SHIV NADAR
INSTITUTION OF EMINENCE DEEMED TO BE UNIVERSITY
DELHI NCR

SCHOOL OF NATURAL SCIENCES

MANTHAN



The Quarterly Newsletter of the School of Natural Sciences (July-Sep 2026)

MANTHAN

Table of Contents

03 Letter from the Editor

04 From the Dean's Desk

05 Research Spotlight
Beyond the Gene: Reading the Hidden Language of Plant DNA

13 Nurturing Scientific Exchange
Events & Activities

19 Leading with Excellence
- Faculty Awards and Distinctions
- Grants and Funding
- Welcoming Our New Faculty!
- Conferences, Workshops, and Other Accolades

25 The Trailblazing Next Generation
- Student Awards, Fellowships and Achievements
- Summer Research Internships
- Celebrating Academic Excellence
- SmogSense: Teaching Immune Cells to Read the Effects of Air Pollution
- Undergraduate/Graduate Students Oral/ Poster Presentations
- Congratulations to our PhD awardees

36 Science in the Public Sphere
- BioGen: Conversations at the Frontiers of Biology

37 Distinguished Guests, Talks and lecture series

39 Selected Publications



MANTHAN

Letter from the Editor

Dear Readers,
We are delighted to present the tenth edition of Manthan, our July–September 2026 issue, bringing you a glimpse of the ideas, discoveries and people that make life at the School of Natural Sciences so vibrant.. We have tried to capture a little of the season's beauty in these pages, alongside the curiosity, creativity and achievements that bring our scientific community together.

This issue takes us through a range of research and academic activities, from advances in plant epigenomics and new laboratory facilities to scientific gatherings and faculty achievements. It also celebrates the many ways in which our students are engaging with science beyond the classroom and laboratory. SmogSense explores the cellular effects of air pollution, connecting scientific inquiry with an important environmental concern, while BioGen, a student-led podcast, creates space for conversations around emerging discoveries in biology. Both initiatives reflect the enthusiasm and initiative with which our students are exploring science and finding new ways to share it with wider audiences.

Every edition of Manthan offers an opportunity to look back at the work that has brought us together and look ahead to the questions and possibilities that lie before us. As autumn deepens and the festive season draws near, I hope this issue brings you a sense of connection, discovery and renewed inspiration.

Happy reading, and warm wishes for the season!

Srijita Banerjee,
Academic Associate,
School of Natural Sciences.



Photo Credits
Aravind Kumar, Center of Environmental Sciences and Engineering

From the Dean's Desk

Dear Colleagues, Students and Readers,

Every achievement of a school is made meaningful by the people behind it—the questions they pursue, the ideas they share and the enthusiasm with which they take on new challenges. As I look through this edition of Manthan, I am delighted to see these qualities reflected in the work of our faculty, researchers and students, and in the many ways our community continues to grow.

The inauguration of the SNIoE–CAEN Laboratory strengthens our research and training infrastructure, while HINP 2026 and the SNS Research Confluence have created valuable opportunities for scientific exchange and interdisciplinary collaboration. Hands-on training programmes, including the workshop in advanced epigenetics, further reflect our commitment to developing research skills and capabilities.

Our faculty continue to contribute through their research, professional leadership and wider scientific engagements. Particularly encouraging milestones include the ₹9.5 crore ANRF grant awarded to Dr. Sumeet Pal Singh for the AMRITA project, which investigates multi-organ ageing and metabolic disorders in the Indian population, and the ₹76.7 crore MeitY-supported NEMO programme, jointly led by SNIoE and IIT Madras. The NEMO programme brings together interdisciplinary expertise in electronics, engineering, biology and healthcare technologies, with Dr. Debarun Sengupta as the Chief Investigator.

It is equally rewarding to see our students growing as researchers, thinkers and communicators. Their fellowships, research visits, presentations and academic achievements reflect their dedication, while initiatives such as SmogSense and BioGen show how student curiosity can lead to innovative research and new ways of engaging society with science.

These accomplishments give us much to celebrate, but they also encourage us to aim higher. The challenges facing science call for bold questions, rigorous inquiry and collaboration across disciplines. Our goal is to create an environment where every member of the School feels encouraged to explore unfamiliar directions, pursue ambitious ideas and make meaningful contributions to science and society.

My sincere thanks to everyone whose commitment makes this journey possible. I look forward to all that we will continue to discover and achieve together.



Professor Sanjeev Galande,
Pro-Vice-Chancellor, Sciences Strategy and Translation
Dean, School of Natural Sciences



Beyond the Gene:

Reading the Hidden Language of Plant DNA

SRIJITA BANERJEE

When plants encounter drought, excess salt, or other environmental stresses, they cannot move away from the problem. Their survival depends on changing how they use the genetic information already present in their cells.

One way of improving crops is to identify genes associated with desirable traits and alter them, often using gene-editing technologies such as CRISPR-Cas9. But genes rarely work in isolation. Changing one can affect several biological processes at once, sometimes producing effects that are difficult to predict.

A different approach is to understand how plants control their genes in the first place: which genes are switched on, which are silenced, and how those decisions change with the environment.

This is the area of research explored by **Dr. Rohini Garg**, Associate Professor in the Department of Life Sciences at Shiv Nadar University. Her work focuses on regulatory mechanisms that lie beyond the DNA sequence itself, including epigenetic changes and the physical structures formed by DNA.

Dr. Garg has worked extensively on the genomics and transcriptomics of chickpea, a crop of considerable importance in India and elsewhere. Her work in plant genomics and epigenomics has been recognized through several national awards and fellowships, including the **INSA Young Associate Fellow**, **SERB Women Excellence Award**, and the **INSA Medal for Young Scientists**. She has also been featured in *Vigyan Vidushi: 75 Women Trailblazers of Science*, among other recognitions. At the centre of her research is a fundamental question: **how does a plant alter the use of its genetic information when conditions become unfavorable?**

Dr. Garg has also been actively involved in scientific outreach and community building. She has helped organize several conferences and workshops, including the Young Investigator's Meeting by IndiaBioscience, the Genomics India Conference, and a SERB-sponsored Karyashala workshop, among others. She also served on the Core Committee of the Indian National Young Academy of Sciences.

To understand how a plant responds to stress, scientists first need to know what genes it possesses and how those genes are expressed. When Dr. Garg began working on chickpea genomics, the genetic resources available for legumes were far less developed than those for some major cereal crops.

Her early research therefore focused on building that foundation. Using pyrosequencing, she and her team identified more than 34,000 genes expressed in chickpea, along with thousands of genetic markers. They later contributed to efforts to map the chickpea genome.







Mapping the Transcriptional Landscape of the Chickpea Genome:

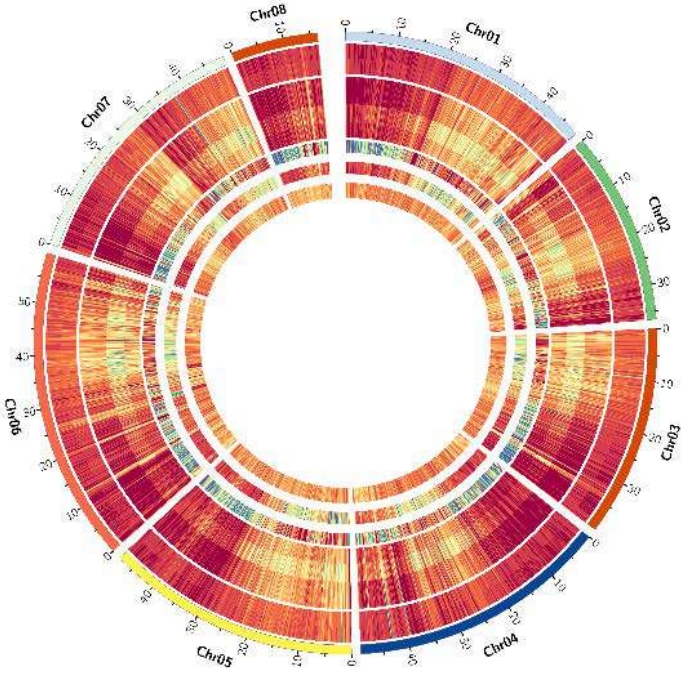
Dr. Garg's team identified over 34,000 active genes and thousands of genetic markers in chickpea, making a major contribution to characterizing the gene space within its genome.

Such work may seem removed from the question of drought or salinity tolerance, but it provides the reference against which these responses can be studied. Once researchers know the genetic landscape of a crop, they can begin asking what changes when the plant encounters environmental stress.

> *"To understand how a plant responds to stress, we first need to understand how its genome is organized and regulated," says Dr. Garg.*

Dr. Garg's research subsequently moved into **epigenomics**—the study of molecular changes that influence gene activity without altering the underlying DNA sequence.

One important mechanism is **DNA methylation**, in which small chemical groups called methyl groups attach to DNA. Depending on where they occur, these modifications can influence whether particular genes or genomic regions are active.

