

GNIPST BULLETIN

LIFE-SCIENCE

VOLUME 4 ISSUE 5



Quote of the Month

"The greatest obstacle to discovery is not ignorance—it is the illusion of knowledge." — Daniel J. Boorstin



IN REFLECTION AND VISION

The Director's Note

It is with great pride that we present Volume 4, Issue 5 of the GNIPST Bulletin, a vibrant reflection of our collective academic spirit and scientific inquiry. At Guru Nanak Institute of Pharmaceutical Science and Technology- Life Science, we remain committed to fostering a culture of excellence through a blend of rigorous academics, practical exposure, and innovative thinking. The life sciences are rapidly evolving, and our students and faculty continue to contribute meaningfully to this dynamic field.

This bulletin highlights achievements, new initiatives, and the creative energy that drives GNIPST forward. We extend our warmest regards to all readers and well-wishers. May this edition inspire continued learning, collaboration, and progress as we collectively strive toward growth, discovery, and success.



Dr. Abhijit Sengupta

The Principal's Note



Dr. Lopamudra Datta

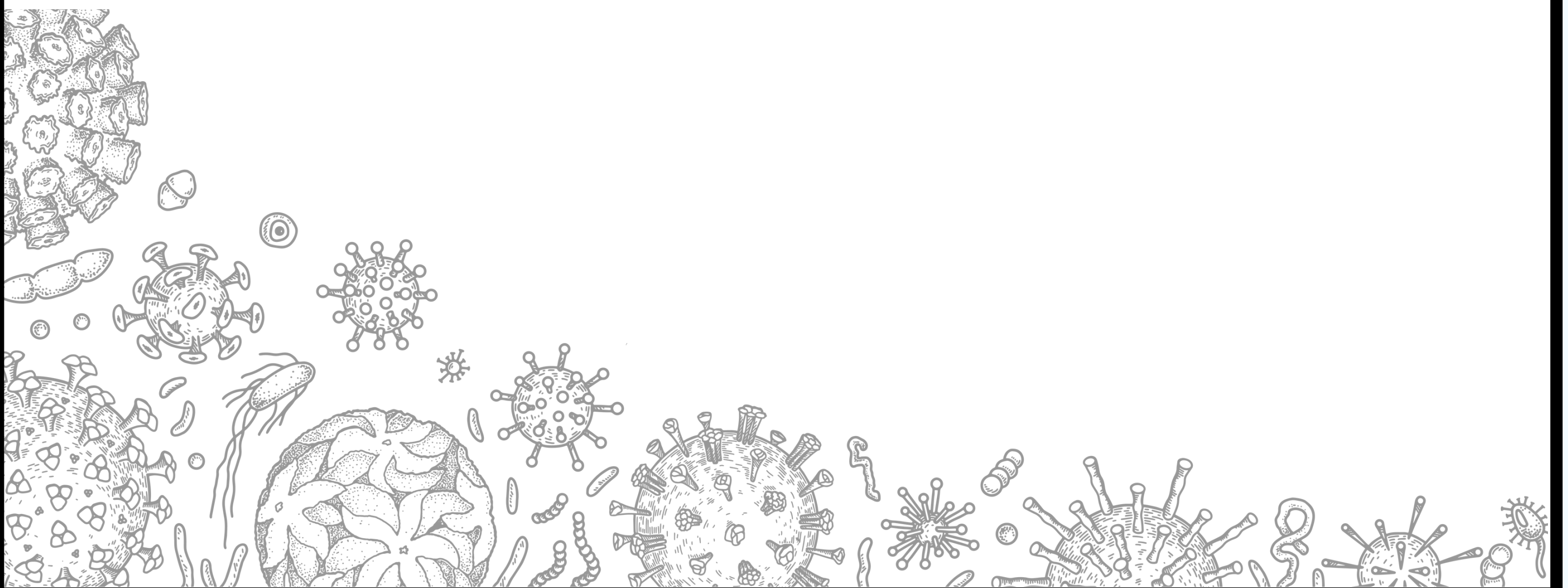
We are delighted to present Volume 4, Issue 5 of the GNIPST Bulletin – Life Science, showcasing the continued journey of our commitment to academic excellence, research, and innovation. As one of the leading institutions in West Bengal, GNIPST remains dedicated to providing advanced laboratory facilities, practical learning experiences, and industry-relevant internships, while nurturing our students with a strong foundation in scientific knowledge, ethical values, and critical thinking.

We extend our warm regards to all our readers, contributors, and well-wishers. Your continued support and enthusiasm encourage us to strive for excellence and to keep advancing in our mission of education, discovery, and service. We look forward to sharing many more stories of achievement, growth, and inspiration in the issues ahead.



