

NEWSLETTER



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Delhi Technological University

Shahbad Daulatpur, Bawana Road, Delhi-110042



Department of
BIOTECHNOLOGY

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Message from Hon'ble Vice-Chancellor

Prof. Prateek Sharma

Vice Chancellor
Delhi Technological University

The Department of Biotechnology at Delhi Technological University (DTU) has consistently been at the forefront of pioneering research and innovation, advancing our nation's journey towards becoming a Viksit Bharat. As we reflect on the incredible milestones we've achieved in the last six months, this newsletter stands as a testament to the outstanding contributions made by our researchers, faculty, and students in fields that are vital to the growth of biotechnology and its application across industries.

The rapid strides in biotechnology have placed India in a key position to address global challenges. Our alignment with the United Nations Sustainable Development Goals (SDGs) continues to drive our efforts, as we strive to provide solutions for healthcare, sustainable agriculture, environmental conservation, and climate change. The department's research initiatives are a critical piece of this effort, as they address both national priorities and global needs, creating a lasting impact that will benefit society as a whole.

This period has also seen continued success in research output, with numerous publications and patents from our researchers that are helping to elevate India's standing on the global scientific stage. These achievements reflect our unwavering commitment to excellence, and it is the dedication of our students, faculty, and staff that drives this momentum.

As we continue to align with the National Education Policy (NEP) 2020, the department is adapting to new educational frameworks that will ensure our researchers and students are equipped with the skills and knowledge to thrive in a rapidly changing world. Through fostering a culture of innovation and entrepreneurship, we are preparing the next generation of biotechnologists to tackle the challenges of tomorrow.

To the esteemed faculty and staff of the department, your commitment to research, teaching, and mentorship is truly the driving force behind these remarkable accomplishments. Your continued passion for advancing science and nurturing talent inspires us all. To the students, your dedication to learning and innovation is invaluable. The knowledge and skills you gain here will empower you to meet future challenges with confidence and creativity.

I extend my heartfelt congratulations to all those featured in this newsletter for their outstanding contributions. Let us look forward to the exciting challenges and opportunities that lie ahead. The Department of Biotechnology remains steadfast in its mission to push the boundaries of biotechnology, making meaningful contributions to both the scientific community and society.

Prof. Prateek Sharma
Vice Chancellor
Delhi Technological University



Message from Registrar

Prof. Madhusudan Singh

Registrar
Delhi Technological University

I am delighted to know that the Department of Biotechnology at Delhi Technological University is releasing its second biannual newsletter. Following the success of its inaugural issue, this publication once again celebrates the department's remarkable achievements and the ongoing advancements in the fields of biotechnology, research, and innovation. As we reflect on the progress highlighted in this issue, it is clear that the department's continued success is a direct result of its unwavering commitment to excellence in research, education, and fostering a culture of innovation.

Over the last six months, the department has made significant strides in aligning with India's aspirations of becoming a Viksit Bharat by addressing pressing challenges in healthcare, agriculture, and environmental sustainability. Through its research and academic initiatives, the department is actively contributing to the realization of the United Nations Sustainable Development Goals (SDGs), ensuring that the work carried out within its labs and classrooms is not only impactful but also relevant to global needs.

The department's achievements, from innovative research collaborations to its active role in promoting interdisciplinary learning, showcase the strength of its faculty, students, and staff. Your collective efforts, from research breakthroughs to mentorship, play an integral role in fostering a culture of inquiry and creativity that drives the department's success.

To the dedicated faculty and staff of the Department of Biotechnology, your contributions continue to inspire both current students and your colleagues across the university. Your unwavering commitment to advancing knowledge and fostering an environment where innovation thrives is truly commendable.

To our students, you are the heart of the department. Your enthusiasm, passion for learning, and innovative spirit are shaping the future of biotechnology. The knowledge and experiences you gain here will empower you to face the challenges of tomorrow with confidence, creativity, and a strong sense of responsibility.

As we look to the future, the Department of Biotechnology at DTU will continue to lead in shaping the next generation of biotechnologists and making meaningful contributions to both science and society. Congratulations to everyone involved in these successes. I look forward to witnessing the continued growth and impact of the department in the years ahead.

Prof. Madhusudan Singh
Registrar
Delhi Technological University



Message from Head of Department

Prof. Yasha Hasija

Head, Department of Biotechnology
Delhi Technological University

Biotechnology has emerged as a transformative force, capable of reshaping industries, improving lives, and addressing the most pressing global challenges. Just as the world once looked to industrial revolutions for progress, today, biotechnology stands as the next catalyst for change—unlocking opportunities across diverse sectors from healthcare and agriculture to environmental conservation and climate action.

At the Department of Biotechnology, we are fully aligned with India's vision of a "Viksit Bharat" and the global ambition to achieve the United Nations Sustainable Development Goals (SDGs). Our research and academic pursuits are focused on solving real-world problems by driving interdisciplinary innovation, advancing technology, and fostering a culture of entrepreneurship. We aim to equip our students and researchers with the knowledge, skills, and mindset needed to contribute meaningfully to the achievement of the SDGs while preparing them for leadership in a rapidly evolving world.

Over the past six months, the Department of Biotechnology has made significant strides in both education and research. The department proudly launched two new academic programs for the academic year 2024-2025: the M.Tech. by Research program, aimed at developing advanced research skills, and the Integrated B.Sc.-M.Sc. Biotechnology program, designed to offer a comprehensive, multidisciplinary education. These initiatives are aligned with the vision of the National Education Policy (NEP) 2020, which emphasizes holistic and interdisciplinary learning. In line with this, our department remains dedicated to promoting research that addresses key societal needs, whether advancing sustainable agricultural practices, pioneering breakthroughs in healthcare, or combating climate change. Through these efforts, we aim to provide solutions that not only benefit India but also have a meaningful global impact.

As we continue to expand our innovative programs, state-of-the-art research initiatives, and collaborative partnerships, we aim to cultivate a generation of scientists, innovators, and leaders who are equipped to tackle the challenges of tomorrow. Our mission is to inspire creativity and harness the potential of biotechnology to build a prosperous, sustainable, and resilient future for all. Together, we are not just shaping the future of biotechnology; we are shaping the future of our nation and the world.

Prof. Yasha Hasija

HoD, Department of Biotechnology
Delhi Technological University

Editor's Note - Sustainable Development Goals



Dr. Smita Rastogi Verma
Assistant Professor, Department of
Biotechnology

United Nations launched the Sustainable Development Goals (SDGs) in 2015, a comprehensive framework of 17 goals representative of universal call of action to address global challenges. At the heart of the SDGs lies the core principle of 'Leaving no one behind'. These aim at promoting sustainable development, eradicating poverty, good health and well-being, quality education, protecting the planet, social equity, economic growth, environmental sustainability, and ensuring that all people enjoy peace and prosperity by 2030. In alignment with the global agenda, the Department of Biotechnology at Delhi Technological University is actively working towards making a meaningful impact in achieving the SDGs.

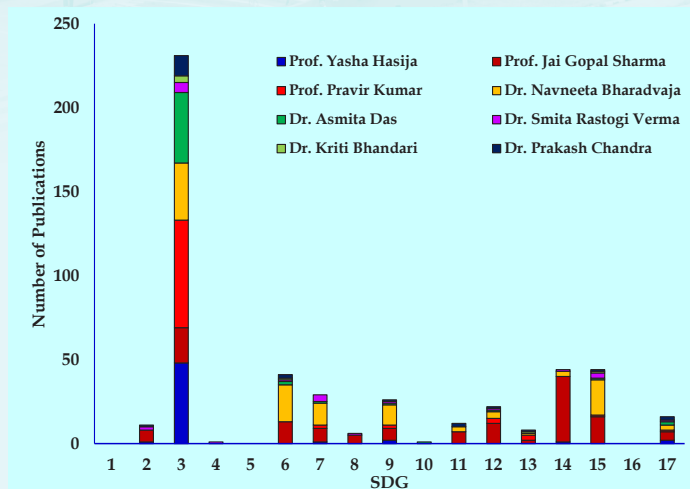
Over the past decade, faculty members of the department have made significant research contributions towards attainment of SDGs. During the past six months, the department has organized several workshops and conferences, focusing on SDG themes, to promote awareness, research, and innovation. These events have provided a platform for stakeholders to come together, share knowledge, and discuss ways to address the challenges associated with achieving the SDGs. Thus, by leveraging its research expertise, innovative academic programs, strategic collaborations, and engaging workshops, the department is driving meaningful progress towards the attainment of the SDGs, ultimately contributing to a more sustainable, equitable, and prosperous future for all.

Commencing with the research contributions of faculty members towards SDG attainment over the past decade, this issue of newsletter highlights the department's ongoing efforts to advance the SDGs, with a focus on academic and research highlights from July to December 2024.

Dr. Smita Rastogi Verma
Editor, Newsletter
Assistant Professor, Department of Biotechnology
Delhi Technological University

Research-Based Attainment of SDGs by Faculty Members Over the Past Decade (Scopus)

The faculty members have made substantial contributions to the attainment of SDGs through their rigorous and impactful research. Their team comprised of research scholars, UG and PG students. As evidenced by their publications in refereed Scopus-indexed journals, their work has profoundly addressed many of the world's most pressing challenges. These accomplishments demonstrate their unwavering dedication to advancing the SDGs and fostering a more equitable, sustainable, and prosperous world.



1 NO POVERTY 	End poverty in all its forms everywhere	10 REDUCED INEQUALITIES 	Reduce inequality within and among countries
2 ZERO HUNGER 	End hunger, achieve food security and improved nutrition and promote sustainable agriculture	11 SUSTAINABLE CITIES AND COMMUNITIES 	Make cities and human settlements inclusive, safe, resilient and sustainable
3 GOOD HEALTH AND WELL-BEING 	Ensure healthy lives and promote well-being for all at all ages	12 RESPONSIBLE CONSUMPTION AND PRODUCTION 	Ensure sustainable consumption and production patterns
4 QUALITY EDUCATION 	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	13 CLIMATE ACTION 	Take urgent action to combat climate change and its impacts
5 GENDER EQUALITY 	Achieve gender equality and empower all women and girls	14 LIFE BELOW WATER 	Conserve and sustainably use the oceans, seas and marine resources for sustainable development
6 CLEAN WATER AND SANITATION 	Ensure availability and sustainable management of water and sanitation for all	15 LIFE ON LAND 	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
7 AFFORDABLE AND CLEAN ENERGY 	Ensure access to affordable, reliable, sustainable and modern energy for all	16 PEACE, JUSTICE AND STRONG INSTITUTIONS 	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
8 DECENT WORK AND ECONOMIC GROWTH 	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	17 PARTNERSHIPS FOR THE GOALS 	Strengthen the means of implementation and revitalize the global partnership for sustainable development
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE 	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation		

Commencement of New Academic Programs

The Department of Biotechnology offered two new programs in the Academic Year 2024-2025



M.Tech. by Research

- M.Tech. by Research program is a research-oriented post-graduate degree designed to enhance students' research skills and domain knowledge. This program serves as a foundation for professional growth or as a stepping stone for pursuing a Ph.D. degree.
- The curriculum includes a structured coursework component in the first year, allowing students to directly transition into a Ph.D. in their chosen domain upon successful completion of the initial year. Additionally, up to 20% of the coursework can be completed through MOOCs available on platforms like NPTEL and SWAYAM, offering flexible learning opportunities.
- Research areas offered include Functional Genomics, Environmental Biotechnology, Machine Learning, Immunology, Plant Biotechnology, Bioprocess Technology, Nanobiotechnology, Molecular Therapeutics, Big Data in Biology.