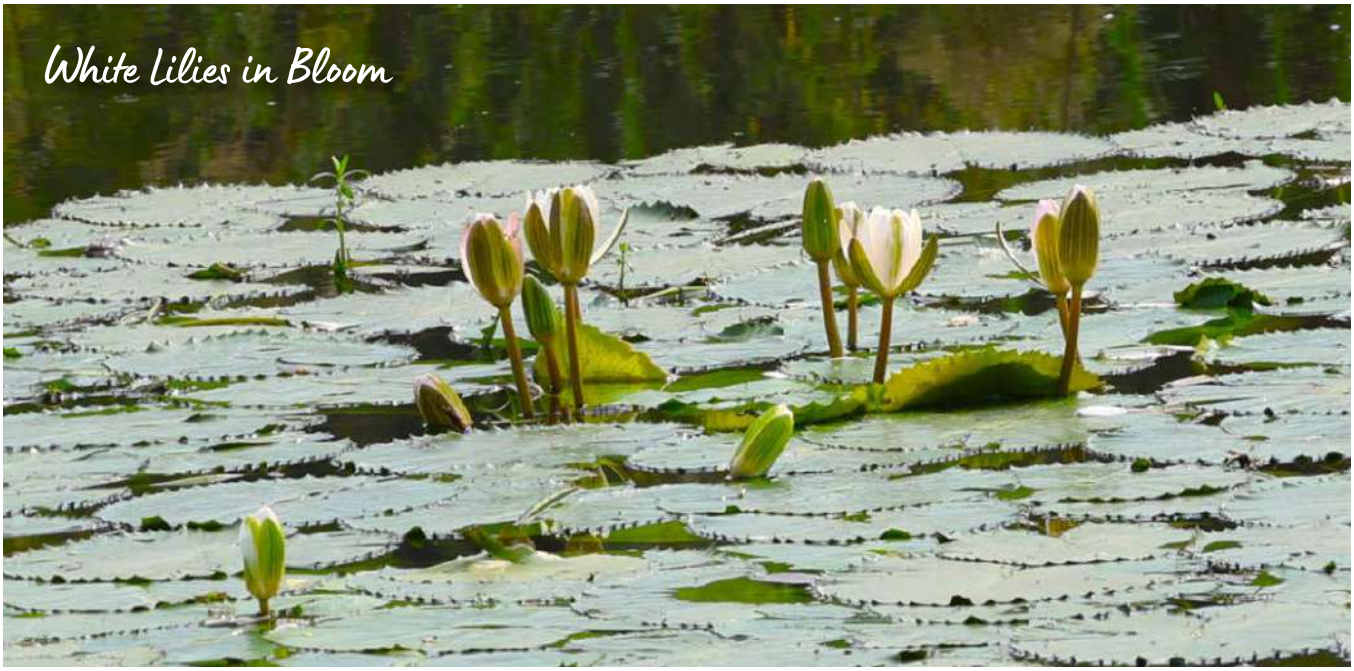


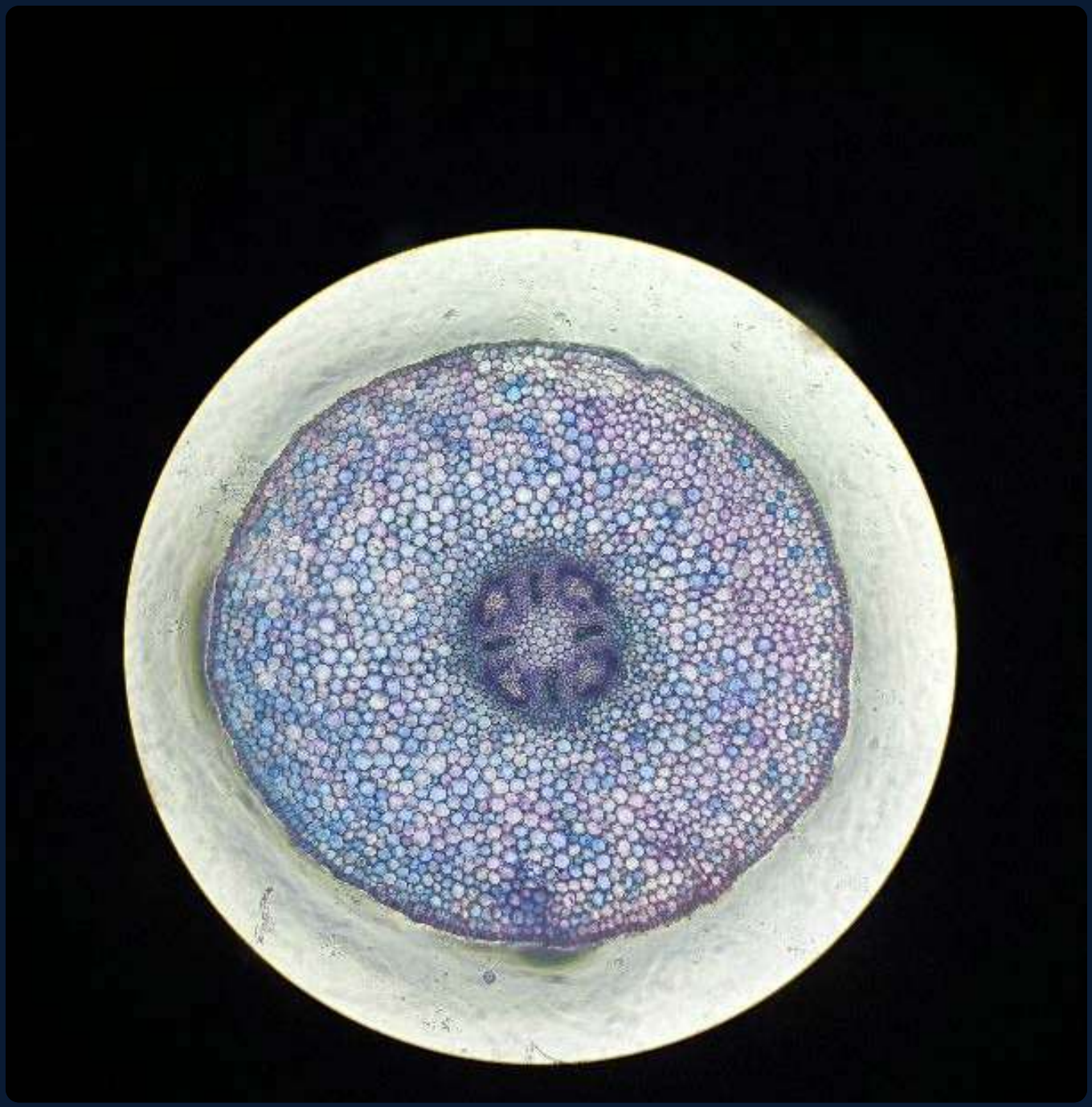
A circos plot mapping DNA methylation patterns across chickpea's chromosomes.

These changes are not necessarily uniform across a plant or across different types of stress. By comparing chickpea varieties with different levels of tolerance to drought and salinity, Dr. Garg and her colleagues found evidence that plants can modify their epigenetic landscape in genotype-specific ways. A plant does not simply activate a generic "stress response"; different environmental conditions can trigger distinct patterns of gene regulation in different genotypes.

> *"What we have found is that plants do not respond to every stress in the same way; the regulatory response can depend both on the type of stress and on the genotype of the plant," says Dr. Garg.*

Under salt stress, for example, changes in DNA methylation can affect genes and genomic regions involved in processes such as ion transport and root development. Under drought, the pattern is different, influencing another set of biological responses, like programmed cell death.





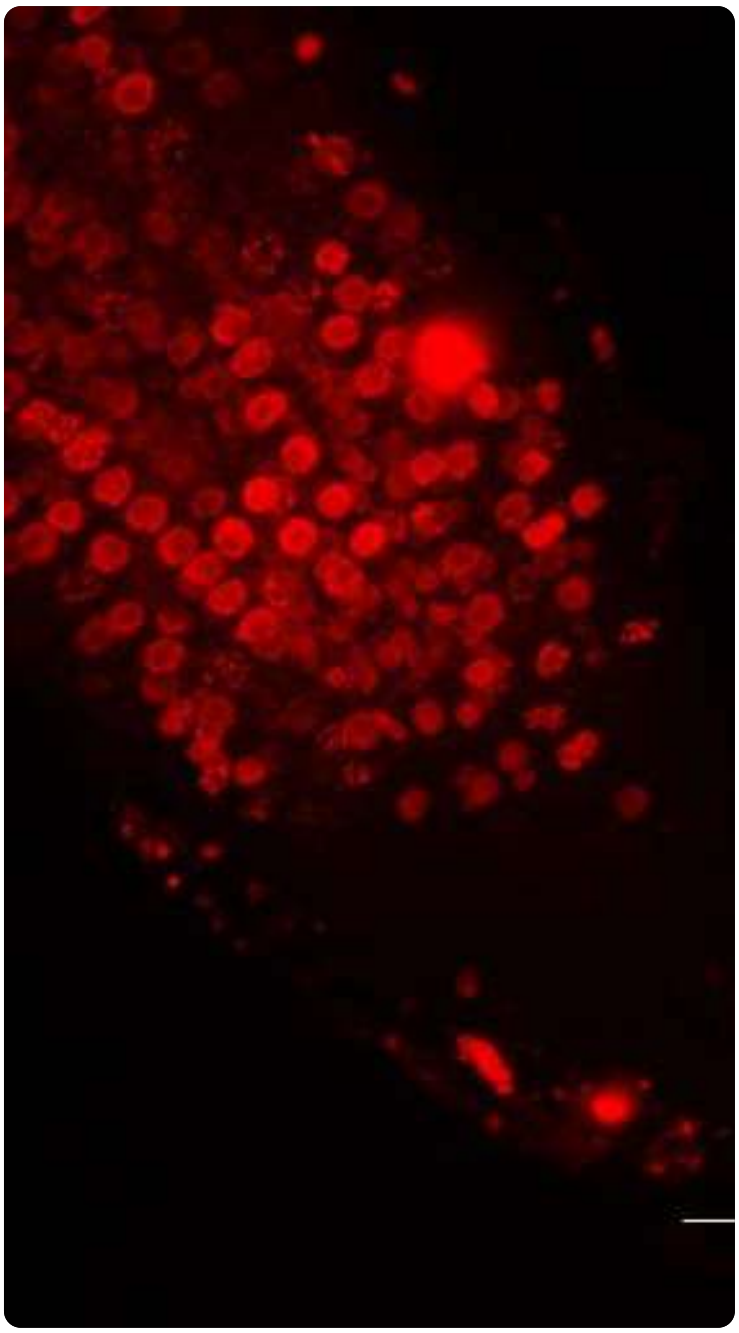
Cross-section of a salt-tolerant chickpea root.

This distinction matters because drought and salinity impose different challenges on a plant. Salt stress can disrupt cellular ion balance and damage tissues, while drought limits the availability of water. The plant must therefore adjust its physiology according to the particular stress it encounters.

DNA itself provides another layer of regulation. It is usually represented as a double helix, but the molecule can adopt other structures. Certain DNA sequences, particularly those rich in the nucleotide guanine, can fold into four-stranded structures known as **G-quadruplexes**, or G4s.

These structures are more than molecular curiosities. Their position within a genome can influence how genetic information is accessed and processed.

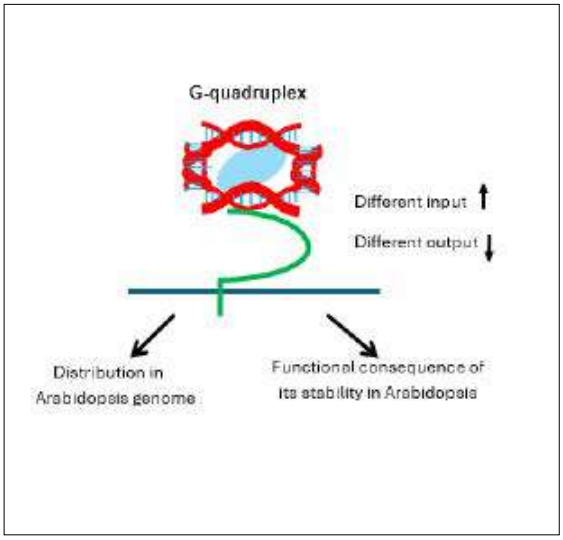
Dr. Garg and her colleagues have investigated the occurrence of G-quadruplex structures across plant genomes and found them associated with genes involved in important biological processes, including growth and development. Their work has provided evidence for a role for these structures in regulating gene activity in plants.



A stained Arabidopsis root, used as a model system to study G-quadruplex helicases in plants.

The underlying principle is straightforward, although the molecular details are complex. Before a gene can be expressed, cellular machinery must access and read its DNA sequence. A particular DNA structure can affect how easily that machinery moves along the molecule, influencing whether a gene is active.

This gives plants another layer of control over their genetic information, one based not only on the DNA sequence itself, but also on the shape that the DNA adopts.



> *"DNA is not just a sequence of letters; its structure can also influence how that information is read and used by the cell," says Dr. Garg.*

That raises another question: if a DNA structure helps restrict gene activity, how does the cell reverse the process when the gene needs to be expressed again?

Dr. Garg's research has examined proteins known as **Pif1-like helicases**, enzymes that can recognize and unwind certain unusual DNA structures. These proteins use cellular energy to separate the DNA strands and resolve structures such as G-quadruplexes.

Studies in plants lacking particular helicase proteins have shown altered growth and responses to stress, suggesting that the ability to regulate these DNA structures is important for normal development and adaptation.

This work fits into a broader change in how scientists think about genetic engineering. The DNA sequence provides the instructions, but the sequence alone does not explain how a plant uses those instructions. Gene activity is regulated through a network of mechanisms involving transcription factors, epigenetic modifications, chromatin structure, and the physical organization of DNA.