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SCIENCE UPDATE

Self-Reproducing Synthetic Cells Demonstrate Darwinian Evolution



Scientists at Harvard University have achieved a major milestone in synthetic biology by creating artificial cell-like structures from non-living chemical components that can self-replicate and exhibit evolutionary behavior. These synthetic cells are capable of producing copies of themselves, and over multiple generations, variations arise that can be subjected to natural selection. The experiment provides a powerful model for understanding how life may have originated on Earth from simple chemical systems billions of years ago. Researchers observed that some variants reproduced more efficiently than others, demonstrating principles similar to Darwinian evolution. Beyond answering fundamental questions about the origin of life, this breakthrough could facilitate the development of programmable biological systems for drug delivery, biosensing, environmental monitoring, and industrial biotechnology.

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Microfluidic Lab-on-a-Chip Devices Transform Clinical Diagnostics Photosynthesis-Inspired Therapy Shows Promise for Eye Disorders

Researchers have developed an innovative treatment strategy inspired by plant photosynthesis to combat oxidative stress in eye diseases. Using bioengineered compounds derived from spinach chloroplast components, scientists created eye drops capable of generating antioxidant molecules when exposed to light. In animal studies, treated mice showed improved tear production and reduced inflammation associated with dry eye disease. Oxidative stress is a major contributor to numerous ocular disorders, including age-related macular degeneration and corneal damage. By harnessing biological mechanisms found in plants, the research introduces an entirely new therapeutic approach for ophthalmology. Although still in the experimental stage, the technology may eventually provide a non-invasive treatment option for millions of patients suffering from chronic eye conditions worldwide.



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Artificial Womb Research Supports De-Extinction Efforts

Advances in reproductive biotechnology are supporting ambitious efforts to revive extinct or endangered species. Researchers working on de-extinction projects are developing artificial womb systems capable of sustaining mammalian development outside the body for extended periods. These technologies could eventually support the gestation of genetically engineered embryos carrying traits from extinct species such as the woolly mammoth. Beyond conservation applications, artificial womb research may also provide valuable insights into developmental biology, reproductive medicine, and neonatal care. While significant scientific and ethical challenges remain, the field highlights the growing intersection of genetics, developmental biology, and conservation science.

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SCIENCE UPDATE

Personalized Cancer Vaccines Show Promising Clinical Results



Personalized cancer vaccines are emerging as a powerful new approach to cancer treatment. Unlike traditional vaccines that prevent infectious diseases, these therapies are designed to stimulate a patient's immune system to recognize and attack tumor-specific mutations. Using genomic sequencing and advanced computational tools, researchers identify unique cancer antigens and create customized vaccines tailored to individual patients. Recent clinical trials involving melanoma and other cancers have demonstrated encouraging results, including improved immune responses and reduced disease recurrence. Many of these vaccines utilize mRNA technology similar to that employed during the COVID-19 pandemic. Scientists believe personalized cancer vaccines may eventually become a standard component of cancer therapy, particularly when combined with immunotherapies such as immune checkpoint inhibitors.

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Marine Microbiomes Found to Influence Global Climate Processes

New research has revealed that marine microorganisms play a far greater role in Earth's climate system than previously recognized. Scientists discovered that microbes associated with fish and other marine organisms contribute significantly to the formation of calcium carbonate and carbon cycling in the oceans. These biological processes influence carbon sequestration, ocean chemistry, and long-term climate regulation. Because microorganisms respond rapidly to environmental changes, they may serve as sensitive indicators of ecosystem health and climate change impacts. Understanding the interactions between marine microbiomes and global biogeochemical cycles is becoming increasingly important for climate modeling and conservation efforts. The findings highlight the profound influence of microscopic life on planetary-scale environmental processes.



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Human Cell Atlas Project Maps New Cellular Landscapes