Integrated B.Sc.-M.Sc. Biotechnology

- The five-year multidisciplinary integrated post-graduate program represents a transformative approach to higher education, replacing traditional undergraduate and post-graduate programs in the state.
- It is a flexible program with multiple entry and exit points. It adopts an Outcome-Based Education framework. This program adheres to the Choice-Based Credit System norms specified by the UGC and aligns with the vision of NEP 2020, fostering holistic and multidisciplinary education.

Achievements of Faculty Members, Research Scholars, Undergraduate Students, Post-graduate Students and Alumni

Patents

- Title of Invention: Vending System for Precision Plant Disease Management Through Image Recognition and Automated Pesticide Dispensing**
 - Application No.:** 202411077384; **Publication Date:** December 27, 2024
 - Inventors:** Yasha Hasija, Rajkumar Chakraborty
 - Description:** The invention relates to an automated system designed to diagnose plant diseases and dispense the appropriate pesticide on demand, similar to the operation of an ATM. The system comprises an embedded microcomputer that processes images captured by an integrated camera. These images are analyzed by a neural network trained to identify various plant diseases. Upon diagnosis, the system automatically dispenses the correct pesticide from a designated compartment, controlled by a bidirectional motor module. The system includes a graphical user interface (GUI) that allows users to interact with the dispenser, select options, and monitor the process in real-time.
- Title of Invention: A Reusable Digestion Tube for Amino Acid Assay**
 - Patent No.** 551061; **Grant Date:** September 25, 2024 (**Application No.** 202411002241)
 - Inventors:** Prof. Jai Gopal Sharma, Prof. Rina Chakrabarti, Dr. Pinaki Chakraborty
 - Description:** The invention introduces an advanced reusable digestion tube specifically designed for the digestion of samples in amino acid assays. The main component of the device is a borosilicate glass tube known for its resistance to high temperatures and chemical corrosion, making it ideal for the rigorous conditions of amino acid digestion. The tube is combined with a teflon cap, which ensures chemical inertness during the digestion process. This advanced tube features a gas inlet for controlled nitrogen injection and an outlet for the release of air, creating an inert atmosphere inside the tube. This prevents the oxidation of amino acids during digestion, which is important for accurate amino acid measurements. A constriction in the tube allows the cap to form an airtight seal, ensuring no external air enters. Unlike previous devices, this apparatus prevents hydrochloric acid spills and is reusable, offering a safer, more efficient, and environment-friendly solution for amino acid assays. The invention overcomes the limitations of previous methods, which were prone to oxidation of amino acids within the samples and involved complex sealing procedures.



CAS Promotions

- Dr. Navneeta Bharadvaja** and **Dr. Asmita Das** were promoted to Associate Professor. A decision to this effect was taken in 52nd meeting of the Board of Management held on September 26, 2024.



Participation in International Symposium / Conference

- Prof. Jai Gopal Sharma** attended 'Larvi 2024: Fish and Shellfish Larviculture Symposium' organized at **Ostend, Belgium**. He presented his contribution on 'Performance of Rohu Labeo Rohita Larvae Fed with Freshwater Macrophytes Incorporated Diets' at the symposium (September 9-12, 2024).
- Prof. Jai Gopal Sharma** attended '7th International Conference on Duckweed Research' organized at **Kasetsart University, Bangkok**. The title of his presentation was 'Evaluation of Amino Acid Profiles and Vitamin Compositions of Freshwater Macrophytes with Special Reference to Duckweeds Lemna minor and Spirodela polyrhiza' (November 13–16, 2024).



Participation in Women Leadership Program

- Prof. Yasha Hasija** participated in Women Leadership Program 'Women Leaders: Shaping Academic Excellence for VIKSIT Bharat @2047' organized by **University Grants Commission - Ministry of Education** on December 13, 2024 at Dogra Hall, IIT Delhi. Hon'ble Minister of Education, **Shri Dharmendra Pradhan Ji** was the Chief Guest of the program. The program aimed to bring together women leaders in higher education to exchange insights, foster collaboration, and inspire the next generation of academic pioneers. It served as a platform for enriching discussions, sharing experiences, and contributing to the vision of a progressive and inclusive academic future for our nation.



Participation in PoSH Workshop

- Dr. Kriti Bhandari** attended workshop on 'Building Trust on Campus: PoSH Insights for Academia' organized by Internal Complaint Committee, DTU jointly with Department of Electrical Engineering, DTU (November 21, 2024).



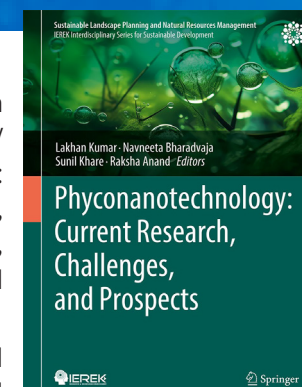
Member of Journal Editorial Board

- Navneeta Bharadvaja** and **Lakhan Kumar** (2K17/PHDBT/03) appointed as Topic Editors for the research topic 'Trends and Developments in Algal Biofuels, Biorefinery and Bioremediation' under the section 'Environment Chemical Engineering' of 'Frontiers in Chemical Engineering'.



Edited Books

- Lakhan Kumar** (2K17/PHDBT/03), **Navneeta Bharadvaja**, Sunil Khare, **Raksha Anand** (2K20/MSCBIO/24) edited a book 'Phyconanotechnology: Current Research, Challenges, and Prospects', Springer Cham; Hardcover ISBN 978-3-031-82185-1, Softcover ISBN 978-3-031-82188-2, eBook ISBN 978-3-031-82186-8.
- Lakhan Kumar** (2K17/PHDBT/03) et al. edited a book 'Advancements in Bio-systems and Technologies for Wastewater Treatment', Springer Cham; Hardcover ISBN 978-3-031-58330-8, Softcover ISBN 978-3-031-58333-9, eBook ISBN 978-3-031-58331-5.





Publications in International and National Journals

- **Priya Rai** (2K19/PHD/BT/05), **Yasha Hasija** (2024) Ionic liquids for stability of ker6, a potential keratinase for human hair keratin extraction. *Journal of Molecular Liquids* 415 (Part B): 126365; <https://doi.org/10.1016/j.molliq.2024.126365>
- **Khushi Yadav** (2K22/PHD/BT/504), **Yasha Hasija** (2024) Integrated analysis of gene expressions and targeted miRNAs for explaining crosstalk between oral and esophageal squamous cell carcinomas through an interpretable machine learning approach. *Medical & Biological Engineering & Computing* 2024: 1-13; <https://doi.org/10.1007/s11517-024-03210-z>
- **Bhargavi Sharma** (24/PHDBT/05), Shivani Yadav, Sonam Rewari, **Yasha Hasija** (2024) DM-PA-CNTFET biosensor for breast cancer detection: Analytical model. *ECS Journal of Solid State Science and Technology* 13(8): 087004; DOI 10.1149/2162-8777/ad6a88
- **Bidisha Bhowal** (2K21/PHDBT/06), **Yasha Hasija**, Sneha L. Singla-Pareek (2024) Tracing the intraspecies expansion of glyoxalase genes and their expanding roles across the genus *Oryza*. *Functional & Integrative Genomics* 24(6): Article 220; <https://doi.org/10.1007/s10142-024-01492-y>
- **Yagyesh Kapoor** (2K22/BIO/07), **Yasha Hasija** (2024) Exploring phytochemicals as potential inhibitors of cancer cell metabolic pathways: A computational study. *Medicinal Chemistry* 20(3); DOI: 10.2174/0115734064325567240930044647
- **Pratik Kakde** (2K22/BIO/03), **Jai Gopal Sharma** (2024) Microbial bioremediation of petroleum contaminated soil: Structural complexity, degradation dynamics and advanced remediation techniques. *Journal of Pure and Applied Microbiology* 18(4): 2244-2261 (Article 9449); DOI: 10.22207/JPAM.18.4.28
- **Sweeti Mann** (2K19/PHDBT/504), **Jai Gopal Sharma**, **Rashmi Kataria** (2024) Enhancement in sugar extraction from *Pistia stratiotes* through statistical optimization of alkaline pre-treatment and enzymatic hydrolysis. *International Biodeterioration and Biodegradation* 193: 105852; <https://doi.org/10.1016/j.ibiod.2024.105852>
- **Madhulika Singh** (2K18/PHDBT/511), Sunil Kumar Singh, **Jai Gopal Sharma**, Bhoopander Giri (2024) Insights into the multifaceted roles of soil microbes in mitigating abiotic stress in crop plants: A review. *Environmental and Experimental Botany* 228(Part B): 106010; <https://doi.org/10.1016/j.envexpbot.2024.106010>
- **Madhu Khanna**, **Kajal Sharma** (2K21/PHDBT/502), Shailendra Kumar Saxena, **Jai Gopal Sharma**, Roopali Rajput, Binod Kumar (2024) Unravelling the interaction between influenza virus and the nuclear pore complex: insights into viral replication and host immune response. *VirusDisease* 35(6): 231-242; DOI: 10.1007/s13337-024-00879-6
- **Jaspreet Kaur** (2K22/MSCBIO/22), **Lunsanglien Haokip** (2K22/MSCBIO/27), **Jai Gopal Sharma** (2024) Symbiotic microbial consortia for biodesalination: A novel approach towards sustainable seawater desalination. *Sustainable Chemistry and Pharmacy* 40(1-3): 101605; DOI: 10.1016/j.scp.2024.101605
- **Sanyam Jain** (2K20/BT/54), **Jai Gopal Sharma** (2024) Unconventional strategies for liver tissue engineering: plant, paper, silk and nanomaterial-based scaffolds. *Regenerative Medicine* 19(7-8): 1-17; DOI: 10.1080/17460751.2024.2378615
- **Anisha Kathpalia** (2K18/PHDBT/16), Sumitra Arora, **Jai Gopal Sharma** (2024) Sorption and residue analysis of phosphine in fruits and vegetables. *New Zealand Journal of Crop and Horticultural Science* 1-11; DOI: 10.1080/01140671.2024.2394137
- **Mehar Sahu** (2K21/PHDBT/03), Rashmi K. Ambasta, Suman R. Das, Manoj K. Mishra, Anil Shanker, **Pravir Kumar** (2024) Harnessing brainwave entrainment: A non-invasive strategy to alleviate neurological disorder symptoms. *Ageing Research Reviews* 101: 102547; <https://doi.org/10.1016/j.arr.2024.102547>
- **Neetu Rani** (2K21/PHDBT/05), **Pravir Kumar** (2024) Exploring natural compounds as potential CDK4 inhibitors for therapeutic intervention in neurodegenerative diseases through computational analysis. *Molecular Biotechnology*; DOI: 10.1007/s12033-024-01258-8
- **Neha Kukreti** (2K19/PHDBT/10), **Pravir Kumar**, **Rashmi Kataria** (2024) Sustainable biotransformation of lignocellulosic biomass to microbial enzymes: An overview and update. *Industrial Crops and Products* 222(1): 119432; <https://doi.org/10.1016/j.indcrop.2024.119432>
- **Shelfali Kardam** (2K22/PHDBT/506), Rashmi Kumar Ambasta, **Pravir Kumar** (2024) Overview of pro-inflammatory and pro-survival components in neuroinflammatory signalling and neurodegeneration. *Ageing Research Reviews* 100: 102465; <https://doi.org/10.1016/j.arr.2024.102465>
- **Shrutikirti Vashishth** (2K22/PHDBT/503), Rashmi Kumar Ambasta, **Pravir Kumar** (2024) Deciphering the microbial map and its implications in the therapeutics of neurodegenerative disorder. *Ageing Research Reviews* 100: 102466; <https://doi.org/10.1016/j.arr.2024.102466>
- **Kunal Dugar** (2K20/BT/31), **Aadya Suri** (2K20/BT/01), **Nishtha Jain** (2K20/BT/37), **Navneeta Bharadvaja** (2024) Multi faceted utilization of phytoremediation derived biomass for bio-ore and bioenergy production. *Vegetos*; <https://doi.org/10.1007/s42535-024-01064-2>
- **Nishant Sahdev** (2K20/BT/36) et al. (2024) Theory of space quantization (TSQ) driven version of the conventional theories of Physics, relativity, and gravitation - A concise report. *Open Access Journal of Astronomy* 2(2). Medwin Publishers; DOI: 10.23880/oaja-16000134
- **Nishant Sahdev** (2K20/BT/36) et al. (2024) Embodying the abstract 'Time variable' of the universe through thermodynamics and the theory of space quantization (TSQ). *Open Access Journal of Astronomy* 2(2). Medwin Publishers; DOI:10.23880/oaja-16000142