Dr. Garg with UG students during a practical class at Shiv Nadar University.

This distinction is becoming increasingly important as researchers look for ways to develop crops that can cope with more variable environmental conditions.

One possible direction is **epigenome editing**. Instead of cutting the DNA sequence, researchers can use modified CRISPR systems such as **dCas9**, often referred to as "dead CRISPR," which retain the ability to locate a specific DNA sequence but do not cut it. When linked to proteins that modify DNA or chromatin, these systems can potentially alter gene activity without changing the underlying genetic sequence.

For researchers such as Dr. Garg, understanding the natural regulatory mechanisms of plants is an important step toward using such technologies more precisely. Before scientists can alter a plant's response to drought or salinity, they need to understand how that response is regulated in the first place.

Dr. Garg's research has followed this progression: from establishing genomic resources for chickpea, to studying how environmental stress changes gene regulation, and then to examining the physical structures within DNA that help control that regulation.



Dr. Garg and her research group at Shiv Nadar University

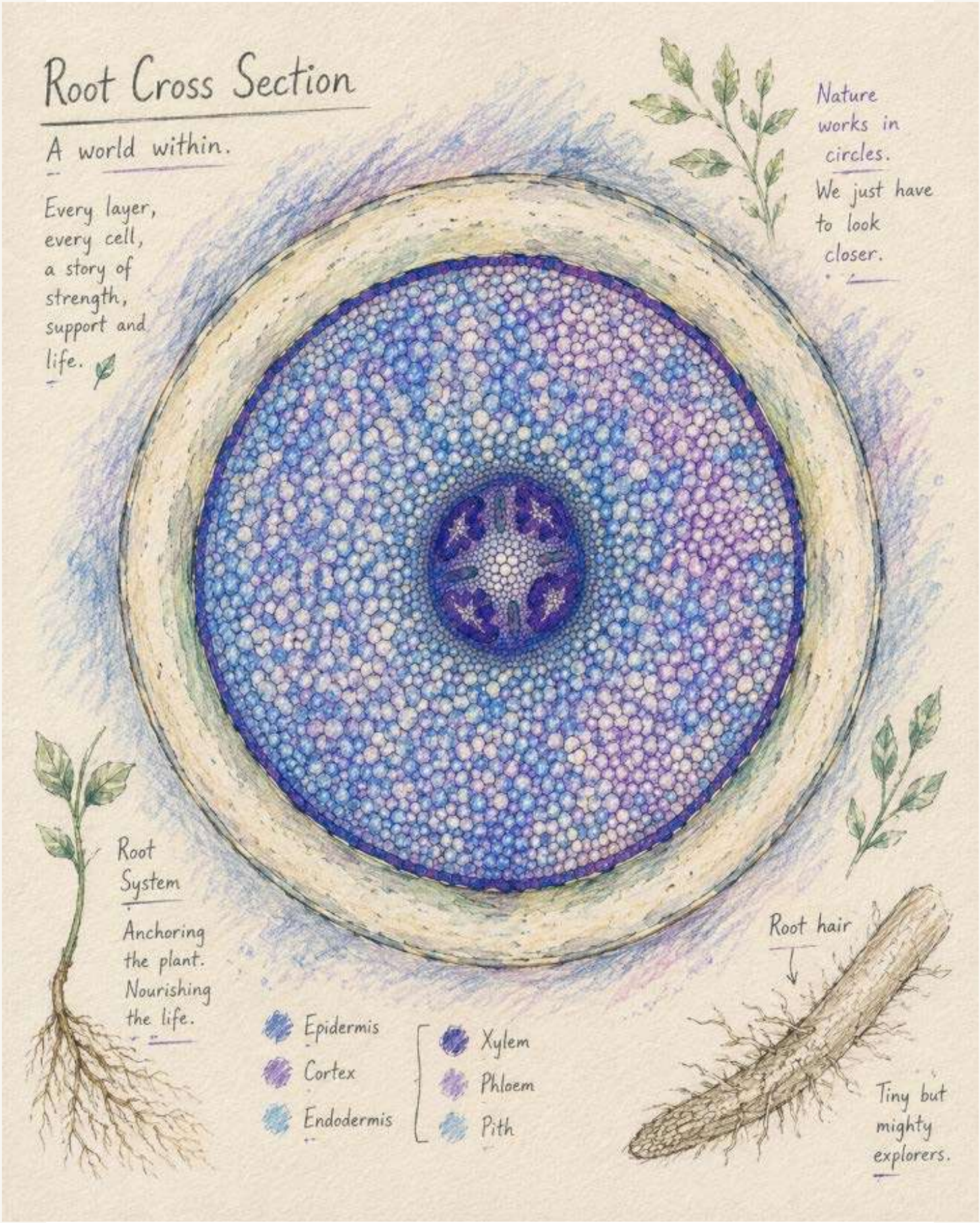


Dr. Garg with Khushboo Gupta, her first PhD student

Understanding these layers of control could eventually give crop scientists more precise ways to modify plant responses to environmental stress. Instead of focusing only on which genes are present, researchers can also ask when those genes are used, how strongly they are expressed, and what molecular mechanisms determine those decisions.

That shift—from studying genes as isolated units to understanding the regulatory systems around them—is central to Dr. Garg's work and to a broader effort to understand how plants adapt to an increasingly variable environment.





PICTURE CREDIT- DIYA ABRAHAM

SECTION 02

Nurturing Scientific Exchange

Events & Activities

01 From Partnership to Laboratory: Italy's CAEN SpA Brings Specialized Instrumentation to Shiv Nadar University



A collaboration with Italy's CAEN SpA is bringing specialized instrumentation for nuclear, particle and biomedical physics to the Shiv Nadar University, Delhi-NCR campus.

The **SNIoE–CAEN Laboratory** was inaugurated on September 15, 2026, at the University's Research Block, with Professor Sanjeev Galande presiding over the ceremony.

The laboratory is the outcome of a Memorandum of Understanding between **CAEN SpA, Italy**, a company known for instrumentation used in nuclear and particle physics, and Shiv Nadar University. The initiative was developed by Professor Sujit Tandel, Head of the Department of Physics, in collaboration with Dr. Massimo Venaruzzo, CAEN SpA's Asia Area Manager.

Its specialized instrumentation will support research spanning **nuclear and high-energy physics, biomedical physics and signal processing**. But the laboratory is designed to be more than a research space: it will also host laboratory courses and short-term training programmes, opening its facilities to students and researchers across disciplines.



02 International Conference on Horizons in Nuclear Physics (HINP 2026)





The inaugural International Conference on Horizons in Nuclear Physics (HINP 2026) was held from September 21–23 at Shiv Nadar University, Delhi-NCR, bringing together researchers from India and abroad to discuss recent developments across nuclear physics.

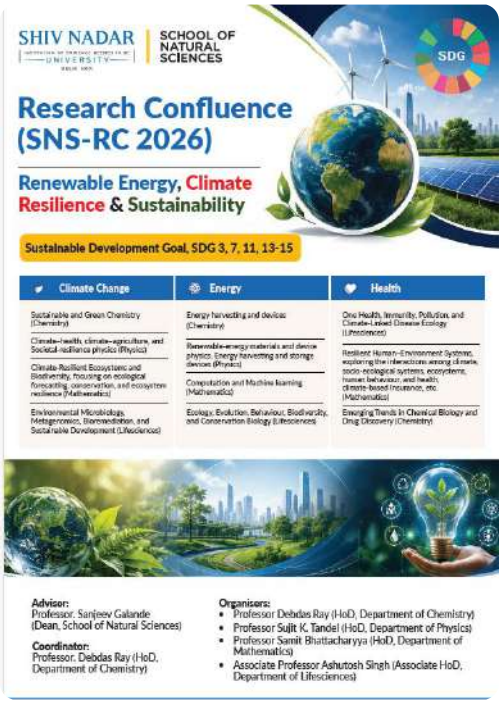
The first edition of this biennial conference explored four broad areas: nuclear structure, nuclear reactions, nuclear astrophysics and applications of nuclear physics. Discussions ranged from nuclear deformation and exotic nuclei to fusion, nuclear astrophysics and developments at major accelerator facilities. Early-career researchers also presented their work through oral and poster presentations, creating opportunities for scientific exchange across different areas of the field.

The inaugural ceremony was attended by Prof. Shyama Rath, Member Secretary, AICTE, and Secretary, UGC, as Guest of Honour, along with Vice Chancellor Prof. Ananya Mukherjee, Pro-Vice Chancellor Prof. Suneet Tuli, Conference Convenor Prof. Sujit K. Tandel, Conference Secretary Dr. Arindam Chatterjee, and University faculty, staff and delegates. As the first meeting in a new biennial series, HINP 2026 marks the beginning of a continuing forum for discussion and collaboration in nuclear physics.

03 SNS Research Confluence 2026

Science can help societies prepare for a changing climate. The **SNS Research Confluence 2026**, held on July 24 at the School of Natural Sciences, brought together faculty from the Departments of **Chemistry, Mathematics, Physics and Life Sciences** to explore this through an interdisciplinary lens.

Guided by the theme **"Climate Resilience and Sustainability: Predicting, Adapting, and Innovating for a Changing Planet,"** the Confluence focused on SDG-oriented research, emerging scientific challenges and opportunities for collaboration across disciplines. Our faculty members presented their ongoing research and future directions, opening conversations around **joint projects, interdisciplinary approaches and external funding opportunities**. The Confluence was more than a showcase of research—it offered a space for ideas from different fields to meet, and for new collaborations to take shape.











04 Hands-on Workshop Introduces Advanced Epigenetics Techniques

Understanding how cells regulate gene activity requires looking beyond DNA sequence to the molecular architecture that controls access to the genome. **Cut&Tag** and **ATAC-Seq** are widely used techniques in this field, enabling researchers to study chromatin accessibility and protein–DNA interactions with high sensitivity and relatively low input requirements.

To provide hands-on training in these approaches, the Center of Excellence in Epigenetics (COEE), Department of Life Sciences, organised a five-day workshop on Cut&Tag and ATAC-Seq workflows from July 13–17, 2026. The workshop was sponsored by the **Sun Pharma Science Foundation**.

Designed for students, postdoctoral researchers and early-career scientists, the workshop offered practical training across the experimental workflow, from cell suspension preparation and sample quality control to library preparation and sequencing-ready library assessment.

Through direct laboratory training, participants gained practical exposure to techniques used to investigate the chromatin landscape underlying cellular identity, development, disease and responses to the environment.









05 Shiv Nadar University Hosts Symposium on Women in Physics





More than 125 researchers, students and postdoctoral fellows from across India gathered at the SNIoE campus on September 11–12 for **SWPNIOE — Women in Physics: Networking, Innovation, Opportunity and Equity.**

The two-day symposium focused on gender equity, mentorship and professional opportunities in physics, bringing together both early-career and established researchers. A special session paid tribute to the life and work of Padma Shri awardee Professor Rohini Godbole, while other sessions featured research by women physicists and discussions on building better mentorship and networking structures within institutions.

The symposium was convened by Dr. Sucheta Mondal (Shiv Nadar Institution of Eminence) and Dr. Poonam Mehta (JNU), who chairs the High Energy Physics Gender Group under the Gender in Physics Working Group. The inaugural ceremony was attended by Professor Ananya Mukherjee, Professor Rupamanjari Ghosh, Professor Sanjeev Galande, Professor Suneet Tuli, and Professor Pritam Mukhopadhyay, Dean, School of Physical Sciences, JNU.

