME/02), Ritu (2K19/PHDBT/13)	Mathur A, Ritu, Chandra P, Das A (2024) Autophagy: a necessary evil in cancer and inflammation, 3 <i>Biotech</i> , 14(3): 87
Shweta Gulia (2K20/PHDBT/02)	Gulia S, Chandra P, Das A (2024) Combating anoikis resistance: bioactive compounds transforming prostate cancer therapy. <i>Anti-Cancer Drugs</i> , 10: 1097
Ritika Saha (2K20/BT/48), Ashutosh Chauhan (2K20/BT/15)	Saha R, Chauhan A, Rastogi Verma S (2024) Machine learning: An advancement in biochemical engineering. <i>Biotechnology Letters</i> , 46(4): 497–519
--	Parihar RK, Bhandari K , Burnwal PK, Ghosh S, Chaurasia SP, Md Midda O (2024) Advancing dairy wastewater treatment: Exploring two-stage fluidized bed anaerobic membrane bioreactor for enhanced performance, fouling, and microbial community analysis. <i>Journal of Water Process Engineering</i> , 58: 104917
Sanyam Jain (2K20/BT/54), Sanskar Srivastava (2K21/BT/32), Ishika Gulati (2K19/BT/020)	Jain S, Srivastava S, Gulati I, Bhandari K (2024) Shaking hands with Streptococcal antibody degrading enzymes for clinical use. <i>Applied Biochemistry & Microbiology</i> , 60: 503–513
Ishika Gulati (2K19/BT/20), Kumar Satyam (2K19/BT/25)	Gulati I, Satyam K, Chandra P (2024) Electro-active conduits for neuro-regeneration: A step ahead. <i>Regenerative Engineering and Translational Medicine</i> , https://doi.org/10.1007/s40883-024-00331-7

BOOK CHAPTERS & FULL-LENGTH PAPERS IN CONFERENCE PROCEEDINGS

Student(s)	Faculty Supervisor & Publication Details
Sonika Kag (2K19/PHDBT/17) Neha Kukreti (2K19/PHDBT/10)	Kag S, Kukreti N, Kumar P , Kataria R (2024) Bioeconomy for sustainable bioenergy and biofuel generation. In: Bioeconomy for Sustainability, pp. 83-105, Springer
Anistha (2K22/MSCBIO/09)	Anistha, Kumar P (2024) Revolutionizing glioblastoma treatment: <i>In silico</i> discovery targets SOX2 gene through molecular docking, unveiling potential of cosmegen and repurposed penfluridol. In: AUTOCOM-2024, Dehradun, India, pp. 197-201
Roopal Pal (2K19/MSCBIO/14), Lakhan Kumar (2K17/PHDBT/03), Shaubhik Anand (2K20/MSCBIO/28)	Pal R, Kumar L, Anand S, Bharadvaja N (2024) Environmental pollutants remediation using phyto-nanoparticles: An overview on synthesis, characterization, and remediation potential. In: Biogenic Nanomaterials for Environmental Sustainability: Principles, Practices and Opportunities, pp. 111-145, Springer
Lalit Mohan (2K20/MSCBIO/11), Raksha Anand (2K20/MSCBIO/24), Lakhan Kumar (2K17/PHDBT/03),	Mohan L, Anand R, Kumar L, Bharadvaja N (2024) Biogenic silver nanoparticle and their applications. In: Biogenic Nanomaterials for Environmental Sustainability: Principles, Practices and Opportunities, pp. 497-508, Springer
Raksha Anand (2K20/MSCBIO/24)	Anand R, Mishra KK, Bharadvaja N (2024) Introduction to biotechnology. In: Biogenic Nanomaterials for Environmental Sustainability: Principles, Practices and Opportunities, pp. 1-11, Springer
Lakhan Kumar (2K17/PHDBT/03) Lalit Mohan (2K20/MSCBIO/11) Raksha Anand (2K20/MSCBIO/24) Animan Tripathi (2K20/MSCBIO/01) Manu Gangyan (2K20/MSCBIO/13) Muskan Garg (2K20/MSCBIO/18)	Kumar L, Mohan L, Anand R, Tripathi A, Gangyan M, Garg M, Bharadvaja N (2024) Biotechnological approaches to improve algal biofuel and biochemical production. In: Recent Trends and Developments in Algal Biofuels and Biorefinery, pp. 337–366, Springer

COCURRICULAR & EXTRACURRICULAR ACTIVITIES

Beyond academic success, our students have made a mark in co-curricular and extracurricular activities, showcasing their versatility and talent. These include, on campus internships in reputed industries, online certification courses, film making, cultural programs, music, plays, sports, gamified workshop on the theme environment, and social service.

PROFESSIONAL DEVELOPMENT

- **Yagyesh Kapoor** (2K22/BIO/07) – Completed internship at Stryker, Bengaluru
- **Kanishka Sapra** (2K21/BT/14) – Got on campus internship at Schlumberger Solutions Pvt. Ltd.
- **Diksha Khatri** (2K21/BT/09) – Completed NPTEL course on ‘Forest and their Management’ with a consolidated score of 100%
- **Prayash Pandey** (2K22/BT/31) – Worked as ‘Strategy & Growth Marketing Intern’ at CardByte AI Pvt. Ltd.
- **Prayash Pandey** (2K22/BT/31) – Received an offer for ‘Business Associate Internship’ position at Kookar
- **Anagh Aditya** (2K22/BT/05) – Completed research internship at Max Hospital on the topic ‘Studying and overcoming imatinib resistance in CML patients’
- **Anushka Goswami** (2K22/BT/06) – Worked as biotechnology researcher at Vitalth Forgers Pvt. Ltd. on ‘All-in-one diagnostic device’
- **Kushagra Shrivastava** (2K22/BT/25) – Completed research internship at Vitalth Forgers Pvt. Ltd., A Medtech Startup incubated by DTU IIF
- **Prayash Pandey** (2K22/BT/31) – Worked as research intern at Night Vision Technologies LLP in the domain of nanotechnology

CREATIVE ACCOMPLISHMENTS

- **Sanskar Srivastava** (2K21/BT/32) – Wrote, directed, edited and acted in a short film ‘Dusk. Dawn. Deceit’, and released on YouTube crossing 1000+ views in the first 24 hours

SPORTS

- **Soumya Singh** (2K22/BT/54) - Third position for Kabaddi in Aahvaan’24 held at DTU

SOCIAL, CULTURAL & ENVIRONMENT-RELATED ACTIVITIES

- **Prayash Pandey** (2K22/BT/31) - Awarded ‘Best Rotaractor of the Rotary Year 2023-24’ by Rotaract Club, DTU Regency for outstanding dedication and hard work in social service
- **Prayash Pandey** (2K22/BT/31) – Worked as ‘Human Resource Intern’ in the social awareness wing at Marpu Foundation
- **Kanishka Sapra** (2K21/BT/14) – Held the post of Joint Cultural Secretary, DTU Cultural Council
- **Mahim Kamble** (23/BT/40) – Team placed first in ‘Gamified Workshop and a Policy Planning Competition’ on the theme ‘Impact of Climate Change on Maritime Security Architecture’ hosted by Raisina House
- **Krishna Singhal** (23/BT/35) – Secured II position in ‘Aagaaz-Street Play Competition’ at Delhi Metropolitan Education affiliated to Guru Gobind Singh Indraprastha University, Delhi
- **Krishna Singhal** (23/BT/35) – Secured ‘Best Music’ position in ‘Aabhaas - Street Play Competition’ organized by Kshitij-Street Play Society of Gargi College, University of Delhi

CONTACT US

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