- **Sanyam Jain** (2K20/BT/54), **Smita Rastogi Verma** (2024) Genetic basis of coat colour variation in members of genus Panthera. Ecological Genetics and Genomics 33(2): 100300; <https://doi.org/10.1016/j.egg.2024.100300>
- **Tungalan Ganbaatar** (2K20/BT/66), **Rachael Kabichi** (2K20/BT/44), **Prakash Chandra** (2024) Revolutionizing acute myeloid leukemia treatment: Exploring and unravelling iPSC technology for personalized medicine as well as therapies. International Journal of Applied Engineering & Technology 5(S4): 82-91
- **Shweta Gulia** (2K20/PHDBT/02), **Prakash Chandra**, Bhupendra Pratap Singh,

Book Chapters

- **Anuradha** (2K20/PHD/BT/01), **Navneeta Bharadvaja** (2024) The flavorful world: Exploring the applications of spices in nutraceuticals. In: Santosh Kumar Upadhyay, Sudhir Pratap Singh (Eds.) Herbal Nutraceuticals: Products and Processes, Wiley; Print ISBN 9781394241545, Online ISBN 9781394241576; <https://doi.org/10.1002/9781394241576.ch10>
- **Ritu Dhankas** (2K19/PHDBT/13), **Nida-e-Falak** (2K21/MSCBIO/61), **Rahul Gupta**, **Bharmjeet Dahiya** (2K21/MSCBIO/09), **Asmita Das**, **Prakash Chandra** (2024) Nanoscience in controlled drug release in the gastrointestinal tract. In: Vivek K. Chaturvedi, Anurag Kumar Singh, Jay Singh, Dawesh P. Yadav (Eds.) Nanobiotechnology and Artificial Intelligence in Gastrointestinal Diseases, pp 3-33, IOP Publishing, UK; Hardback ISBN 9780750361323, eBook ISBN 9780750361347; DOI: 10.1088/978-0-7503-6134-7ch3
- **Lakhan Kumar** (2K17/PHDBT/03) et al. (2024) Membrane Bioreactors. In: Lakhan Kumar et al. (Eds.) Advancements in Bio-systems and Technologies for Wastewater Treatment. Water Science and Technology

et al. (2024) An insight into impact of nanomaterials toxicity on human health. PeerJ, 12: e17807; DOI: 10.7717/peerj.17807

- **Muskaan Jasraj** (2K21/BT/20), **Shivani** (2K22/BT/516) et al. (2024) A comprehensive review on the role of genetic testing in male fertility. World Journal of Pharmaceutical Research 13(19): 305-328
- **Shubhika** (24/IBT/10), **Pradeep Patel** (24/IBT/12) et al. (2024) Application of artificial intelligence techniques to addressing and mitigating biotic stress in paddy crop: A review. Plant Stress 14: 100592; <https://doi.org/10.1016/j.stress.2024.100592>
- **Daanish Vij** (24/MSCBIO/02), **Lakshay Virmani** (24/MSCBIO/11) et al. (2024) Nanobiotechnology in personalized oncology. In: Vivek Mishra, Ramendra Pati Pandey, Anjali Priyadarshini, Chung-Ming Chang, Elcio Leal (Eds.) Nanotherapeutics for Inflammatory Arthritis: Design, Diagnosis, and Treatment, CRC Press; ISBN 9781032391632; <https://doi.org/10.1201/9781003348672>
- **Lakshay Virmani** (24/MSCBIO/11) et al. (2024) Plastic recycling effects and the sudden banning of bags during the Covid 19 pandemic period. In: Osikemekha Anthony Anani, Mohd. Shahnawaz, Mudasar Ahmad Dar, Zhu Daochen (Eds.) Plastic and the COVID-19 Pandemic, Springer, Cham; Print ISBN 978-3-031-74768-7, Online ISBN 978-3-031-74769-4; https://doi.org/10.1007/978-3-031-74769-4_5

Library, Vol 118, pp. 25–47, Springer Cham; Hardcover ISBN978-3-031-58330-8, Softcover ISBN978-3-031-58333-9, eBook ISBN978-3-031-58331-5; https://doi.org/10.1007/978-3-031-58331-5_3

Participation in Conferences



STUDENT	SUPERVISOR	PRESENTATION TITLE	CONFERENCE DETAILS
Bhargavi Sharma (24/PHDBT/05)	Prof. Yasha Hasija	Dielectric modulated dielectric stack gate-all-around engineered plasma assisted carbon nanotube field effect transistor (DS-GAAE-PACNTFET) biosensor for breast cancer detection	8 th Asia-Pacific Conference on Plasma Physics organized at Malacca, Malaysia, November 3-8, 2024
Harshita Singh (2K19/PHDBT/03)	Dr. Navneeta Bharadvaja	Medicinal drug discovery through computational approach	3 rd International Multidisciplinary Conference on Recent Innovations in Science, Engineering, Management and Humanities (RISEMH-2024) organized online by JS University, Firozabad, October 25-26, 2024
Siddharth Sharma (2K19/PHDBT/501)	Dr. Navneeta Bharadvaja	Identification of phytochemicals for their antiviral properties through integration of ayurveda and artificial intelligence and neural networks	International Conference on Advances and Applications of Biotechnology (ICAAB 2024) organized online by School of Life Sciences, BS Abdur Rahman Crescent Institute of Sciences and Technology, Chennai, July 30-31, 2024
Anuradha (2K20/PHDBT/01)	Dr. Navneeta Bharadvaja	Plant based nanoparticles for environment remediation: An ecofriendly approach	International Conference on Environment and Life Sciences (ICELS-24) organized online by Society for Education (SFE), Shimla, July 14, 2024
Pragati Shrivastava (2K23/PHDBT/02)	Dr. Navneeta Bharadvaja	Transforming agriculture: Advances and applications of biotechnology in crop improvement and sustainable farming - A comprehensive review	ICAAB 2024 organized online by School of Life Sciences, BS Abdur Rahman Crescent Institute of Sciences and Technology, Chennai, July 30-31, 2024

Research Excellence Awards Conferred by DTU

Faculty Members received Citation Awards and Commendable Research Excellence Awards at the **Research and Innovation Excellence Award Ceremony** organized by Delhi Technological University on September 5, 2024 for their remarkable publications in journals of repute in the year 2023.



Cumulative Citation Award: Gold
Prof. Pravir Kumar

Highly Cited Paper Award
Prof. Pravir Kumar

Yearly Citation Award:
Early Impact and Influence Award
Prof. Pravir Kumar
Dr. Navneeta Bharadvaja

Commendable Research Excellence Awards
Prof. Yasha Hasija, Prof. Jai Gopal Sharma,
Prof. Pravir Kumar, Prof. B.D. Malhotra, Dr. Navneeta
Bharadvaja, Dr. Asmita Das, Dr. Smita Rastogi Verma,
Dr. Prakash Chandra, Dr. Kriti Bhandari



Commendable Research Excellence Awards were also received by research scholars, undergraduate and post-graduate students, and alumni. The recipients were -

- Anuradha, Asmita Kumari, Dia Advani, Divya Yadav, Garima, Harshita Singh, Jaishree Meena, Japneet Singh, Khyati Joshi, Lakhan Kumar, Lalit Mohan, Madhulika Singh, Manjari Vyas, Megha Bansal, Megha Kumari, Nancy Sanjay Gupta, Neha Tiwari, Niharika Gupta, Parul Puri, Priya, Rahul Tripathi, Raksha Anand, Ritu, Rohan Gupta, Roopal Pal, Saksham Garg, Shaubhik Anand, Shreya Dutta, Shruti Gautam, Shruti Sounkaria, Shubhang Gopal, Shweta Gulia, Simran Kaur, Smita Kumari, Sudhanshu Sharma, Sunil Kumar, Sushant Sunder, Tarunya Menon, Vandana Joshi.



Vice Chancellor Gold Medal Recipients

The Vice Chancellor Gold Medals for being the best students in UG & PG programs of the Department of Biotechnology on the basis of overall performance in academics were presented to -

- Ananya Chugh** (2K22/MSCBIO/08) in **M.Sc. Biotechnology**
- Ritika Saha** (2K20/BT/48) in **B.Tech. Biotechnology**



Conferment of Doctor of Philosophy Degree in the 11th Convocation



Ph.D. SCHOLAR	SUPERVISOR	TITLE OF THESIS
Deeblina Guin (2K17/PHDBT/01)	Prof. Yasha Hasija	Clinical pharmacogenomics for anti-epileptic drug response in epilepsy patient management in India
Kritika Sharma (2K19/PHDBT/12)	Prof. Yasha Hasija	Role of microRNAs in regulating mitochondrial biogenesis and function
Madhulika Singh (2K18/PHDBT/511)	Prof. Jai Gopal Sharma	The role of soil microbes in alleviating abiotic stresses in economically important crop plants
Sweeti (2K18/PHDBT/504)	Prof. Jai Gopal Sharma	Renewable chemicals production from aquatic weed: <i>Pistia stratiotes</i>
Priya (2K19/PHDBT/05)	Prof. Jai Gopal Sharma	Process optimization for the production of microbial phytase and its application in feed industry
Megha Bansal (2K21/PHDBT/01)	Prof. Jai Gopal Sharma	Synergistic plant-microbe interaction in modulating micro/nano plastic degradation for sustainable ecosystem
Sonika Kag (2K19/PHDBT/17)	Prof. Pravir Kumar, Dr. Rashmi Kataria	Sustainable production of industrially important chemicals from agroindustrial waste
Neha Kukreti (2K19/PHDBT/10)	Prof. Pravir Kumar, Dr. Rashmi Kataria	Implementation of stubble waste for biotransformation to industrially important chemicals
Mehar Sahu (2K21/PHDBT/03)	Prof. Pravir Kumar	Proteinopathies, proteotoxicity and triaging in neurodegenerative disorders
Neetu Rani (2K21/PHDBT/05)	Prof. Pravir Kumar	Therapeutic implications of ubiquitin proteasome system in neurodegenerative diseases
Niharika Gupta (2K17/PHDBT/02)	Prof. D. Kumar, Prof. B.D. Malhotra, Dr. Asmita Das	Nanomaterials modified conducting paper sensors for biomedical applications
Namit Dey (2K18/PHDBT/512)	Dr. Asmita Das	Investigation into soft templated bioactive glass nanoparticles for biomedical applications
Ritu (2K19/PHDBT/13)	Dr. Asmita Das, Dr. Prakash Chandra	Development of nanoparticle mediated drug delivery system for anticancer bioactive compounds



Award of Degrees to Undergraduate and Post-Graduate Students in the 11th Convocation