06 Teaching Assistant Workshop Held by the Department of Chemistry



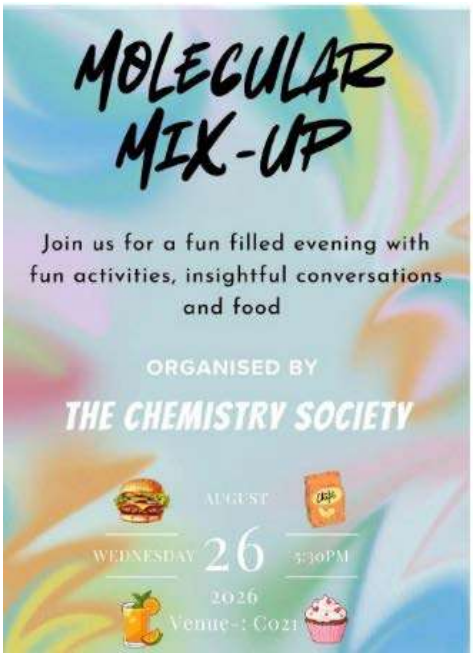
The Department of Chemistry, organised a Teaching Assistant (TA) Workshop on August 21, providing teaching assistants with an opportunity to strengthen their skills and prepare for their roles in supporting undergraduate teaching and learning.





07 Molecular Mix-Up Brings the Chemistry Community Together

The **Chemistry Society** organised the Molecular Mix-Up on August 26, 2026, bringing students and faculty together for an engaging event centred on their shared enthusiasm for chemistry. The event provided an informal space for interaction, connection and community-building within the department.











SECTION 03

Leading with Excellence

The School of Natural Sciences congratulates its faculty on their recent recognitions, appointments and professional achievements.

SNU Distinguished Visiting Professor Vivek Malhotra Awarded Prestigious FEBS Theodor Bücher Medal 2027

Professor Vivek Malhotra, Distinguished Visiting Professor in the Department of Life Sciences, Shiv Nadar University, has been awarded the 2027 FEBS Theodor Bücher Lecture and Medal, one of Europe's most prestigious honours in biochemistry and molecular biology, recognising his pioneering contributions to cell biology.

Professor Malhotra, who is also an ICREA Research Professor and Group Leader at the Centre for Genomic Regulation (CRG), Barcelona, is internationally renowned for his groundbreaking research on protein transport and secretion. Among his landmark discoveries is TANGO1, a protein essential for the secretion of large molecules such as collagen. This discovery has transformed our understanding of cellular secretion and opened new avenues for investigating tissue repair and fibrotic diseases.

The Theodor Bücher Medal, conferred by the Federation of European Biochemical Societies (FEBS), recognises scientists whose discoveries have had a lasting impact on the molecular life sciences. Professor Malhotra will deliver the award lecture, "Beyond the dogma: A new pathway controlling collagen secretion and tissue repair," at the 51st FEBS Congress in Riga, Latvia, in July 2027.

The School of Natural Sciences congratulates Professor Malhotra on this international recognition of his enduring scientific achievements.

PROFESSOR VIVEK MALHOTRA



Leading with Excellence

Professor Bimlesh Lochab

has been awarded the CRSI–A. V. Rama Rao Prize for Women Scientists 2026. She has also been appointed President of the Delhi Chapter of the Society of Polymer Science India (SPSI).



Dr. Tatini Rakshit

has been nominated to the Scientific Board of the Indian Society for Extracellular Vesicles (InSEV).



Dr. Kshatresh Dutta Dubey

has received the Research Excellence Award at the Shiv Nadar University Annual Awards 2026. He has also been appointed as an Early Career Editorial Board Member of Wiley's journal *Natural Sciences*.



Dr. Prem Chandra Pandey

has been appointed as an Academic Editor for PLOS ONE.



Dr. Ipsita Mandal

has received recognition for her research article, *"Signatures of Two- and Three-Dimensional Semimetals from Circular Dichroism,"* which was selected as an Editor's Pick by the *International Journal of Modern Physics B* (IJMPB).



GRANTS AND FUNDING:

₹9.5 crore

ANRF GRANT · 2026-2029



Dr. Sumeet Pal Singh has been awarded an ANRF grant of ₹9.5 crore for the project *AMRITA (Age Modeling and Rejuvenation Insights through Transcriptomic Analysis): Decoding Multi-Organ Aging Trajectories in Metabolic Disorders of the Indian Population*, for the period 2026–2029.

The project will use transcriptomic analysis to investigate how aging trajectories across multiple organs are altered in metabolic disorders, with a focus on the Indian population. The study aims to deepen our understanding of the molecular links between aging and metabolic disease and identify potential avenues for healthier aging.

SNIoE Partners with IIT Madras on MeitY-Supported NEMO Programme



Dr. Debarun Sengupta

The NextGen Electronics, MEMS and Optics (NEMO) programme, supported by the Ministry of Electronics and Information Technology (MeitY), Government of India, has received formal approval, with an effective start date of 3 August 2026. With a total outlay of **₹76.7 crore**, the mega project will be implemented jointly by Shiv Nadar Institution of Eminence (SNIoE) and the Indian Institute of Technology Madras (IIT Madras). A tripartite Memorandum of Understanding (MoU) has been signed among MeitY, SNIoE and IIT Madras to facilitate its implementation.

Under the programme, **Dr. Debarun Sengupta**, Assistant Professor, Department of Electrical Engineering, Shiv Nadar University will serve as **Chief Investigator,** alongside **Prof. Shanti Bhattacharya, Prof. Deleep Nair** and **Prof. Soumya Dutta** of IIT Madras. The programme comprises nine projects, two of which will be led by the Chief Investigator at SNIoE. These focus on developing advanced organ-on-chip platforms and biosensing technologies:

Building India's Own Living Brain-on-a-Chip Platform: Soft and Transparent 3D MEAs for Neurotoxicity and Disease Modelling — developing a brain-on-a-chip platform using soft, transparent three-dimensional microelectrode arrays (MEAs) for neurotoxicity studies and disease modelling.

Scalable Laser-Induced Graphene (LIG)-Based Electrochemical Sensor-Integrated Wearables for Vaginal Health Monitoring — developing wearable sensing technologies for monitoring vaginal health using laser-induced graphene-based electrochemical sensors.

The projects build on research interests spanning organ-on-chip systems, brain-on-a-chip technologies, bioelectronics, micro-electro-mechanical systems (MEMS), flexible sensing and healthcare technologies, with an emphasis on functional prototypes and technology translation.

The research team at SNIoE includes internal Co-Principal Investigators (Co-PIs) **Prof. Sanjeev Galande, Prof. Aloke Kanjilal, Prof. Susanta Sinha Roy, Dr. Siddharth Savyasachi Malu and Prof. Suneet Tuli.**

The projects will also involve collaborations with Prof. Anurag Agrawal, Dr. Naveen Bhatraju, Dr. Mayank Garg and Dr. Pratyush Pranav from the Koita Centre for Digital Health at Ashoka University (KCDH-A); Dr. Vini Gautam from the Centre for Nano Science and Engineering (CeNSE), Indian Institute of Science (IISc); and ETO HCLTech.

The NEMO programme marks a significant step towards advancing indigenous capabilities in next-generation electronics, biosensors and healthcare technologies through interdisciplinary research, collaborative innovation and technology development.

Welcoming Our New Faculty!

The School of Natural Sciences is delighted to welcome two distinguished scholars who recently joined the University, bringing with them rich academic experience and research expertise across mathematics and astrophysics.



Professor Kapil Hari Paranjape

DISTINGUISHED PROFESSOR, DEPARTMENT OF MATHEMATICS

The School of Natural Sciences warmly welcomes Professor Kapil Hari Paranjape, who joined Shiv Nadar Institution of Eminence as a Distinguished Professor in the Department of Mathematics in August 2026.

With more than four decades of experience in mathematical research and academia, Professor Paranjape has had an accomplished academic journey spanning IIT Kanpur, TIFR, the Indian Statistical Institute, Bengaluru, the Institute of Mathematical Sciences, Chennai, and IISER Mohali, where he served as Professor and later Emeritus Professor. At IISER Mohali, he also served as Dean Academics and Dean Faculty.

His research interests encompass several areas of mathematics, with particular interests in Geometry and Number Theory, alongside interests in Theoretical Computer Science and computer software. He is a recipient of the **Shanti Swarup Bhatnagar Prize in Mathematical Sciences** (2005) and is a **Fellow of the three Indian national science academies** and The **World Academy of Sciences** (TWAS).

Throughout his career, Professor Paranjape has also mentored undergraduate and graduate students, many of whom have gone on to build successful careers in academia and research.

With his deep experience in mathematics and academic mentorship, Professor Paranjape brings a wealth of knowledge and perspective to the School, and we are pleased to welcome him to our community.



Dr. Bhaskar Biswas

ASSISTANT PROFESSOR, DEPARTMENT OF PHYSICS

We are pleased to welcome Dr. Bhaskar Biswas, who joined the Department of Physics as an Assistant Professor on August 3, 2026.

Dr. Biswas received his Ph.D. in Astrophysics from the Inter-University Centre for Astronomy and Astrophysics (IUCAA), Pune, in 2021. With around a decade of research and teaching experience in theoretical and computational astrophysics, his work spans neutron-star physics, gravitational-wave astronomy, multimessenger astrophysics, numerical relativity, Bayesian inference and data analysis, as well as applications of neural networks and machine learning in astrophysics.

Before joining SNIoE, Dr. Biswas held research positions at the Hamburg Observatory, University of Hamburg, including as a Humboldt Research Fellow and Postdoctoral Researcher. He has also worked as a Postdoctoral Researcher at the Oskar Klein Centre, Stockholm University, Sweden.

His research sits at the intersection of fundamental physics, astrophysical observations and computational methods, bringing together theoretical modelling, large datasets and modern computational approaches to study some of the most extreme objects and phenomena in the Universe.

We are excited to welcome Dr. Biswas to the Department of Physics and to have his expertise in astrophysics, gravitational-wave science and computational methods enrich the School's research landscape.

Conferences, Workshops, and Other Accolades

Professor Parthapratim Munshi has received International Travel Support from the ANRF to participate in the 27th Congress and General Assembly of the International Union of Crystallography, held in Canada from August 11–18, 2026.

Professor Bimlesh Lochab participated in several national forums on polymer science and sustainable materials. She delivered a keynote lecture on *"Scalable, Stable, and Energy-Efficient Thermoset Particles for Photocatalytic H_2O_2 Production"* at the ACS150 JACS Symposium Series in Kolkata on July 1, followed by another keynote on *"Rational Design Strategies for Greener and Healable Polybenzoxazine Thermosets"* at the 37th CRSI-NSC & CRSI-ACS Lecture Series, IACS Kolkata, on July 2–4. She also participated in the *Thought Leadership Forum: Nurturing Indian Academic & Research Institutions for Viksit Bharat*, organised by ACS International, India, on August 5, and delivered an expert session on *"Polymer Innovation for Sustainable Development: Connecting Academia, Industry, and Society"* at the University of Rajasthan on August 12.

Dr. Debarshi Das delivered a talk on *"Unbounded Sequential Communication Power of a Qubit"* at University College London (UCL), UK, on August 4, 2026. His academic visit to UCL, from July 6 to August 6, was supported by the Royal Society, UK.