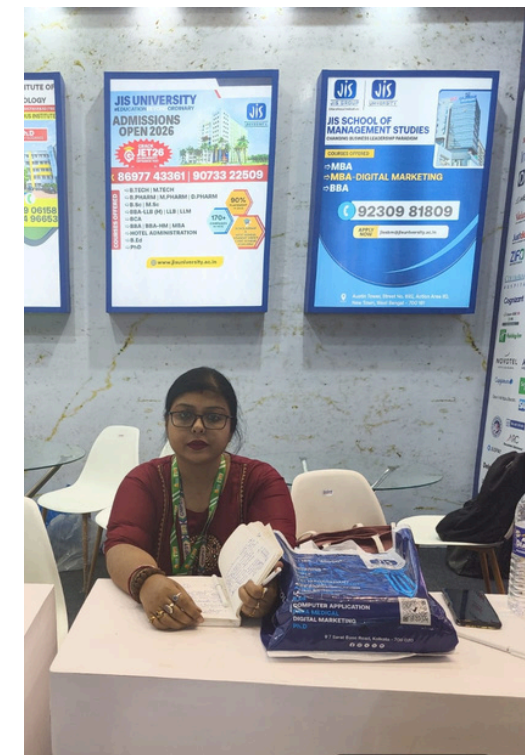
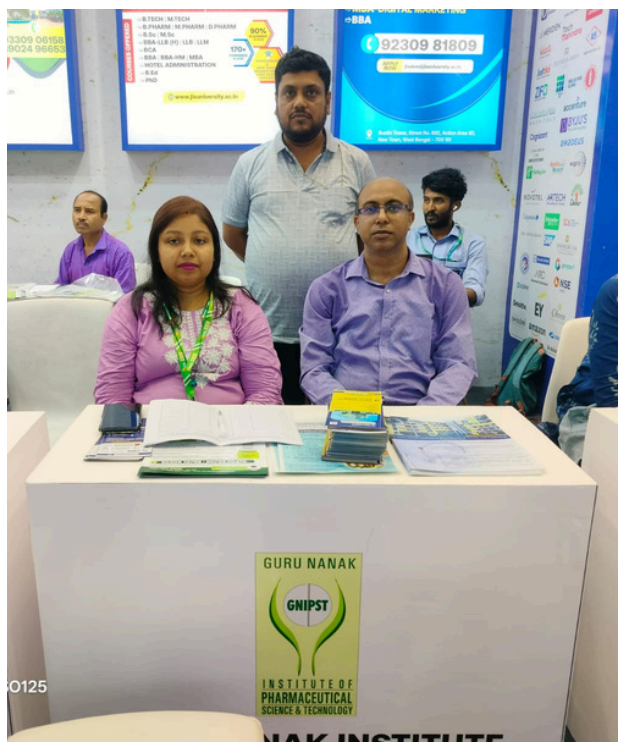
The international Human Cell Atlas initiative continues to revolutionize biomedical science by creating comprehensive maps of every cell type in the human body. Using advanced single-cell sequencing technologies, researchers have identified previously unknown cell populations and characterized their molecular signatures. Recent discoveries are improving understanding of organ development, immune responses, aging, and disease progression. These cellular maps provide an invaluable reference for studying cancer, autoimmune disorders, infectious diseases, and genetic conditions. By comparing healthy and diseased tissues at single-cell resolution, scientists can identify potential therapeutic targets and biomarkers for early diagnosis. The Human Cell Atlas is expected to become one of the most important biological resources of the century, supporting precision medicine and personalized healthcare.



CAMPUS PULSE



National Seminar on Cancer Detection Methodologies in the Month of May



GNIPST at Educational Expos



MOU Signed Between GNIPST and International Vedanta society birati



GNIPST receives Education Eminence Award 2026 in the Category - Best Pharmacy College



ACTIVITY CORNER

International Day for Biological Diversity – May 22

Observed annually on 22 May, the International Day for Biological Diversity (IDB) highlights the vital role that biodiversity plays in sustaining life on Earth. Biodiversity encompasses the variety of all living organisms—including plants, animals, microorganisms, and the ecosystems they inhabit. It provides essential services such as food production, clean water, pollination, climate regulation, and disease control. Despite its importance, biodiversity is declining at an unprecedented rate due to habitat destruction, pollution, climate change, overexploitation of natural resources, and invasive species. The United Nations established this observance to increase awareness and encourage global action to conserve biological diversity and ensure the sustainable use of natural resources. The day serves as a reminder that human health, economic prosperity, and environmental stability are deeply interconnected with the health of ecosystems. Protecting biodiversity is therefore not only an environmental responsibility but also a critical step toward achieving sustainable development and securing a resilient future for generations to come

Scrambled Words

NIOEXNCTTI →

SETPEICIAON →

NOEVRCSAITON →

DIBOEVRSTY →

RAEGFATNTMION →



To Submit Your Answers!



ANSWER KEY (VOLUME 4 ISSUE 3)

HTLAEHCARE → HEALTHCARE
NTOIVPRENE → PREVENTION
LLAEWBNEIG → WELLBEING
NCTAAIVNCOI → VACCINATION
NTRITUNOUI → NUTRITION
NOISULCNI → INCLUSION

SHOUT OUT TO THE WINNER OF ACTIVITY CORNER OF VOLUME 4 ISSUE 4



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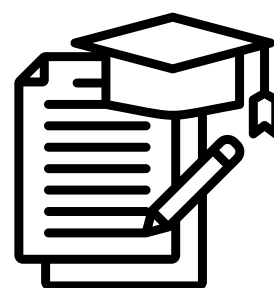
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- B.Sc in Biotechnology
- B.Sc in Microbiology
- B.Sc in Genetics
- B.Sc in Medical Lab Technology
- BBA in Hospital Management



Life Science PG Courses

- M.Sc in Biotechnology
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"The best is yet to come. Here's to a year of new beginnings and limitless possibilities!"

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