S. No.	Roll. No.	Name
B.Tech. BIOTECHNOLOGY		
1	2K17/BT/24	Siddharth Kumar
2	2K19/BT/49	Sunny
3	2K19/BT/053	Vishal Kumar
4	2K20/BT/01	Aadya Suri
5	2K20/BT/02	Aayush Garg
6	2K20/BT/03	Abhishek Kumar
7	2K20/BT/04	Achint Kaur
8	2K20/BT/05	Akansha
9	2K20/BT/07	Ankit Kumar
10	2K20/BT/08	Ankit Kundu
11	2K20/BT/09	Ankit Thakur
12	2K20/BT/10	Ankit Thakur
13	2K20/BT/11	Anunay Raj
14	2K20/BT/12	Avni Sud
15	2K20/BT/13	Arpit Kumar
16	2K20/BT/14	Ashley Jain
17	2K20/BT/15	Ashutosh Chauhan
18	2K20/BT/16	Ayush Kumar
19	2K20/BT/17	Ayush Chaudhary
20	2K20/BT/18	Deep Sagar
21	2K20/BT/19	Dhruvi Jajoria
22	2K20/BT/20	Gourav Kumar
23	2K20/BT/21	Hariom
24	2K20/BT/22	Harsh Batra
25	2K20/BT/23	Himanshi Pal
26	2K20/BT/24	Ishan Tanwar
27	2K20/BT/25	Ishi Thakur
28	2K20/BT/27	Kanjam Manocha
29	2K20/BT/28	Karamveer Kaur
30	2K20/BT/29	Kartikey Verma
31	2K20/BT/30	Kunal Basumatari
32	2K20/BT/31	Kunal Dugar

S. No.	Roll. No.	Name
33	2K20/BT/32	Mayank Lekhwani
34	2K20/BT/33	Mohd. Saif
35	2K20/BT/34	Naman Daga
36	2K20/BT/35	Nilesh Yadav
37	2K20/BT/37	Nishtha Jain
38	2K20/BT/38	Noel Joesph Saji
39	2K20/BT/39	Parth Bhardwaj
40	2K20/BT/40	Parth Tyagi
41	2K20/BT/41	Prabal Kishore
42	2K20/BT/42	Pranav Kalia
43	2K20/BT/43	Pratham Grover
44	2K20/BT/44	Rachael Kabichi
45	2K20/BT/46	Rashi Sharma
46	2K20/BT/47	Rhythm Bansal
47	2K20/BT/48	Ritika Saha
48	2K20/BT/49	Sahil Kumar
49	2K20/BT/50	Saif Ali
50	2K20/BT/52	Sakshi Mohta
51	2K20/BT/53	Sanvidhi Singh
52	2K20/BT/54	Sanyam Jain
53	2K20/BT/55	Sarthak Banerjee
54	2K20/BT/56	Sarthak Bhardwaj
55	2K20/BT/57	Sehar Sharma
56	2K20/BT/58	Shivam Bilandi
57	2K20/BT/59	Shivam Oberoi
58	2K20/BT/60	Shweta
59	2K20/BT/61	Sirjana Singh
60	2K20/BT/62	Smriti Marjara
61	2K20/BT/63	Sourav Kumar
62	2K20/BT/64	Suvani Rohatgi
63	2K20/BT/65	Tiya Verma
64	2K20/BT/66	Tungalan Ganbaatar
65	2K20/BT/67	Udit Jain

S. No.	Roll. No.	Name
66	2K20/BT/68	Utkarsh
67	2K20/BT/69	Vanshika
68	2K20/BT/70	Virein Harjani
69	2K20/BT/71	Yugank Gupta
70	2K20/BT/72	Yukti Varshney
71	2K21/BT/501	Abhishek Govil
72	2K21/BT/503	Manish Kumar
73	2K21/BT/504	Sahil Verma
74	2K21/BT/505	Divyanshu Sharma
75	2K21/BT/506	Aaryan Vijay Kumar
76	2K21/BT/507	Ekta Jha
77	2K21/BT/508	Sharvari Rajendra Ainapure
78	2K21/BT/509	Krishana Joshi
79	2K21/BT/510	Rishita
M.Tech. BIOINFORMATICS		
1	2K22/BIO/01	Aastha Kaushik
2	2K22/BIO/02	Monica Joshi
3	2K22/BIO/03	Pratik
4	2K22/BIO/05	Sunny Chaudhary
5	2K22/BIO/06	Tanvika Gupta
6	2K22/BIO/07	Yagyesh Kapoor
M.Sc. BIOTECHNOLOGY		
1	2K22/MSCBIO/02	Abhishek Raj
2	2K22/MSCBIO/03	Aditi Singh
3	2K22/MSCBIO/05	Akanksha Sahu
4	2K22/MSCBIO/07	Anamika
5	2K22/MSCBIO/08	Ananya Chugh
6	2K22/MSCBIO/09	Anistha
7	2K22/MSCBIO/10	Anjali Roy
8	2K22/MSCBIO/11	Ankita Yadav
9	2K22/MSCBIO/13	Arif Khan
10	2K22/MSCBIO/14	Ashish
11	2K22/MSCBIO/15	Ayushi Gupta
12	2K22/MSCBIO/16	Ayushi Singh
13	2K22/MSCBIO/17	Deeksha Pandey
14	2K22/MSCBIO/18	Garima
15	2K22/MSCBIO/20	Himani Joshi

S. No.	Roll. No.	Name
16	2K22/MSCBIO/21	Ishika
17	2K22/MSCBIO/22	Jaspreet Kaur
18	2K22/MSCBIO/25	Kuhoo Sarkar
19	2K22/MSCBIO/27	Lunsanglien Haokip
20	2K22/MSCBIO/29	Moin Khan
21	2K22/MSCBIO/32	Nancy
22	2K22/MSCBIO/34	Nishant Kumar
23	2K22/MSCBIO/35	Pallavi
24	2K22/MSCBIO/36	Parneet Kaur
25	2K22/MSCBIO/37	Pooja
26	2K22/MSCBIO/38	Prachi Pannu
27	2K22/MSCBIO/39	Prafful Kumar Meena
28	2K22/MSCBIO/41	Riya Rai
29	2K22/MSCBIO/43	Sakshi Shyamala
30	2K22/MSCBIO/44	Sanya Arora
31	2K22/MSCBIO/45	Sejal Dogra
32	2K22/MSCBIO/46	Shikha Kadyan
33	2K22/MSCBIO/47	Shivani Srivastava
34	2K22/MSCBIO/48	Smriti Raina
35	2K22/MSCBIO/49	Suman
36	2K22/MSCBIO/50	Suprati Singh
37	2K22/MSCBIO/51	Supriya Singh
38	2K22/MSCBIO/52	Surbhi Verma
39	2K22/MSCBIO/53	Tanisha Shekhawat
40	2K22/MSCBIO/54	Vanshika Choudhary
41	2K22/MSCBIO/55	Varsha
42	2K22/MSCBIO/56	Yogita Tomer
43	2K22/MSCBIO/57	Ashima
44	2K22/MSCBIO/58	Ishita Sehgal
45	2K22/MSCBIO/59	Anjali Sharma
46	2K22/MSCBIO/60	Taneem Alam
47	2K22/MSCBIO/61	Nisha Saini
48	2K22/MSCBIO/62	Kanchan Kumari
49	2K22/MSCBIO/63	Anchal Bansal
50	2K22/MSCBIO/64	Divya
51	2K22/MSCBIO/65	Surbhi
52	2K22/MSCBIO/66	Anjali Sharma

Student Achievers in National Level Competitive Examinations (2024)

With great pride, the department recognizes the exceptional accomplishments of students who have qualified top national-level competitive exams in 2024:

- **Joint CSIR – UGC NET / JRF** - Yuvraj Sharma (24/PHDBT/02), Ram Avtar Singh (23/MSCBIO/40)
- **GATE**- Sanyam Jain (2K20/BT/54), Suvani Rohatgi (2K20/BT/64), Shreesh Kumar Shukla (2K21/BT/37)
- **BET (Category I)** - Sanyam Jain (2K20/BT/54), Suvani Rohatgi (2K20/BT/64)
- **IIT-JAM** - Sanyam Jain (2K20/BT/54)
- **GAT-B** - Himanshi Pal (2K20/BT/23)
- **XAT** - Aayush Garg (2K20/BT/02)



We proudly announce that our newly admitted students also have a strong track record of achievements in 2024:

- **Joint CSIR – UGC NET / JRF** - Monika Yadav (24/PHDBT/07)
- **GATE** - Yuvraj Sharma (24/PHDBT/02), Mayank Singh (24/BIO/01); Harshita Arya (24/BIO/04); Danish Vlj (24/MSCBIO/02); Lakshay Virmani (24/MSCBIO/11); Tanishka (24/MSCBIO/59); Priyanka Parmar (24/MSCBIO/25); Khushi Kumari (24/MSCBIO/17)
- **IIT-JAM** - Lakshay Virmani (24/MSCBIO/11)
- **GAT-B** - Lakshay Virmani (24/MSCBIO/11)



Yuvraj Sharma
(24/PHDBT/02)



Ram Avtar Singh
(23/MSCBIO/40)



Sanyam Jain
(2K20/BT/54)



Suvani Rohatgi
(2K20/BT/64)



Shreesh Kumar Shukla
(2K21/BT/37)



Himanshi Pal
(2K20/BT/23)



Aayush Garg
(2K20/BT/02)



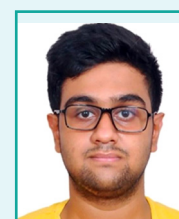
Monika Yadav
(24/PHDBT/07)



Mayank Singh
(24/BIO/01)



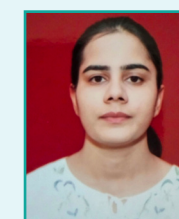
Harshita Arya
(24/BIO/04)



Danish Vlj
(24/MSCBIO/02)



Lakshay Virmani
(24/MSCBIO/11)



Tanishka
(24/MSCBIO/59)



Priyanka Parmar
(24/MSCBIO/25)



Khushi Kumari
(24/MSCBIO/17)

More About Student Success in Technology and Beyond



Student	Details
Katyayani Agarwal (2K21/BT/16)	Worked as Mitacs Graduate Research Intern in the Department of Microbiology and Immunology, Life Sciences Center, University of British Columbia (UBC), Vancouver, Canada. Her work focussed on <i>Rhodobacter capsulatus</i> gene transfer agents (RcGTA) and involved investigating the interactions between RcGTA head spike and tail fiber proteins with extracellular oligosaccharide receptors on <i>R. capsulatus</i> using histidine tagging (May 29, 2024 – August 20, 2024)
Muskaan Jasraj (2K21/BT/20)	Completed internship on Latest Advances in Genetic Testing at Genetic and Genome Sequencing Laboratory of MAMC and Lok Nayak Hospital, New Delhi under the supervision of Cytogeneticist, Dr. Sunil Kumar Polipalli (June 18, 2024 – August 10, 2024)
Raman Aind (2K21/BT/28)	Worked in Plant RNA Biology Laboratory, National Institute of Plant Genome Research, New Delhi under the supervision of Scientist, Dr. Shiv Kumar Meena. He acquired skills in various techniques related to Plant Molecular Biology and Biotechnology (June 2024 – August 2024)
Shivam Raju (2K21/BT/36)	Worked as Data Analyst and Molecular Research Intern at Rajiv Gandhi Cancer Institute and Research Center, Delhi. He tested a new NucleoSnap cfDNA kit and worked on Soft Tissue Sarcoma (STS) database meta data analysis project (May 2024 – October 2024)
Nishant Sahdev (2K20/BT/36)	Authored a column titled 'SN Bose's Imprint on the World of Modern Physics' to commemorate the centenary celebration of Bose-Einstein Statistics, featured in the Hindustan Times on November 21, 2024; https://www.hindustantimes.com/opinion/sn-bose-s-imprint-on-the-world-of-modern-physics-101732112700040.html ; Participated in National Conference on Biotechnology for Sustainable Environment, Agriculture, Health, Biodiversity and Industry (BIOTECH-2024) jointly organized by National Environmental Science Academy, New Delhi and Gujarat Biotechnology University, Gandhinagar, April 22-23, 2024. The title of his presentation was 'Decoding the genetic enigma machine learning based classification of resistant and susceptible phenotypes of <i>Candida</i> genomes'
Shivani (2K22/BT/516)	Completed internship on Latest Advances in Genetic Testing at Genetic and Genome Sequencing Laboratory of MAMC and Lok Nayak Hospital, New Delhi under the supervision of Cytogeneticist, Dr. Sunil Kumar Polipalli (June 18, 2024 – August 10, 2024)
Karanbir Singh Pahwa (2K22/BT/18)	Worked as Gen AI Summer Trainee at Maruti Suzuki India Ltd. His project title was TensAI, AI IP Cluster Inspection, Research on GEO, Analyst AI (July 10, 2024 – August 9, 2024)
Anushka Goswami (2K22/BT/06)	Carried out internship at RayLab, IIITD. She presented the report on 'Understanding the phylogenetic and structural differences between CRISPR-Cas9 orthologs' (May 20, 2024 – July 31, 2024)