Dr. Priyanka Grover delivered a talk on *"A Convergence Problem Related to Best Approximants in Matrices"* at *Mathematical Highlights by Fellows and Associates*, organised by the Indian Academy of Sciences, on July 10, 2026.

Professor Samarendra Pratap Singh participated in the IEEE TC-FLEPS Residential Workshop held on September 5–6, 2026, at Timber Trail, Parwanoo, Himachal Pradesh. The workshop focused on developing technology roadmaps and a white paper covering sensors and actuators, energy harvesting and storage, novel applications, and standards.

Dr. Prem Chandra Pandey attended the GACI Annual Meeting and Roundtable Discussion on *"Strategic Path Forward for Advancing GIS Academia Council of India (GACI)"* in New Delhi on September 3, 2026. During the meeting, Padma Shri awardee Prof. Shailesh Nayak released the Springer volume *Geoinformation for Disaster Monitoring and Management*, highlighting the growing role of geospatial technologies in disaster monitoring and management.

Dr. Binson Babu delivered a talk on *"Hybrid Ion Capacitors: From Fundamentals to Next-Generation Electrochemical Energy Storage"* during a One-Week Faculty Development Programme at Gautam Buddha University, Greater Noida, on September 7–11, 2026.

Dr. Sumeet Pal Singh delivered a talk on *"Preclinical Models and Translational Approaches in Liver Diseases"* at the Institute of Liver and Biliary Sciences (ILBS), New Delhi, on September 29, 2026.

Dr. Subhra Sen Gupta presented *"Theory of Spin-Orientation in Correlated Thin Films: A Subtle Interplay between Strain and Multipole Coulomb Interactions"* at the 8th Annual Conference on Quantum Condensed Matter (QMAT 2026), held at Jawaharlal Nehru University (JNU), New Delhi, in July 2026.



A Canopy of Pink Blossoms on the Silk Floss Tree

Dr. Sachin Deshmukh delivered talks on *"Space, Time and Ripples in the Hippocampal Fabric"* at CAMP2026, IISER Pune, and *"What Moves the Hippocampal Spatial Code?"* at the Neurogati Workshop, IIT Madras, in July 2026.

Dr. Kshatresh Dutta Dubey delivered an expert session on *"Designing Catalysts Based on Designed Electric Fields"* at SRM University–AP on September 2, 2026. He also presented *"Designed Electric Field—A New Tool for Catalyst Design"* at an international conference at JNCASR on September 10–13.

Dr. Tatini Rakshit delivered a talk on *"Hyaluronan in Cancer: Single-Molecule Force Spectroscopy"* at an IISER Mohali departmental seminar on July 8–9, and another on *"Probing Cancer Biomarkers Using a Biophysical Approach"* at the BioSpan Conference, IIT Bhilai, on September 23–27, 2026.

Dr. Kenji Nishiwaki delivered talks on *"Revisiting Neutrino Oscillations in Vacuum with Wave Packets"* at Chiba University on July 27 and Okayama Science University on August 4, 2026, in Japan.

Professor Aloke Kanjilal presented *"Atomic Filamentation and Conductance Quantization in hBN/HfO_2 Bilayer Resistive Switching Devices"* at the 8th Annual Conference on Quantum Condensed Matter (QMAT2026), held at Jawaharlal Nehru University, New Delhi, on July 5–8, 2026.

Dr. Mayukh Majumder served as an invited speaker and chaired a session at the National Conference on Quantum Condensed Matter (QMAT2026), held at Jawaharlal Nehru University in July 2026.

Dr. A. Satyanarayana served as resident faculty for the MTTS Overture Program at B. V. Raju College, Bhimavaram, Andhra Pradesh, on July 20–21, and at Vivekananda Global University, Jaipur, on September 8–9, 2026. He also conducted a hands-on workshop on *"Linear Algebra with Python"* for B.Sc. undergraduates at St. Francis College for Women, Hyderabad, on July 25.



White Kash Flowers Dancing in the Breeze by the SNU Lake

SECTION 04

The Trailblazing Next Generation

Student Awards, Fellowships and Achievements



BAYER FOUNDATION FELLOW 2026

Sonam Raghav, a PhD student, was selected as a **Bayer Foundation Fellow 2026** for the Otto Bayer Fellowship in Drug Discovery. As part of the fellowship, she will undertake a six-month collaborative research project with Prof. Rumiana Dimova's group at the Max Planck Institute of Colloids and Interfaces, Potsdam, Germany, from January to July 2027.



Mitiksha Gupta, PhD student, received the **Best Presentation Award** for her oral presentation titled *"Lactobacillus-Mediated Sustained Indole Delivery Ameliorates Pro-Inflammatory Microenvironment in Type-2 Diabetes Mellitus"* at the International Conference on Advanced Technologies for Sustainable Food, Health and Materials (ICATS-FHM), held at Hokkaido University, Japan, in September 2026.



Dipti Ranjan Panigrahi, PhD student, received an **ANRF International Travel Support grant** to attend the **77th Annual Meeting of the International Society of Electrochemistry** in Sydney, Australia, from September 6–11, 2026. She also delivered an oral presentation at the meeting.



Bhavika Bhatia, a PhD student, received an **ANRF International Travel Grant** to attend a scientific programme at **TU Wien, Vienna, Austria**, from September 7–11, 2026.



Dibyendu Chakraborty received an **ANRF International Travel Scheme (ITS) grant** to attend the **XIX International Conference on Interconnections between Particle Physics and Cosmology (PPC2026)** and the **4th Gordon Godfrey Workshop on Astroparticle Physics** at the University of New South Wales, Sydney, from August 31 to September 4, 2026. He also delivered an oral presentation titled *"Aspects of a Five-Dimensional U(1)Lμ−Lτ Model at Future Muon-Based Colliders."*



Ayushi Kaushik was awarded a fellowship to attend the **47th International School of Nuclear Physics** in Erice, Italy, from September 16–22, 2026, where she also delivered an oral presentation. She additionally received a **CSIR Foreign Travel Grant** to support her travel to Italy.



Epari Sai Santosh Kumar, an Integrated M.Sc.–PhD student, undertook a **one-month research visit to the University of Melbourne** through the SPARC programme in July 2026.



Aas Mohd, a PhD student, received a **travel award** to attend the **32nd International Conference on Hepatitis C Virus, Flaviviruses and Related Viruses** in Copenhagen, Denmark, from September 14–17, 2026.





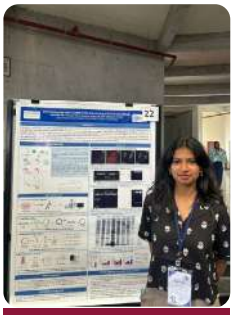
Sahana Y. K. and **Renu Bhati**, both PhD students, were selected as winners of student challenges under the **RESOLV Cluster of Excellence**. Sahana undertook an internship at Ruhr University Bochum from July to September 2026, while Renu is scheduled to undertake an internship at the University of Duisburg-Essen from September to November 2026.



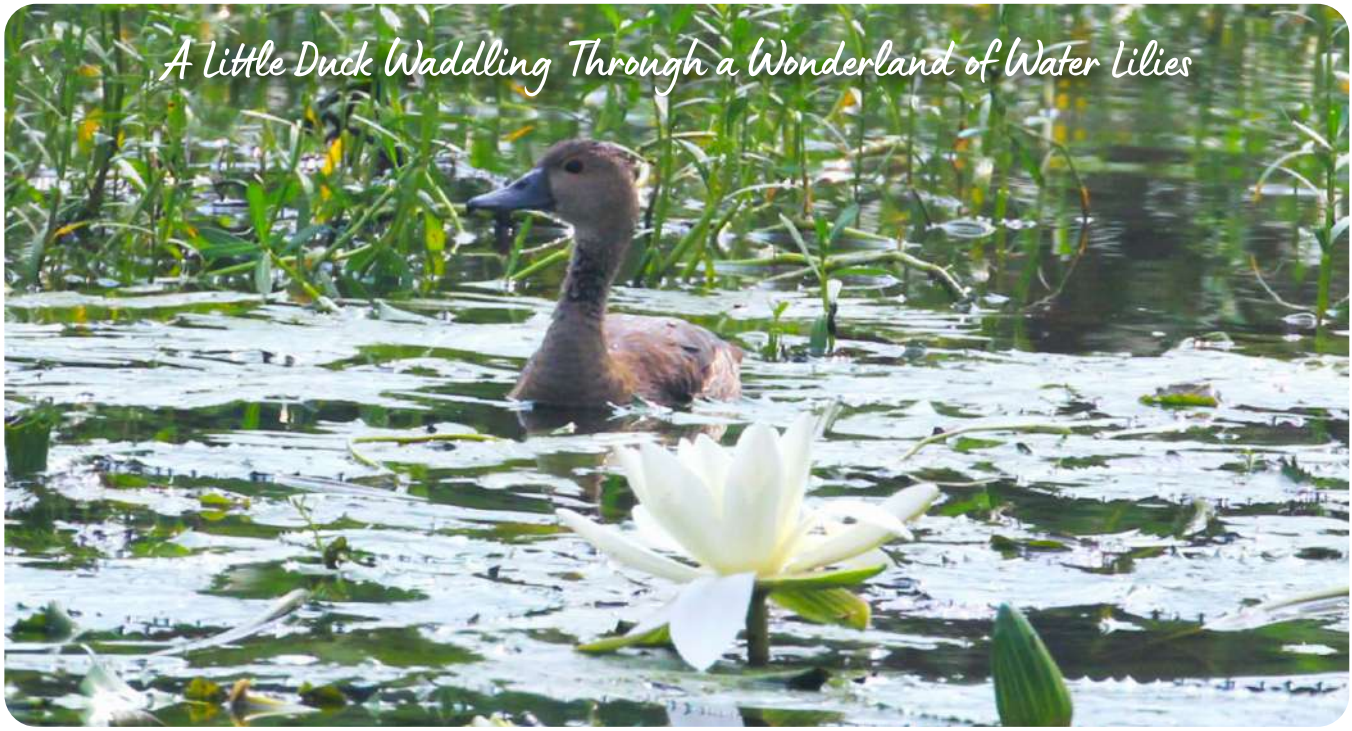
Akshat Srivastava attended the workshop *"Machine Learning in Survival Analysis with Hands-on R (WML-SAR-2026)"* at the Indian Institute of Information Technology Allahabad from July 6–11, 2026, where he secured **second position in the quiz competition** organised as part of the workshop.



Vasanthapandiyan M., a PhD student, won a sponsored conference ticket from the **4TU Centre for Energy** to participate in the **20th International Conference on Theoretical Aspects of Catalysis (ICTAC-20)** at TU Delft, Netherlands, from July 6–10, 2026.



Anannya K. R. will join the **MSc Developmental Biology and Stem Cells (Research)** programme at the **University of Manchester** in September 2026.



Celebrating Academic Excellence- Dean's List for Spring 2026

Students across the School of Natural Sciences were recognised for their academic performance through the **Dean's List for Spring 2026**.