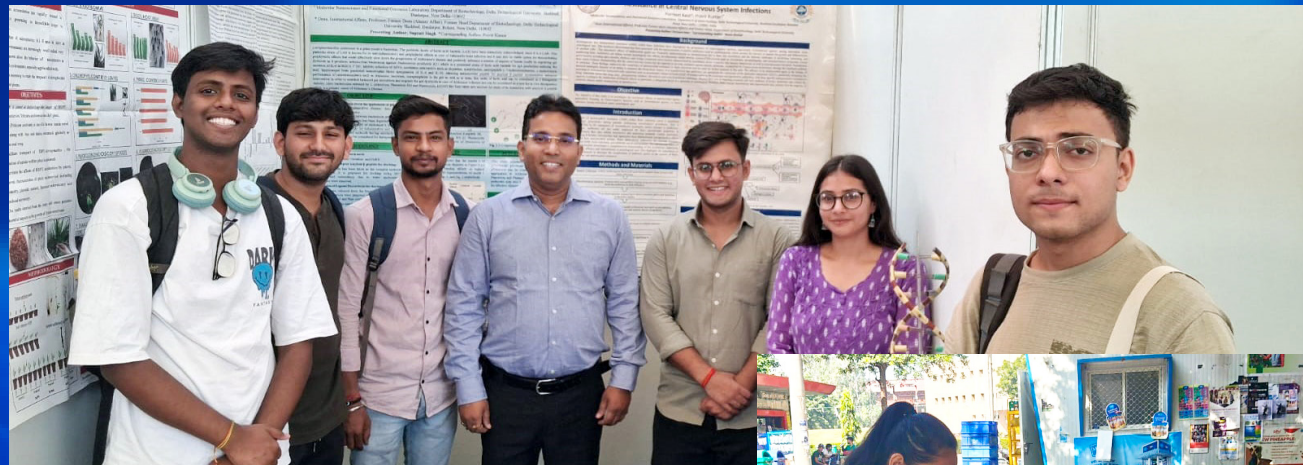
Student	Details
Himika (2K22/BT/13)	Completed internship at the Department of Biochemical Engineering and Biotechnology, IIT Delhi. She worked in a project entitled 'Growth and Product Profiling of a Lactic Acid Producing Engineered Strain' under the supervision of Dr. Ashish Misra (May 15, 2024 -August 14, 2024)
Kashish Kumari (2K22/BT/20)	Worked on a project titled 'Fogg' at Kwik Prints Pvt. Ltd., Rajasthan. The project aimed to launch a theme-based promotion for the Fogg deodorant. As a part of the project she designed various banners, leaflets according to the design briefs and promo specifications. (May 20, 2024 – July 5, 2024)
Kushagra Shrivastava (2K22/BT/25)	Successfully completed 'IX Summer Internship Programme in Environmental Epigenetics (SIPEE)' organized by the Division of Environmental Biotechnology, Genetics & Molecular Biology, ICMR-National Institute for Research in Environmental Health (NIREH), Bhopal (June 12-28, 2024; certificate received in July)
Prayas Pandey (2K22/BT/31)	Offered Business Analyst Intern at Maargam AI Technologies Pvt. Ltd. She was responsible for optimizing data management, designing database schemas, and enhancing business processes through data analysis and stakeholder collaboration (May 2024 – July 2024); Selected as Campus Director, Millenium Fellow, Class of 2024 at Millennium Campus Network (August 2024 – November 2024)
Rahul Prajapati (2K22/BT/35)	Successfully completed internship at API R&D Fermentation Department in Biocon Ltd. (June 3, 2024 – August 2, 2024)
Ritwik Mathur (2K22/BT/38)	Selected as Postman API Fundamentals Student Expert, proficient in the essential skills required for consuming APIs in Postman and applications (September 1, 2024); Received Google Cloud Computing Foundations Certificate issued by Google Cloud for developing technical proficiency in cloud computing. This proficiency opened diverse career paths including those in IT infrastructure, cloud engineering, and cloud-native application development (September 2, 2024); Contributed to GirlScript Summer of Code Extended, an Open-Source program by GirlScript Foundation (October 1, 2024 – October 30, 2024)
Shyam Sunder (2K22/BT/52)	Completed internship on 'A Comprehensive Study in AI in Healthcare Using Machine Learning' at Complex Systems and Genome Informatics Lab, Department of Biotechnology, Delhi Technological University under the supervision of Prof. Yasha Hasija (June 21, 2024 – July 31, 2024)
Soham Sheemar (2K22/BT/53)	Completed summer internship in Bioinformatics Division, NMC Genetics India Pvt. Ltd. He worked on the 'Machine Learning Aspects of Pharmacogenomics and Post Whole Exome Processing of Human Genome Data' project under the guidance of Scientist, Dr. Varun Sharma (May 27, 2024 - July 29, 2024)
Soumya Singh (2K22/BT/54)	Worked in Clinical Pharmacology and Pharmacokinetics Department, R & D Center, Sun Pharma Industries Ltd., Gurugram, Haryana (July 2, 2024 - July 31, 2024)
Tarush Arya (2K22/BT/59)	Worked as Research Intern, DTU in the field of AI in Healthcare (June 21, 2024 – July 31, 2024)
Ammar Ali Khan (2K23/BT/503)	Worked as a trainee at the ICMR-DHR – Multidisciplinary Research Unit (MRU), Department of Anatomy, Institute of Medical Sciences, Banaras Hindu University, Varanasi. He worked in the Molecular Diagnostic Unit and learnt various techniques (July 15, 2024 – August 14, 2024)

Student	Details
Ketan Rajora (2K23/BT/505)	Worked as Research Intern at Center for Fire, Explosive and Environment Safety (CFEES), DRDO on the topic 'Hands on Training on Instruments and Microbial Techniques for Pollutant Treatment' (May 27, 2024 – July 29, 2024)
Alvish Reuben Johnson (23/BT/83)	Fetched experience of corporate businesses by partnering with a gym franchise (KGN Fitness, Mirzapur). He designed and hosted their website for marketing (www.kgnfitness.in); Front-end Web Developer; Holds many positions at DTU: Co-Head at E-Cell DTU; Co-Head at Yuvaan, Literature & Film Fest, DTU; Guitarist at R3PRESENT DTU; Member, Technical & Design Team BioSoc-DTU; Member, Creative Team, DTU Cultural Council; Mentor, STEP DTU; Corporate Executive, ASME-DTU Student Section; Client Acquisition, DTU Consulting Group
Komaragiri Nikhil (22/MSCBIO/24)	Offered a position of Content Intern at Silverlabs India Pvt. Ltd., Telangana (November 2024)
Aashi Barwal (23/MSCBIO/01)	Completed internship on the topic Animal Handling, Histopathology and Biochemical Parameters in SD Rats (Combined Radiation Injury Studies) under the supervision of Scientist F, Dr. PK Agrawal at INMAS-DRDO (June 6, 2024 – August 7, 2024); Participated in Mikrovitae'24 organized by Mikrobiologika, Department of Microbiology, Ram Lal Anand College, University of Delhi, February 15, 2024. She presented a poster on 'Gene therapy' and won 1 st prize
Lakshay Virmani (24/MSCBIO/11)	Received Gold Medal for securing 1 st position in B.Sc. Biotechnology from Chaudhary Charan Singh University, Meerut (August 2024)
Akanksha (24/MSCBIO/15)	Completed 30-days Biopractify's online Skill Development Program in Bioinformatics and Data Analytics (August 15, 2024 – September 15, 2024) Successfully completed an online non-credit Coursera course authorized by University of California San Diego (August 10, 2024); Attended Hands-on Training on Aeroponics, Hydroponics, Landscaping and Vertical Gardening organized by Department of Botany, Zakir Hussain College, University of Delhi (November 8-9, 2024)
Yogita Bhatt (23/BIO/11)	Participated in '15 th IEEE International Conference on Computing Communication and Networking Technologies (ICCCNT)' organized in hybrid mode by IIT Mandi, Himachal Pradesh, June 24-28, 2024. Her presentation title was 'Comprehensive review of machine learning approaches for analysing EEG-based neurological disorders'
Devanshi Sharma (23/BIO/05)	Participated in 2 nd International Conference on VLSI & Microwave and Wireless Technologies organized by Department of Electronics and Communication Engineering, Madan Mohan Malaviya University of Technology, Gorakhpur, May 17-18, 2024. Her presentation title was 'HLA class II antigen presentation prediction via microarray assays, LC-MS, and integrated deep learning'. She was declared the top presenter in session 10
Shubhika (24/IBT/10)	Attended workshop on 'Revolutionizing transportation: the role of renewable fuels and engine tribology' organized by Mechanical Engineering Department, Delhi Technological University. Won 1 st prize in a competition held during the workshop (October 23-25, 2024)
Pradeep Patel (24/IBT/12)	Attended workshop on 'Revolutionizing transportation: the role of renewable fuels and engine tribology' organized by Mechanical Engineering Department, Delhi Technological University. Won 1 st prize in a competition held during the workshop (October 23-25, 2024)

Student Participation in NSS Activities in 2024



Activity	Students
Samridhi: Flourishing Through Education - A panel discussion on the transformative power of education in empowering women and fostering child development. The session inspired actionable steps for achieving gender equity and societal growth (January 19, 2024)	Katyayani Agarwal (2K21/BT/16)
Cancer Awareness and Palliative Care Sensitization Event – An expert talk to raise awareness about cancer prevention and the role of palliative care in improving the quality of life for patients. It emphasized empathy and support for those affected by the disease (January 24, 2024)	Katyayani Agarwal (2K21/BT/16) Kartik Kushwaha (2K21/BT/15)
Awareness Talk on Lifestyle Diseases: Role of Yoga in Health Promotion, Disease Prevention and Management – An expert talk on the impact of Yoga on health and various diseases, including glaucoma, unexplained male infertility, arthritis, depression, idiopathic recurrent spontaneous miscarriages, and polycystic ovarian syndrome (February 22, 2024)	Kartik Kushwaha (2K21/BT/15)
NSS Sanjeevani - A collaborative blood donation drive organized with an NGO to motivate the university community to contribute to saving lives. It reinforced the value of altruism and collective responsibility (October 10-11, 2024)	Zubishah Rais (24/MSCBIO/30) Insha Rizwan (24/MSCBIO/32) Kartik Kushwaha (2K21/BT/15) Katyayani Agarwal (2K21/BT/16)
Joy of Giving'24 - A donation campaign where university members contributed items (toys, books, bags, blankets, clothes, stationery, sports items) for distribution to needy individuals and students. The initiative encouraged a culture of kindness and compassion (October 23-25, 2024)	Kartik Kushwaha (2K21/BT/15) Katyayani Agarwal (2K21/BT/16) Neggat Ferdous (24/MSCBIO/44)
Open House DTU'24 - A collaborative effort with SCEE DTU to ensure the smooth organization of DTU's Open House event. The event showcased institutional achievements and created a platform for academic and cultural exchange (November 5, 2024)	Kartik Kushwaha (2K21/BT/15) Katyayani Agarwal (2K21/BT/16)
Aarohan: Rising Through Mental Wellness - A panel discussion addressing youth mental health, focusing on overcoming challenges and building resilience. Experts shared insights on emotional well-being and coping strategies for modern stressors (November 6, 2024)	Katyayani Agarwal (2K21/BT/16)
Communication Skills Workshop at Shubhakshika Educational Society - A workshop aimed at enhancing self-presentation and communication skills among underprivileged children. It emphasized the importance of understanding emotions and using impactful words in daily interactions (November 11, 2024)	Katyayani Agarwal (2K21/BT/16)
Health and Nutrition Workshop at Shubhakshika NGO - An informative session on the significance of balanced diets, macro- and micronutrients, and hygiene practices. Participants were taught proper handwashing techniques and the role of nutrition in overall health (November 12, 2024)	Katyayani Agarwal (2K21/BT/16)



Events & Visits Organized by Department

Expert Talk on Translating Biointerfaces from Benchtop to Bedside

An Expert Talk on 'Translating Biointerfaces from Benchtop to Bedside' was organized by the department on July 9, 2024 (Coordinator: Dr. Navneeta Bharadvaja).



Eminent speaker was –

- **Dr. Hitesh Handa**, Associate Professor and Distinguished Faculty Fellow, College of Engineering, University of Georgia

Dr. Hitesh provided valuable insights into translating biointerfaces from benchtop to bedside, highlighting the critical phases, challenges, and strategies involved. By leveraging interdisciplinary expertise and innovative solutions, the medical community can bridge the gap between laboratory research and clinical application, bringing cutting-edge treatments to patients in need. He highlighted the importance of collaboration, innovation, and strategic planning in making this journey successful, ultimately improving patient outcomes and advancing healthcare.



Art of Living Workshop

A workshop on 'Art of Living' was organized by the department during orientation of newly admitted students on August 1, 2024 (Coordinator: Dr. Kriti Bhandari).



Resource person was –

- **Mr. Vikas Mohan Tyagi**, Senior Manager, Partnership and Collaboration, Art of Living, Gurugram, India



The workshop aimed to train participants in techniques to achieve ideal mental state. Mr. Vikas covered various aspects of personal growth, well-being, and spiritual development. He focused on the importance of mental presence and achieving an optimal state of relaxation. He also emphasized on finding a balance between being overly relaxed and excessively hurried in our daily lives.

Motivational Speech by a Successful Entrepreneur

A session on interaction with a successful entrepreneur was organized by the department during orientation of newly admitted students on August 2, 2024 (Coordinator: Dr. Prakash Chandra).

Eminent entrepreneur was -

- **Mr. Avijit Das**, Founder Chairman, Premas Life Sciences Pvt. Ltd.

Mr. Avijit gave valuable insight into Industrial Biotechnology and shared his experiences in the field. His speech broadened the perspective of students on innovation and entrepreneurship. He provided a real-world understanding of what it takes to succeed in business by sharing his strategies for managing risk, fostering innovation, and leading teams effectively. Additionally, he offered a unique perspective on learning from failures, staying up-to-date with industry trends, and balancing personal and professional life. Students gleaned valuable insights from his personal experiences. They learnt practical lessons on overcoming obstacles, persevering through challenges, making informed decisions, adapting to change, building strong networks, and maintaining motivation. From his life's lessons, Mr. Avijit inspired the students to explore their potential, ignite their passion, and strive for success.



BioSoc-DTU's Orientation Program for Newly Admitted Students



Orientation of newly admitted undergraduate students was organized by BioSoc-DTU, official society of the department, on August 2, 2024. The newly admitted students were skillfully explained the constitution of the society, and its mission to cultivate a dynamic and intellectually stimulating environment that promotes the exchange of knowledge, pioneering innovation, collaborative endeavors among students, and empowering the next generation of biotechnologists to explore cutting-edge advancements and make significant contributions to the field.

The session showcased a wide range of activities designed to enrich both the academic and practical aspects of Biotechnology. Highlights included a glimpse into the various events organized by BioSoc-DTU in the past, demonstrating the society's commitment to fostering a vibrant community.



Interaction with Departmental Alumni

An interactive session with departmental alumni was organized by the department on August 2, 2024 during orientation of newly admitted students (Coordinator: Dr. Prakash Chandra).

Distinguished alumni were -

- **Mr. Kunal Dugar**, CEO, High Vision Technologies, LLP & Pursuing MSc Advanced Chemical Engineering with Biotechnology at Imperial College London
- **Ms. Apoorva Sharma**, Pursuing M.Tech. Biomedical Engineering, IIT, Delhi

Mr. Kunal and Ms. Apoorva presented an overview of the department, its rigorous academic programs, cutting-edge research opportunities, esteemed faculty members, access to state-of-the-art facilities, internship placements with top organizations, and a vibrant community of students. They shared their experiences at department highlighting the encouragement they received to explore their interests, develop their skills, and pursue their passion. They also motivated the newly admitted students for exciting career opportunities. They also guided the newly admitted students in clearing all their doubts regarding the field of Biotechnology, the department, exams, rules and regulations, future placement prospects, etc.



Release of First and Second Issues of BioSoc-DTU's Newsletter - The PetriDish

BioSoc-DTU's Newsletter 'The PetriDish' aims to bridge the gap between academia, industry, and the general public by delivering accurate, engaging, and up-to-date content. It aspires to ignite curiosity, provide valuable insights, and keep readers informed about the latest trends, innovations, and developments in biotechnology and serves as a medium for students, faculty, and industry professionals to connect and share ideas. The Petridish also provides a platform for showcasing the events and accomplishments of the Department of Biotechnology, DTU and BioSoc-DTU.

Key Features of The PetriDish are:

- **BioBytes:** Short and precise articles that present recent breakthroughs, discoveries, and innovations in biotechnology
- **Scientist Spotlight:** Exclusive information about renowned scientists, researchers, and industry leaders. This feature dives into their journey, work, and insights, offering inspiration and guidance for aspiring biotechnologists
- **Feature Focus:** Comprehensive analyses of pivotal biotechnological topics, shedding light on complex concepts, current challenges, and emerging trends in the field
- **Event Coverage:** Reports and highlights from workshops, conferences, and other events organized by BioSoc-DTU and the Department of Biotechnology, DTU



The PetriDish was officially unveiled to the public on August 13, 2024 with a launch campaign across social media platforms like Instagram and LinkedIn. The first issue featured the latest breakthroughs in biotechnology, highlights from community events in Invictus Fest, spotlight on Alois Alzheimer, review article on Lilly's new Alzheimer drug, and Biobytes on cutting-edge research from around the world. This launch marked a significant milestone in the society's journey to build a vibrant community of biotechnology enthusiasts, providing a platform to share knowledge, foster collaboration, and promote awareness about the field's dynamic advancements. Second issue was released on December 30, 2024. Scientist spotlight on Richard Mooney and Feature Focus on Brainwave noise cancellation – a game changer for better sleep were its main attractions.



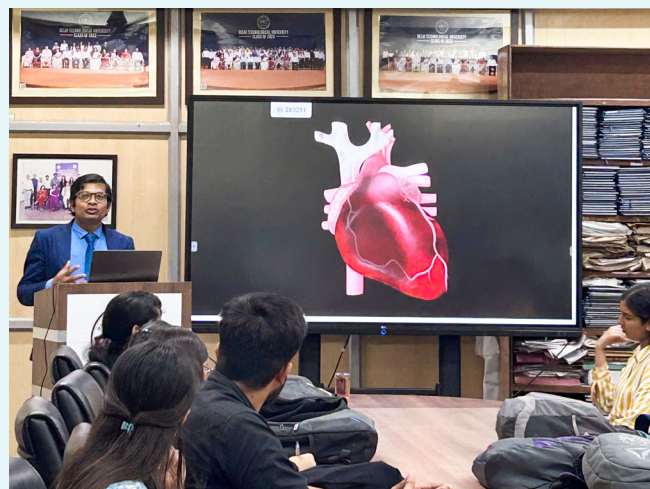
Expert Talk on Stem Cell System and Longevity

A talk on 'Stem Cell System and Longevity' was organized by the department on September 4, 2024 (Coordinator: Prof. Jai Gopal Sharma).

Eminent expert was –

- **Dr. Shibashish Giri**, Chief Scientific Officer (AB Company, UK, USA), Adjunct Professor, MIPT, Moscow, Russia

Dr. Shibashish shed light on the vital connection between stem cell systems and longevity, revealing how stem cells play a central role in maintaining tissue health and regeneration. As we age, our stem cell reserve dwindles, leading to decreased cellular function and increased susceptibility to disease. The speaker emphasized that longevity is influenced by a complex interplay of stem cell function, genetics, lifestyle, and environmental factors. Cutting-edge research in stem cell biology holds immense potential to promote healthy aging and longevity, and the speaker urged further exploration in this field to unlock its full potential and improve human health and lifespan.



3 GOOD HEALTH AND WELL-BEING



4 QUALITY EDUCATION



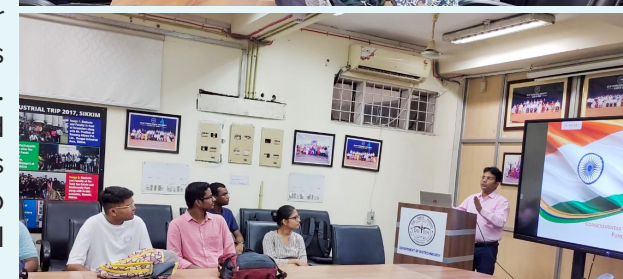
Seminar on Consciousness Toward National Identity, Fundamental Rights & Duties

On September 9, 2024, a seminar was organized with the objective of fostering awareness and appreciation amongst students regarding National Identity, Fundamental Rights, and Duties.

Eminent speaker was –

- **Dr. Prakash Chandra**, Assistant Professor, Department of Biotechnology, Delhi Technological University

Dr. Prakash delivered a thought-provoking seminar, which captivated attendees with its insightful exploration of the intricate relationship between individual awareness and collective identity. He emphasized the importance of consciousness in shaping national identity, arguing that a deeper understanding of one's rights and responsibilities is essential for fostering a cohesive society. Through engaging discussions and real-world examples, Dr. Chandra highlighted how awareness of fundamental rights can empower citizens to actively participate in democracy, promoting social justice and unity.



16 PEACE, JUSTICE AND STRONG INSTITUTIONS



Celebration of 20 Years of Excellence and Alumni Meet

The Department of Biotechnology completed its 20 glorious years in 2024. To mark this major milestone, the department celebrated 20 Years of Excellence on September 20, 2024. Two decades of dedication, perseverance, and passion have brought the department to where it is today. Over the past two decades, the department has achieved remarkable milestones, pushed boundaries, and made a lasting impact in the society. The department has grown and evolved, always striving for excellence and innovation.

As part of the celebration of 20 years, the department also hosted an Alumni Meet, bringing together former students who have been an integral part of the department (Coordinator: Dr. Asmita Das; Co-coordinator: Dr. Prakash Chandra).