CHEMISTRY

Svayam Shah, Aryan, Tiya Garg, Gowri Rao, Aayush Rana and Harshita Agarwal

LIFE SCIENCES

Shreya S, Kundrika Upadhyay, Varuna Sri Venkatesh, Sahana Shanthakumar, Kiyarra Sharma, Pranavesh Mouroughanad, Shubhika Pandey, Rucha Shashin Shobhane, Gracy Gaur, Arshe Razdan, Navya Trivedi and Aayushi Dasgupta

MATHEMATICS

Kiranveer Singh, Deepak Sai Shankar, Bhumika Ahuja, Samvar Jain, Aneri Raval, Aparna Karthick and Rajesh

PHYSICS

V. Shiv Vale, Sashvat Srivastava, Sujith S, Rakshith Aravindan, Tanishka, Aditya Parikh, Chinmay Desai, Sareesha Sandeep Rane



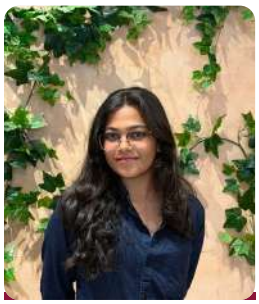
































Summer Research Internships

Several students gained research experience through competitive summer internships at leading academic and research institutions:

- **Vanshika Jain,** B.Sc. Chemistry — **Jio, Gurugram**
- **Svayam Kalpesh Shah**, B.Sc. Chemistry — **NUS Summer School/SSI Programme**, National University of Singapore
- **Saarthak Shukla**, B.Sc. Chemistry — **IIT Indore**
- **Amisha Kumari**, M.Sc. Chemistry — **IIT Kharagpur**
- **Harsh Agrawal,** B.Sc. Chemistry — **Indian Institute of Science (IISc), Bengaluru**
- **Riya Sharma,** M.Sc. Chemistry — **IIT Bombay**
- **Saloni Prajapati**, B.Sc. Chemistry — **CSIR-Central Drug Research Institute (CDRI), Lucknow**
- **Animesh Nigam**, B.Sc. Chemistry — **CSIR-Institute of Genomics and Integrative Biology (IGIB)**



The Scarlet Splendour of the Kusum Tree



SmogSense:

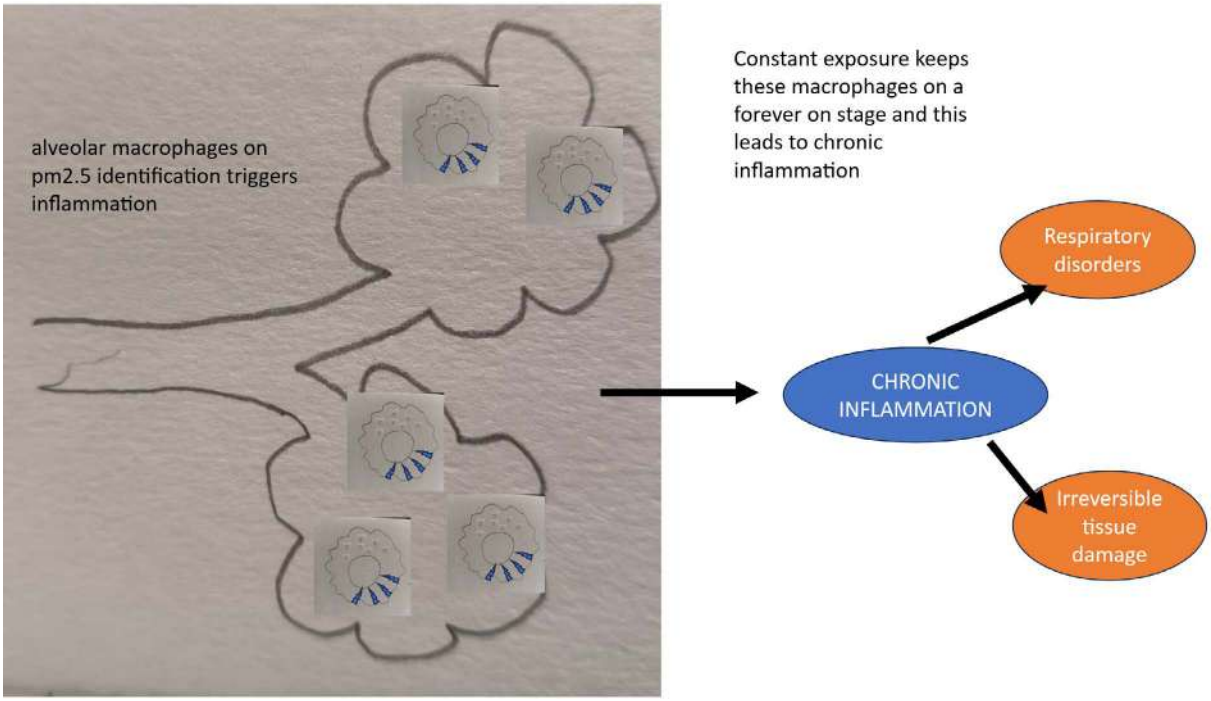
Teaching Immune Cells to Read the Effects of Air Pollution

The SmogSense Team — From left to right: Professor Sanjeev Galande, Aayushi Dasgupta (4th-year Biotechnology), Rucha Shobhane (3rd-year Biotechnology), Annushka Dogra (4th-year Biotechnology), Shubhika Pandey (4th-year Biotechnology), Aarav Lall (4th-year Biotechnology), and Dr Jugal Das.

Every winter, Delhi-NCR's air becomes a public-health concern measured in numbers. The sky takes on a familiar grey haze, and we begin checking our phone screens for the AQI—quietly relieved when the number drops from "hazardous" to merely "very poor," as if that were somehow good news.

But the AQI tells us only about the air outside. It cannot tell us what happens once that air enters the body.

Air pollution is among the world's leading environmental health risks. Fine particulate matter, known as PM2.5, is one of the pollutants of greatest concern — unlike the larger dust particles the nose and throat can trap, PM2.5 particles are small enough to penetrate deep into the lungs and some particles or their components can enter the bloodstream. This is why PM2.5 is so strongly linked to respiratory and cardiovascular disease.



A macrophage encountering PM2.5 activates a protein called NF-kB, the master switch that turns on inflammatory genes. A short burst is normal — even useful, a sign the body's defenses are working. But when exposure is constant, as it is for anyone breathing Delhi's winter air day after day, NF-kB stays switched on. The result is chronic inflammation that gradually damages lung tissue in ways that don't reverse

The same air does not necessarily produce the same biological response in everyone. Age, underlying disease, and the duration and intensity of exposure can all shape what happens next. That's why the same smog can hit two people so differently. One gets a cough that clears on its own. The other gets a cough that won't go away without medical help. That's the question our students on the SmogSense team set out to answer: what if we could study the biological response to pollution at the level of the cell?

SmogSense, an iGEM 2026 project from our student team at Shiv Nadar Institution of Eminence, is developing an engineered macrophage system that can report — and potentially respond to — the inflammatory signaling PM2.5 triggers.

Why Delhi—and why now?

Delhi-NCR provides an immediate context for the question SmogSense is asking. According to IQAir's 2025 World Air Quality Report, New Delhi was ranked the world's most polluted capital city for the eighth consecutive year, with an annual average PM2.5 concentration of 82.2 $\mu g/m^3$ — over 16 times the World Health Organization's guideline level of 5 $\mu g/m^3$.

This is not simply a bad-air day; it reflects a sustained burden of particulate pollution over the year. And the health burden extends far beyond temporary breathing discomfort — research has also associated long-term PM2.5 exposure with increased mortality in Delhi. That makes Delhi a setting where the question of what polluted air does to the body is particularly urgent.



PROFESSOR SANJEEV GALANDE, DEAN, SCHOOL OF NATURAL SCIENCES AND PROJECT ADVISOR, EXPLAINS:

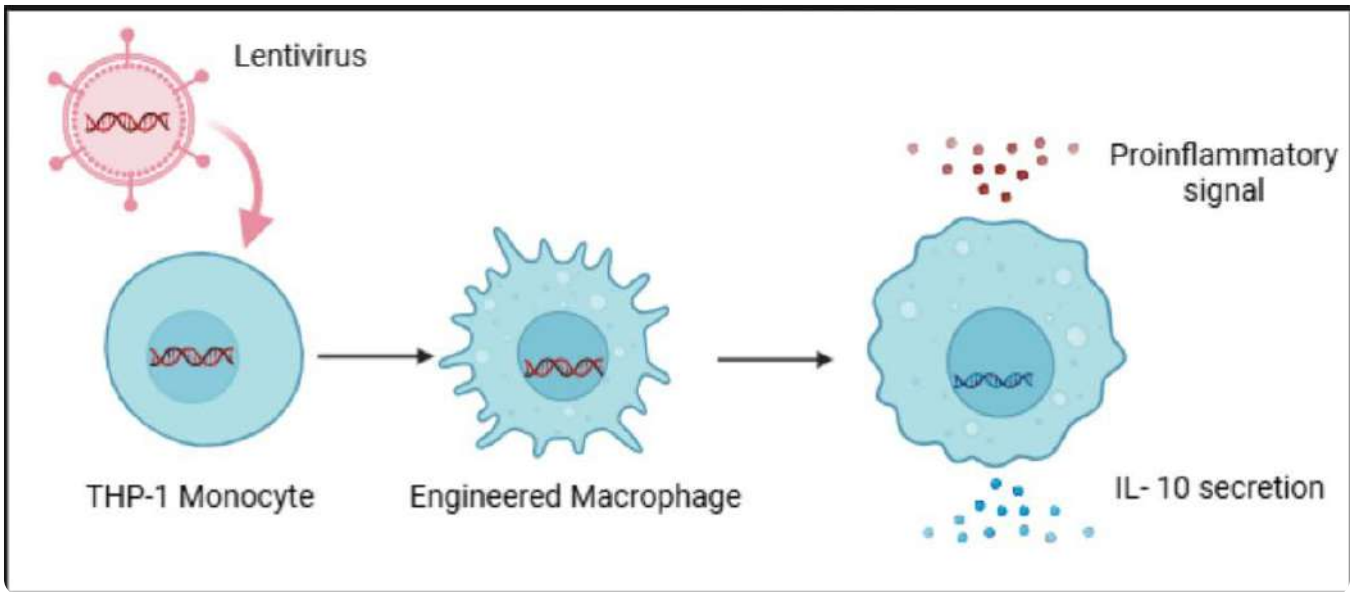
> *"Air pollution is usually discussed as an environmental problem, but its consequences are ultimately biological. SmogSense brings those two perspectives together — using synthetic biology to make that biological response visible and measurable."*

Macrophages are immune cells found throughout the lungs, where they help clear inhaled particles, microbes and cellular debris. They also participate in the body's inflammatory response to particulate matter. Research in macrophages has linked PM2.5 exposure to activation of the **NF-κB pathway**, an important regulator of inflammatory gene expression.

PM2.5 itself is not a single substance. Its chemical composition varies depending on where it comes from, and particles can carry different metals, organic compounds and other components. These can interact with cells and contribute to oxidative stress and inflammatory signalling.