The alumni meet was a wonderful opportunity to reconnect, reminisce, and rekindle old friendships. The excitement was palpable as alumni from various batches shared stories of their time, remembering the challenges they overcame, the triumphs they achieved, and the memories they created. It was heartwarming to see how their experiences had shaped them into the successful individuals they are today. The alumni meet also provided a platform for departmental alumni to give back, sharing their expertise and insights with current students and faculty members.

As the department celebrated its 20 years, the alumni meet was a poignant reminder of the impact the department had on so many lives. The department is proud of its alumni and the incredible contributions they have made to their respective fields.

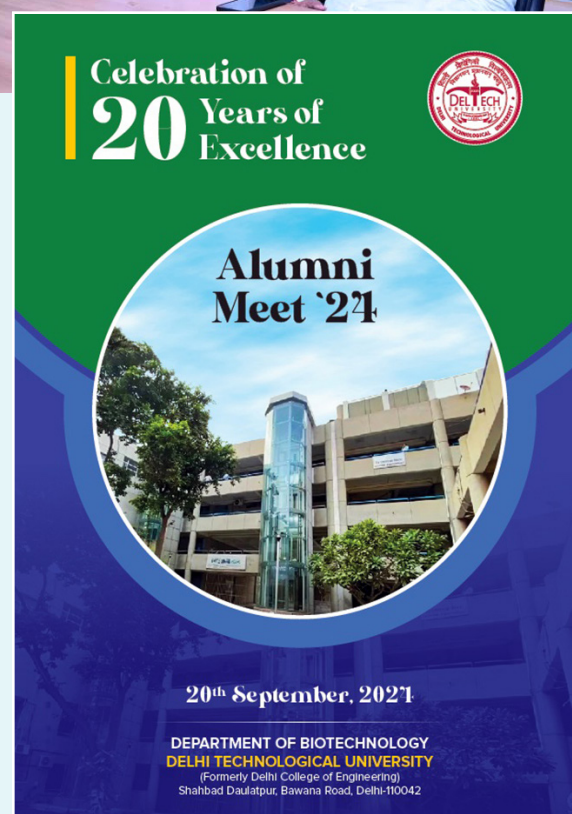


17 PARTNERSHIPS FOR THE GOALS





To commemorate this milestone occasion, the department proudly released a souvenir booklet titled 'Celebration of 20 Years of Excellence and Alumni Meet', edited by Dr. Smita Rastogi Verma and Dr. Prakash Chandra. This meticulously crafted booklet provided glimpses of a nostalgic journey through the department's 20 glorious years, highlighting its remarkable achievements and the outstanding successes of its esteemed alumni.



Interaction with an Industry Expert

An interactive session with 'The Catalysts Group Pvt. Ltd.' was organized by BioSoc-DTU on September 13, 2024.

Resource person was –

- **Dr. VTS Pavan Kumar Kavuluru**, VP, R&D, Catalysts Group Pvt. Ltd.

Catalysts Group Pvt. Ltd. is a leading Biotechnology Company committed to providing innovative and sustainable enzyme-based solutions to industries across India and developing economies. Dr. Kavuluru in his session comprehensively explained the working of his company, industries they serve with their enzyme-based solutions and the immense savings offered by their products to these companies. Dr. Kavuluru in particular focused on the three main areas of specialization of the Catalysts Group: sugarcane processing, distilling & brewing and biogas production.



Creation of LinkedIn Page of the Department



A LinkedIn page of the department was created on September 25, 2024. The page is regularly updated and it provides a platform for sharing departmental activities, achievements, and job opportunities, etc. The page enhanced the visibility of department to a global audience and enabled networking and collaboration.



Visit to Research Organization - IGIB

A visit to Institute of Genomics and Integrative Biology (CSIR-IGIB) was organized by BioSoc-DTU on September 30, 2024.

Biotechnology students embarked on an enriching visit to IGIB, immersing themselves in cutting-edge Genomics and Biotechnology research. The interactive tour enabled students to engage with researchers, explore innovative projects, and witness the practical applications of foundational concepts. They gained valuable insights into various labs, including Genomics, Bioinformatics, Plant Biotechnology, and Animal Biotechnology, and learnt sophisticated techniques and instrumentation. The visit highlighted the importance of interdisciplinary research collaborations and inspired students to explore diverse career paths. By engaging directly with scientists, students deepened their appreciation for addressing global challenges through cutting-edge research, and were motivated to pursue their interests with greater fervor.



Visit of Students of Sri Aurobindo College, DU to the Complex Systems and Genome Informatics Facility of the Department

A visit of ~25 B.Sc. students of Sri Aurobindo College, University of Delhi, led by faculty member Dr. Anil Mavi, to the Complex Systems and Genome Informatics facility of the department was organized on October 8, 2024 (Coordinator: Prof. Yasha Hasija).

The visit provided an in-depth look at the cutting-edge research being conducted in the lab, particularly in the areas of molecular docking, molecular dynamics (MD) simulation, and the application of machine learning in bioinformatics.

During the visit, the students were introduced to key projects utilizing advanced computational tools such as AutoDock for molecular docking and GROMACS for MD simulations to predict molecular interactions and simulate biological processes. In the area of machine learning, the lab builds its own models using Python, which are employed to analyze complex biological datasets. The interactive session allowed students to engage with Ph.D. scholars working on these innovative approaches, fostering a deeper understanding of how such methods are shaping modern biological research.

The tour concluded with a hands-on demonstration of the lab's technologies, including an overview of the computational infrastructure. The facility houses 8 PCs, each equipped with Intel i7 8th generation processors, 8GB RAM, 1TB HDD, and 2GB Graphics cards, offering students practical insights into the application of these techniques. The visit was a great success, sparking potential for future academic collaborations between the institutions.



Bioconclave'24 – Theme: Biotechnology for Economy, Employment and Environment: Opportunities and Challenges



Bioconclave'24 on the theme 'Biotechnology for Economy, Employment and Environment: Opportunities and Challenges' was organized by the department on October 15, 2024 (Convener: Dr. Navneeta Bharadvaja, Co-conveners: Dr. Smita Rastogi Verma and Dr. Kriti Bhandari).

The Bioconclave'24 drew inspiration from the groundbreaking 'BioE3' initiative, a pioneering bioeconomy policy unveiled by the Government of India on August 24, 2024. This innovative policy seeks to leverage Biotechnology to foster economic prosperity, environmental stewardship, and job creation, paving the way for a thriving bio-based economy.

The inaugural session was presided over by Hon'ble Vice Chancellor, Prof. Prateek Sharma. The session commenced with the Welcome Address by Prof. Yasha Hasija, Head, Department of Biotechnology and Opening Remarks by Convener, Dr. Navneeta Bharadvaja.

Eminent speakers and the titles of their talks were –

- **Dr. Gulshan Wadhwa**, Advisor and Scientist G, Department of Biotechnology, Ministry of Science & Technology, New Delhi
 - **Title of talk:** Aspects of BioE3 which aims for Economy, Employment, and Environment in Biotechnology

- **Dr. Sonal Saxena**, Director, Professor & Head, Department of Microbiology, Maulana Azad Medical College, New Delhi; WHO Fellow on Antimicrobial Resistance; Secretary, Indian Association of Medical Microbiologists
 - **Title of talk:** Translating Innovation in Diagnostics: Challenges and Opportunities
- **Dr. G.P.S. Raghava**, Professor & Head, Department of Computational Biology, Indraprastha Institute of Information Technology (IIIT-Delhi)
 - **Title of talk:** Application of Computational Biology in Biomedical Field
- **Dr. Sonika Bhatnagar**, Professor and Head, Department of Biological Sciences and Engineering, Netaji Subhas University of Technology (NSUT), New Delhi
 - **Title of talk:** Biotechnology in Healthcare: New Frontiers for Industry, Research and Employment
- **Dr. Neel Sarovar Bhavesh**, Group Leader, Transcription Regulation, International Centre for Genetic Engineering and Biotechnology (ICGEB), New Delhi
 - **Title of talk:** Biotechnology for Viksit Bharat@2047
- **Dr. Gitanjali Yadav**, Staff Scientist VI, National Institute of Plant Genome Research (NIPGR); Prof. (Adjunct) Data Science, IISER Bhopal; Cofounder #semanticClimate
 - **Title of talk:** Transforming India's New BioE3 with BioAI
- **Ms. Sakshi Gupta**, Associate Director, Commercial Sales and Strategy, EU Region, Biocon
 - **Title of talk:** Pharma Industry - International Business Strategies, Marketing and Management

The talks delivered by esteemed speakers provided a deeper understanding of the dynamic interplay between biotechnology and society. The expertise of speakers illuminated the vast opportunities and pressing challenges within this field, inspiring the participants to think critically about how biotechnology can drive economic growth, create employment, and promote environmental sustainability. Overall, the talks provided a comprehensive understanding of transformative role of biotechnology in shaping a sustainable future, its vast potential for growth and innovation, and steps towards green, clean and prosperous India.



Curriculum Design Workshop

A workshop on 'Curriculum Design' was organized by the department on October 22, 2024 (Coordinator: Dr. Asmita Das).

The aim of workshop was to initiate the process of curriculum design and revision, for the express purpose of designing employability-oriented courses in M.Tech. programs and exploring the potential of long-term Industry-Academia interaction with the department.

The workshop on curriculum design brought a rich expertise and perspectives to enhance the curriculum designing process. Multidisciplinary stalwarts, including Policy Makers, Experts from Govt. Funding Agencies, Premier Academic Institutions, Research Organizations, Industries, and Non-Government (non-profit) Organizations were invited.

Hon'ble Vice Chancellor, Prof. Prateek Sharma graciously consented to inaugurate the program. Prof. Yasha Hasija, Head, Department of Biotechnology delivered the welcome address and Dr. Asmita Das presented the M.Tech. curriculum.

Invited experts were -

- **Prof. Amulya Panda**, Associate Director, Panacea Biotech Ltd.; Former Director, National Institute of Immunology, New Delhi
- **Prof. N. Raghunathan**, Professor and Head, Centre for Sustainable Nitrogen and Nutrient Management, Guru Gobind Singh Indraprastha University, New Delhi
- **Prof. Atul Narang**, Biochemical Engineering and Biotechnology, Indian Institute of Technology Delhi
- **Prof. Anushree Gupta**, Head, Department of Biotechnology, All India Institutes of Medical Sciences, New Delhi
- **Prof. Sanjay Kapoor**, Head, Department of Plant Molecular Biology, University of Delhi
- **Prof. Arvind Kapur**, Director, Deakin Nanotechnology Centre, TERI
- **Prof. Samudralaya Gaurinath**, Professor, School of Life Sciences, Jawaharlal Nehru University, New Delhi
- **Dr. Manish Diwan**, Head, Strategic Partnership & Entrepreneurship Development & Make in India Facilitation Cell for Biotech Sector, BIRAC, New Delhi
- **Prof. Andrew Lynn**, Professor, School of Computational and Integrative Sciences, Jawaharlal Nehru University, New Delhi
- **Prof. Dinesh Gupta**, Group leader, Translational Bioinformatics, International Centre for Genetic Engineering and Biotechnology, New Delhi
- **Prof. Sabhyata Bhatia**, Scientist, National Institute of Plant Genome Research, New Delhi
- **Dr. P.K Rajput**, Professor of Practice, Mewar University; Former Sr. VP, Sales & Marketing, Cadila Pharmaceuticals Ltd.
- **Prof. Suchita Ninawe**, Scientist, Information Systems Biology, Department of Biotechnology (DBT), Govt. of India, New Delhi



- **Prof. Ranjan Nanda**, Group leader, Translational Health, International Centre for Genetic Engineering and Biotechnology, New Delhi
- **Prof. Anandita Singh**, Department of Biotechnology, TERI School of Advanced Studies, New Delhi
- **Mr. Rupinder Singh**, Chief Operating Officer, UnivLabs Technologies Pvt. Ltd.



The speakers emphasized the need for a student-centered approach in curriculum design, focusing on developing essential skills such as critical thinking, problem-solving, and communication. They suggested incorporating real-world examples and case studies to make learning more relevant and engaging, and ensure relevance and alignment with industry needs. They also stressed the value of incorporating soft skills, such as teamwork and time management, and using technology to enhance the learning experience. The inclusion of courses on analytical aspects, entrepreneurship, data analysis, regulatory requirement in the syllabi of M.Tech. Bioinformatics and Industrial Biotechnology was suggested. Furthermore, the speakers encouraged the use of project-based learning, internships, and mentorship programs to provide students with practical experience and networking opportunities.

Visit of Officials from Forensic Research Laboratory

Forensic Research Laboratory at Delhi caters to the need of investigating agencies, i.e., Delhi Police and various other law enforcement agencies in NCT of Delhi by scientific forensic examination / analysis of crime exhibits collected from the crime spot and thus plays an important role in qualitative justice delivery system.

On November 22, 2024, a delegation of officials from FSL visited the department to explore potential collaboration opportunities. During their visit, they engaged in fruitful discussions with faculty members and toured the state-of-the-art laboratories. Additionally, the officials aimed to identify talented student interns to assist with case examination work, both in-lab and at crime scenes, fostering a unique learning experience and promoting mutually beneficial cooperation.



AICTE-ATAL Sponsored FDP on Healthcare and MedTech: Innovations, Challenges and Future Directions



The healthcare and medical technology sectors are undergoing transformative changes, driven by innovations in diagnostics, therapeutics, and patient management. To address this evolution, a 6-day online Faculty Development Program (FDP) on 'Healthcare and MedTech: Innovations, Challenges and Future Directions' was organized by the department from December 9-14, 2024 to equip faculty members, Ph.D., and M.Tech. students with in-depth knowledge of the latest advancements in healthcare and medical technology. The program was sponsored by AICTE Training & Learning Academy (ATAL) (Coordinator: Dr. Navneeta Bharadvaja, Co-coordinator: Dr. Asmita Das).

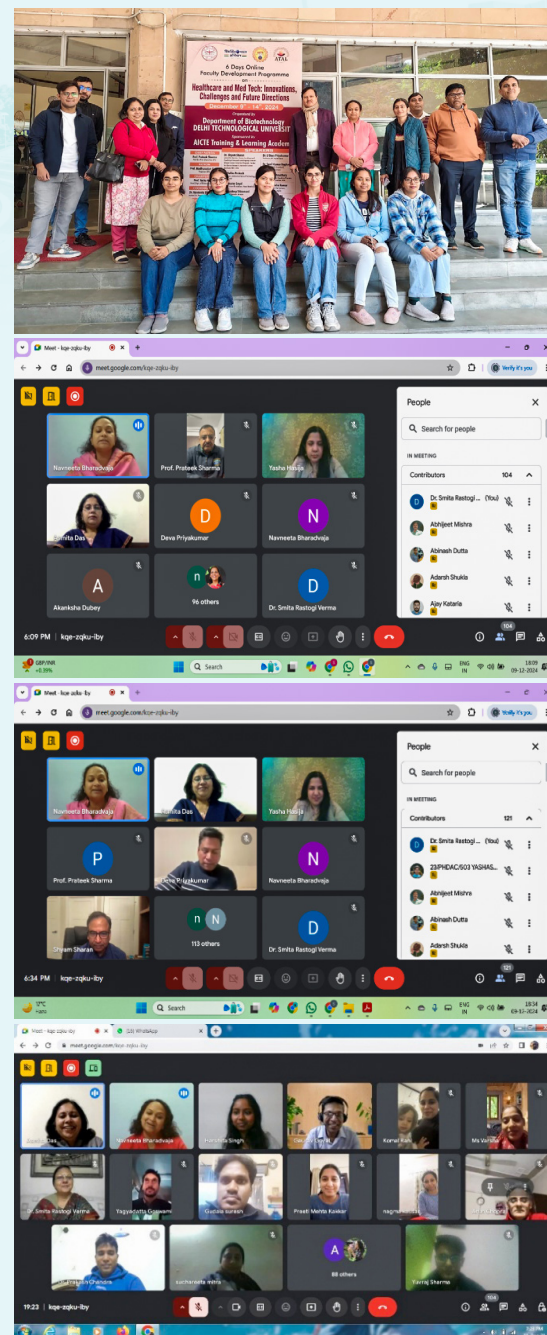
Eminent speakers and the titles of their lectures were -

- **Prof. U. Deva Priyakumar**, Professor, IIIT, Hyderabad
 - **Title of talk:** Artificial Intelligence for Molecular Design
- **Prof. Sunil Kumar Raghava**, Professor (HAG), Scientist F, BRIC-ILS, Bhubaneswar
 - **Titles of talks:** Informatics-based Healthcare in the Era of the Fifth Paradigm; Immunogenomics and Immunometabolism in Health and Disease



- **Prof. Tulika Prakash**, Chairperson and Professor, School of Biosciences and Bioengineering, IIT Mandi, Kamand, HP
 - **Title of talk:** Systems Biology and Multi-OMICs in Health Applications: Roles and Future Directions
- **Dr. Mayur Choudhary**, Principal Scientist, Ocuphire Pharma, Durham, North Carolina, USA
 - **Title of talk:** Retinal Drug Discover: Opportunities and Challenges
- **Dr. Gaurav Goyal**, Global Scientific Advisor, Novo Nordisk
 - **Title of talk:** From Academia to Pharma: How to Bridge the Gap
- **Dr. Shyam Sharan**, Scientific Director, Center for Advanced Preclinical Research and Deputy Director, Mouse Cancer Genetics Program, Center for Cancer Research, National Cancer Institute, NIH, USA
 - **Title of talk:** Functional Evaluation of Genetic Variants Using CRISPR-Cas9-based Saturation Genome Editing
- **Dr. Sandeep Shiromani**, Associate Director, Biocon
 - **Title of talk:** Process Scale Up
- **Dr. Sucheendra Kumar**, Senior Scientist, The Systems Biology Institute, Japan
 - **Title of talk:** Biome-AI-dicine: A Future with Generative AI for Biomedicine
- **Dr. Amit Chaurasia**, Associate Sales Development Manager, TsPDx, INSA at QIAGEN India Pvt. Ltd.
 - **Title of talk:** Unlocking the Potential of Circulating Cell-free DNA (cfDNA) in Oncology: Emerging Trends and Applications in Early Cancer Detection and Precision Medicine
- **Dr. Neelu Khurana**, Head of QA and NPD in House of Spices
 - **Title of talk:** Food Traceability and Transparency Using Block Chain Technology // Role of AI and Automation in Food Manufacturing
- **Dr. Sridhar Sivasubbu**, Senior Consultant, Vishwanath Cancer Care Foundation, India
 - **Title of talk:** Genomics for Public Health in India: Opportunities and Challenges
- **Prof. Jagreet Kaur**, Professor, Department of Genetics, University of Delhi
 - **Title of talk:** Advances in Genomics to Decipher the Cross Talk During Plant Pathogen Interaction

The program facilitated comprehensive discussions on pivotal topics, including artificial intelligence, genomics, systems biology, immunogenomics, cancer research, food traceability, public health, genome editing, fermentation, and plant-pathogen interaction. It empowered the participants with the latest knowledge, skills, and perspectives to enhance their teaching, research, and professional growth. The program enhanced their capacity to mentor students in the changing healthcare environment, ensuring their preparedness for future advancements in medical technology. Furthermore, it provided a platform for initiating interdisciplinary collaboration, paved the way for the prospective integration of emerging technologies into the curriculum, and enriched the academic landscape.



Visit to IIT-D for the Launch of Business Blasters Scheme (Seniors), A Delhi Government's Initiative



Business Blasters Scheme (Seniors) is an initiative of Delhi Government to extend its support to university students with entrepreneurial aspirations. Under this scheme, a seed funding of ₹50,000 will be granted to top 1,000 teams to support and mentor young innovators, out of which, 100 teams will be selected to pitch their startups to top investors for further funding opportunities. The launch of this scheme was done by Hon'ble Chief Minister of Delhi, **Ms. Atishi** at IITD Delhi on December 10, 2024. Students from the department participated in the launch event, a trip facilitated by DTU-DIF (Faculty coordinator: Dr. Asmita Das).

The focal attention of the event was the motivational speech by Ms. Atishi. The session had a number of motivational stories including one of Scrap Uncle who through his entrepreneurship narrated a gripping tale of possible success with hard work and a never-ending urge to innovate. The program was not about just sitting and listening to achievements of people, the accumulative vision was a means of making the audience realize their latent potential. It fostered innovation and collaboration. It provided valuable insights and networking opportunities and also helped students in building up confidence and self-belief to think about start-ups and become job providers rather than job seekers.



Alumni Interaction and Brainstorming Session



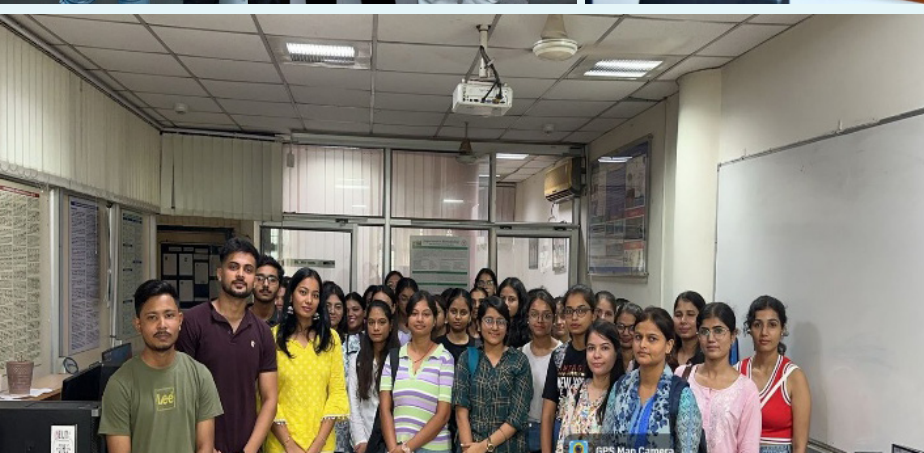
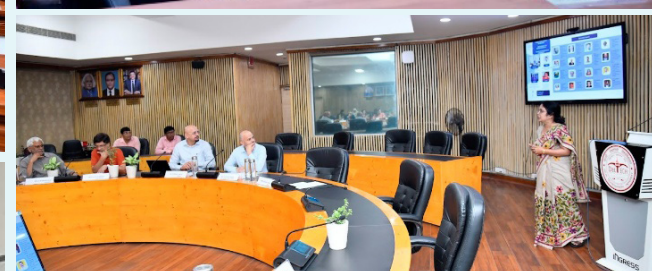
An interaction and brainstorming session with a departmental alumnus was organized by the department on December 16, 2024 (Coordinator: Dr. Asmita Das).

Distinguished alumnus was –

- **Dr. Aditi Qamra**, Senior Data Scientist, Early Development Oncology & PHC, Roche/Genentech
- Dr. Aditi's remarkable journey from DTU to Roche/Genentech was a powerful inspiration to all of us. The session with Dr. Aditi was both insightful and engaging. Her invaluable insights, garnered from industry experience, expertise, and innovative ideas ignited thought-provoking discussions and unveiled new opportunities for growth and collaboration. It was a great opportunity for the students to learn from her expertise and experience. The department looks forward to future collaborations, apply the ideas generated during the session and embark upon the collective journey of learning and innovation.







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