DR JUGAL DAS, ASSISTANT PROFESSOR, DEPARTMENT OF LIFE SCIENCES AND PRIMARY PI OF THE PROJECT, EXPLAINS:

> *"Air-quality measurements tell us about exposure, but they do not capture the biological response that exposure produces. With SmogSense, we are asking whether we can build a cellular system that converts an inflammatory response into a measurable signal. That gives us a way to study the effects of particulate pollution directly at the cellular level."*



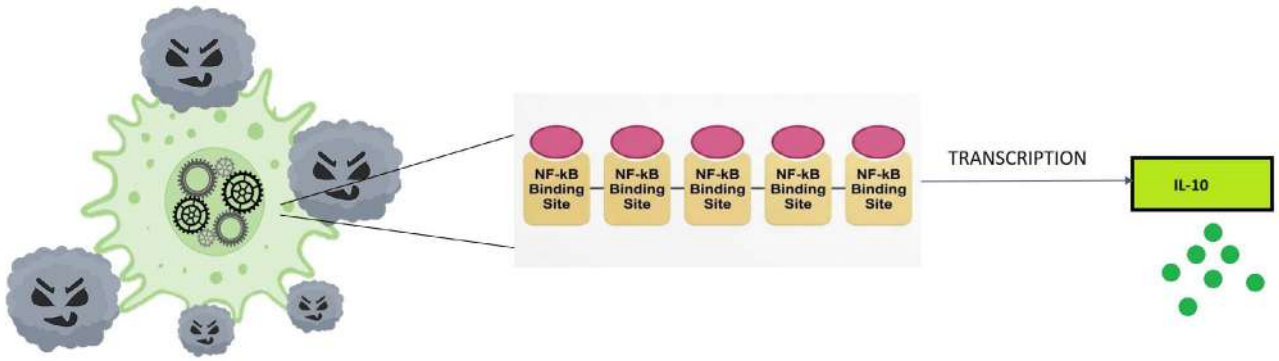
SmogSense is an engineered macrophage biosensor *designed to report particulate exposure-associated inflammatory signalling. The team is developing an NF-κB-responsive genetic circuit, packaging it into lentiviral particles using HEK293 cells, and introducing it into THP-1-derived macrophages.*

A cell that reports—and responds

The SmogSense team is developing a synthetic genetic circuit that responds to NF-κB activity. To build this, the team is packaging the circuit into lentiviral particles — a common lab tool for delivering genetic material into cells. From there, the circuit is delivered into THP-1-derived macrophages, lab-grown immune cells commonly used as a model for human macrophages, including those in the lungs.

When the pathway is activated, the circuit is designed to produce a fluorescent reporter. Researchers can then measure that signal to study how the engineered cells respond under different experimental conditions.

The SmogSense circuit is also being designed to produce **interleukin-10 (IL-10)**, an anti-inflammatory cytokine that helps regulate immune responses. Studies in human alveolar macrophages have shown that IL-10 can suppress inflammatory cytokine production and influence NF-κB activity. In SmogSense, this biology is incorporated into a synthetic circuit: the inflammatory signal that activates the fluorescent reporter is also designed to trigger an anti-inflammatory output.



Synthetic genetic circuit in THP-1-derived macrophages — When particulate exposure activates NF-κB in the engineered macrophages, the circuit is designed to produce IL-10 alongside a fluorescent reporter. This creates a potential negative-feedback mechanism in which inflammatory signalling could trigger an anti-inflammatory response.

The concept is a form of negative feedback—detect an inflammatory signal and produce a molecule that may help restrain the response.

PROFESSOR SANJEEV GALANDE SAYS:

> *"What makes SmogSense particularly interesting is that it brings together sensing and response in the same biological system. We are not simply trying to build a sensor for pollution — we are exploring whether engineered cells can recognize a harmful biological response and act on it in a controlled way."*

SmogSense is currently a proof of concept in cultured cells, not a therapeutic product. The team will establish whether the circuit behaves as intended, how specific and reproducible its response is, and whether its anti-inflammatory output can meaningfully regulate the cellular response without unwanted effects.

The immediate objective is focused: build and validate the circuit, and test whether it can produce a controlled anti-inflammatory output alongside its measurable signal. If that holds up, the same system could become a research platform for studying how particulate exposure drives inflammation, and for screening compounds that influence that response.

DR JUGAL DAS SAYS:

> *"At this stage, our priority is to establish the biology rigorously. If we can demonstrate that the circuit responds predictably to inflammatory signals and that its outputs can be controlled, we will have a foundation on which more sophisticated applications can be built."*

The Road Ahead

The team will take SmogSense to the iGEM 2026 Grand Jamboree in Paris this November, where student teams from around the world will present their synthetic-biology projects. The competition brings together laboratory research with modelling, human practices, safety and responsible innovation.

The SmogSense core team comprises **Aayushi Dasgupta, Rucha Shobhane, Annushka Dogra, Shubhika Pandey and Aarav Lall**.

Supporting the next step...

Supporting SmogSense means supporting the experimental work behind the idea: validating the genetic circuit, characterising its behaviour and helping a student team take an ambitious synthetic-biology concept from design towards evidence. It is an opportunity to invest in young researchers working at the intersection of synthetic biology, environmental health and immune biology.

PROJECT AT A GLANCE

Project: SmogSense
Institution: Shiv Nadar Institution of Eminence
Competition: iGEM 2026
Category: Therapeutics Village
Grand Jamboree: Paris, November 2026
Core Team: Aayushi Dasgupta, Rucha Shobane, Annushka Dogra, Shubhika Pandey and Aarav Lall

FACULTY CONTACT EMAILS:

Dr. Jugal Das (jugal.das@snu.edu.in): Primary PI
Prof. Sanjeev Galande (sanjeev.galande@snu.edu.in): Advisor

SNIoE Team Page(Project Overview):

https://teams.igem.org/6519

Email id- igem_snioe@snu.edu.in

Undergraduate/Graduate Students Oral/ Poster Presentations

Santosh Singh Negi presented his research on *"Wold-Type Decomposition for Tuples of Near-Isometries"* at the **41st Annual Conference of the Ramanujan Mathematical Society (RMS-2026)**, held at Manipal Institute of Technology, Bengaluru, in July 2026.

Krishana Kumar Gupta presented a poster titled *"Approximation Problems in the Ky Fan p-k Norm"* at the **Indian Women and Mathematics (IWM) Conference**, held at IISER Mohali on July 9–11, 2026.

Manalipadam Lakshmi presented *"Ensemble-Based Forecasting and Koopman Spectral Characterisation of PM2.5 Dynamics in Delhi"* at the **Conference on Nonlinear Systems and Dynamics**, held from July 7–10, 2026.

Ayan Chakravorty, presented a poster titled *"Decoding Optoelectronic Behaviour in X_3BI_3 Anti-Perovskite Derivatives through Many-Body Perturbation Theory"* at the **EMRS 2026 Fall Meeting**, held at Warsaw University of Technology, Poland, on September 14–17, 2026.

Amit Kumar (PhD), presented a poster titled *"Cold-Shock Domain (CSD)-Containing miRNA Biogenesis Factors as Conserved Regulators of Lifespan and Healthspan"* at **RISE for Healthy Aging 2026**, organised by Longevity India and IISc, in August 2026.

Bhaskar Roy (PhD), presented a poster titled *"Dorsal-Ventral Neural Resilience in Ageing Human Brain: Evidence from Multimodal Neuroimaging and Transcriptomic Profiling"* at the **Alzheimer's Association International Conference**, held in London from July 12–15, 2026.

Ayushi Kaushik presented a poster on her research at **CosPA-2026**, held at the University of Canterbury, New Zealand, from July 3–9, 2026. She also delivered an oral presentation to the High Energy Physics group at the University of Canterbury.

Manuj Ahuja received a travel grant to deliver an oral presentation titled *"Unraveling K-Ion Storage Mechanism in Ti_3C_2T MXene for Flexible Energy Storage Applications"* at the **Electrochemical Society (ECS) Meeting** in Calgary, Canada.

Tanmayee Parida presented *"Device-Faithful Training of Memristor-Based Neural Networks for Pattern Recognition"* at the **Doctoral Consortium of the 28th International Conference on Pattern Recognition (ICPR 2026)**, held in Lyon, France, from August 17–22, 2026.

At the **National Conference on Quantum Condensed Matter (QMAT 2026)** at Jawaharlal Nehru University, New Delhi, **Madhurima Biswas** presented a poster, while **Khokan Bhattacharya** and **Ishant Gaba** delivered oral presentations in July 2026.



The Sunlit Blossoms of the Copperpod Tree

SECTION 05

Science in the Public Sphere

BioGen: Conversations at the Frontiers of Biology







Students of **Club Genesis, Department of Life Sciences**, have launched **BioGen**, a student-led podcast that brings conversations around emerging research in biology to a wider audience. The podcast explores new discoveries at the frontiers of biology, connecting undergraduate students with researchers working across diverse areas of the life sciences.

The inaugural episodes delve into two fascinating areas of contemporary biology.

The first episode features **Dr. Vincent Detours of the Université libre de Bruxelles (ULB)**, who discusses how **artificial intelligence is transforming histology and pathology**. The conversation explores *morphomics*—the study of biological information encoded in tissue architecture—and how computational approaches, including AI-based analysis of large histological datasets, are opening new ways to understand disease and biological systems.

▸ LISTEN

Listen to the first episode here-
https://open.spotify.com/show/033QniKLbnwEGs1BBqWO0C?si=_rGzDS5LSNqZuNXYBF0psw&utm_source=copy-link

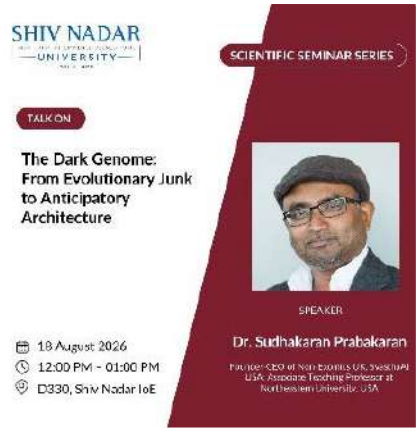
A subsequent episode features **Dr. Emily E. Curd**, whose research has uncovered an extraordinary phenomenon in freshwater ecosystems: **a transmissible cancer in fish**. While cancer is generally not contagious, the episode explores how severe melanomas observed in catfish led researchers to investigate a cancer capable of spreading between individual fish. The discussion offers a glimpse into an unusual intersection of **cancer biology, evolution and freshwater ecology**.

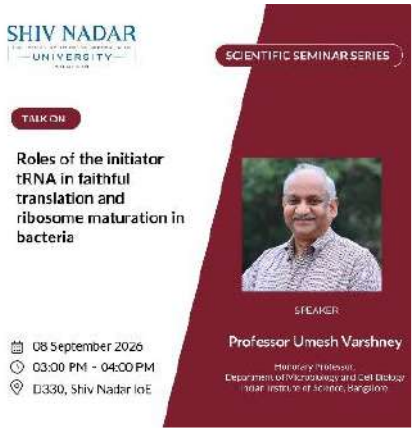
▸ LISTEN

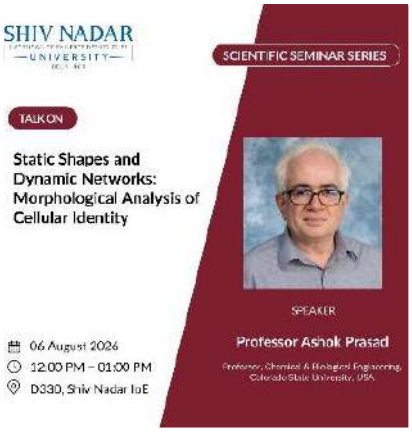
Contagious Cancers in Freshwater | Dr. Emily E. Curd

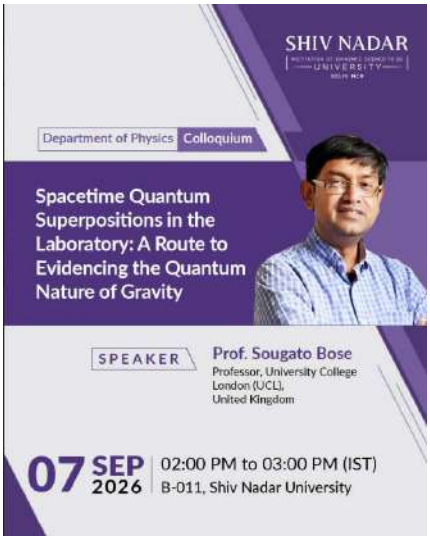
Through BioGen, the students are bringing complex and sometimes surprising developments in biology into conversations that are accessible beyond the laboratory. The initiative reflects the curiosity and scientific engagement of undergraduate students while creating a platform for researchers to share their work and ideas.

Distinguished Guests, Talks and lecture series

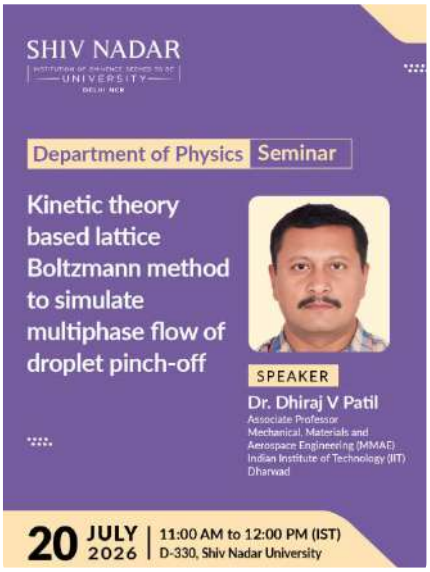












Congratulations to Our Ph.D. Awardees!

AWARDEE	THESIS TITLE	RESEARCH ADVISORS
Dr. Dushyant Kumar Sharma	*Electrochemical Studies on Strontium Titanate-Based Composites for Supercapacitor Applications*	Prof. Susanta Sinha Roy; Co-Advisor: Dr. Binson Babu
Dr. Subhankar Bera	*Photochemical, Electrochemical and Mechanochemical C–H Functionalization for the Generation of Bioactive Heterocycles*	Prof. Subhabrata Sen



SECTION 06

Selected Publications

01 Kajal Uphade, Manuj Ahuja, Pranjit Barman, Tahani A. Alrebdi, **Santosh K. Singh**, **Binson Babu***, **Sharath Kandambeth***. *A Green and Scalable Mechanochemical Route to 2D Conductive Catecholate Metal–Organic Frameworks for Supercapacitor Application.* **Green Chemistry** 28 (2026): 12352–12359.

02 Himanshu Gupta, Aarushi Bansal, Ekta Gupta, **Ashish Gupta**. *Oncogenic Chromodomain Mutations Allosterically Impair TIP60 Acetyltransferase Function Preventing Activation of DNA Repair Genes under Genotoxic Stress.* **FEBS Letters** (2026).

03 **Gaurav Singh**, Sunil Laxman. *Lighting up Mitochondrial Membranes: Reading and Writing the Physical State of the Inner Mitochondrial Membrane.* **Current Opinion in Chemical Biology** (2026).

04 Surabhi Singh, et al., **Nidhi Malhotra**, **Rohini Garg***. *Genome-Wide Identification of G-Quadruplex Forming Regions in Arabidopsis: Unraveling the Role of Pif1-Like Helicase (AtPLH1) in Gene Regulation.* **Plant Stress** 23 (2026): 101517.

05 Adebayo Isaac Olosho, **Prashansa Gupta***, **Bimlesh Lochab***. *Closed-Loop Recyclable Water-Triggered Debond-on-Demand Polybenzoxazine Adhesives Enabled by Orthogonal Covalent Adaptable Networks.* **ACS Materials Letters** (2026).

06 Shivani Yadav, Saad Zafar, **Bimlesh Lochab**. *Visible Light-Driven Benign Synthesis of Benzoxazine-Sulfur Copolymers: High-Performance Materials for Electrochemical Applications.* **Chemical Science** (2026).

07 Dinesh Singh and **Kshatresh Dutta Dubey***. *Tweaking Enzymatic Electric Field can Evolve CYP450-like Activity in Catalase and CYP-P411 Enzymes.* **Journal of Chemical Theory and Computations** (2026).

08 Dinesh Singh, Shakir Ali Siddiqui, Sason Shaik, **Kshatresh Dutta Dubey***. *A Tunable Porphyrin Cage Based on Designed Electric Field for Methane Capture and Oxidation.* **Inorganic Chemistry** (2026).

09 Shant Chhetri, Arsha Beena Kumary, Rajani K. Vijayaraghavan, Dinesh Singh, **Kshatresh Dutta Dubey**, Ratheesh Vijayaraghavan. *Exclusive Pathway Selectivity of Dimorphic Nano Aggregates in an N-Type Semiconductor: Distinct Optical Features and Electron Mobility.* **J. Mat. Chem. C** (2026).

10 Vaibhav Bhatt, **Kshatresh Dutta Dubey***. *A Structural and Dynamic Perspective on Xenobiotic Metabolism by Cytochrome P450.* **ACS Bio & Med Chem Au** (2026).

11 Sahana Y. K., Vasanthapandiyan Mari, **Naiwrit Karmodak**. *Design Principles for Tunable Electrocatalysis via Electronic Structure and Orbital Interactions in Single-Atom Catalysts.* **Chem. Commun.** (2026).

12 Vasanthapandiyan Mari, **Naiwrit Karmodak**. *Frontier Orbital Engineering Enables Predictive Control of CO_2 Reduction Selectivity in Single-Atom Catalysts.* **ACS Catalysis** (2026).

13 Devid Sahu, Joytika Kaur, Nihar Puthin, Sweta Kumari, Archit Somani, **Nidhi Malhotra***. *CMAdb: A Structurally Annotated Database of Chaperone-Mediated Autophagy Substrates.* **BMC Bioinformatics** (2026).

14 Biswajit Mohanty and **Parthapratim Munshi***. *From Binding Pocket to Bilayer: Multiscale Structure-Based Screening of Active VEGFR2 Kinase Inhibitors with Membrane Permeation Insights.* **Materials Advances** (2026).

15 Biswajit Mohanty* and **Parthapratim Munshi***. *Molecular Recognition of VEGF165 by DNA Aptamers: Insights from an Integrated Computational Framework.* **RSC Advances** (2026).

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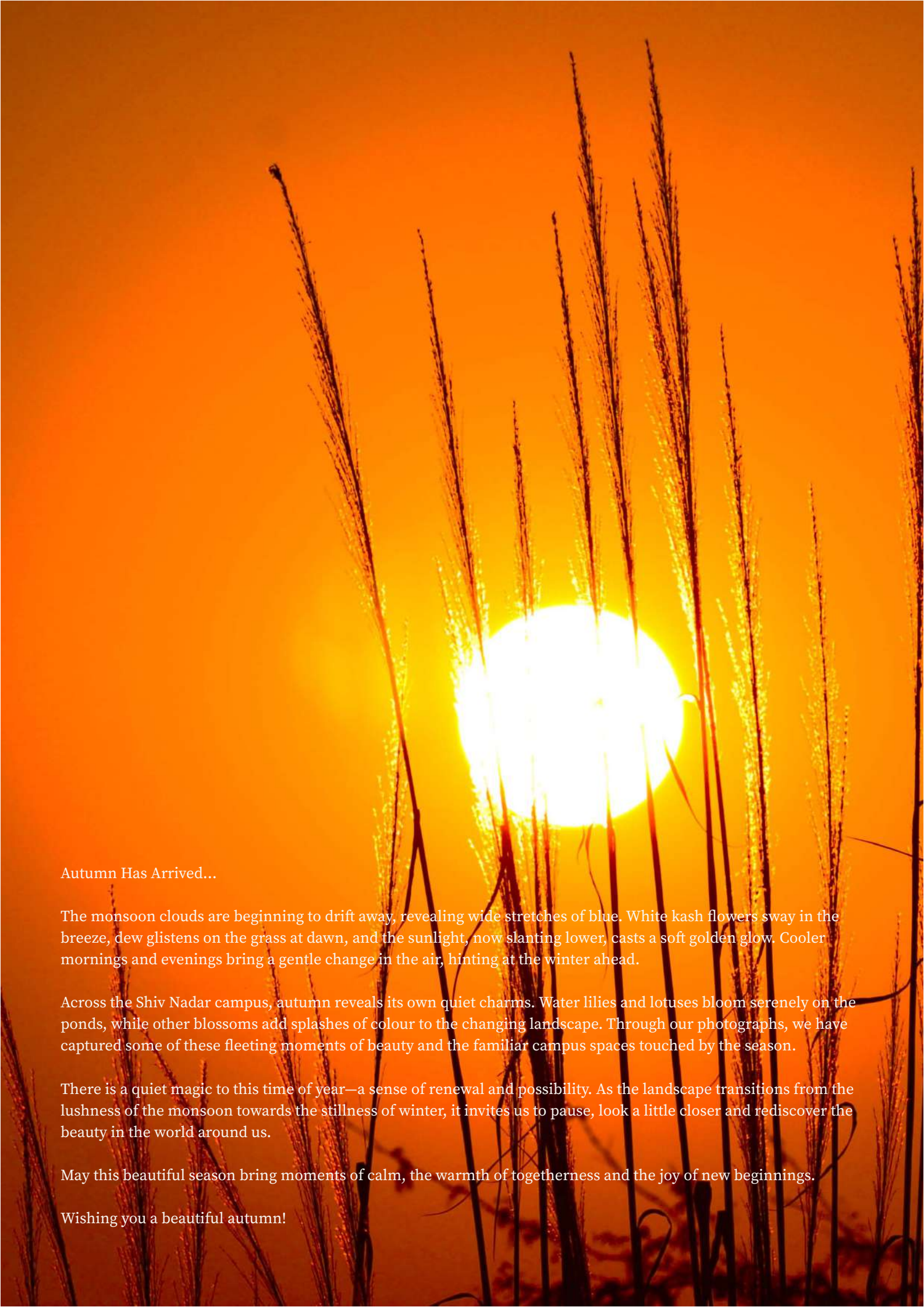
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Autumn Has Arrived...

The monsoon clouds are beginning to drift away, revealing wide stretches of blue. White kash flowers sway in the breeze, dew glistens on the grass at dawn, and the sunlight, now slanting lower, casts a soft golden glow. Cooler mornings and evenings bring a gentle change in the air, hinting at the winter ahead.

Across the Shiv Nadar campus, autumn reveals its own quiet charms. Water lilies and lotuses bloom serenely on the ponds, while other blossoms add splashes of colour to the changing landscape. Through our photographs, we have captured some of these fleeting moments of beauty and the familiar campus spaces touched by the season.

There is a quiet magic to this time of year—a sense of renewal and possibility. As the landscape transitions from the lushness of the monsoon towards the stillness of winter, it invites us to pause, look a little closer and rediscover the beauty in the world around us.

May this beautiful season bring moments of calm, the warmth of togetherness and the joy of new beginnings.

Wishing you a beautiful autumn!