

GURU NANAK COLLEGE OF PHARMACEUTICAL SCIENCES DEHRADUN

Affiliated to Veer Madho Singh Bhandari Uttarakhand Technical University

Approved by Pharmacy Council of India · Established 2018



PHARMA INSIGHT

Volume III — Annual Magazine

Academic Year 2024–25

August 2024 – July 2025

— *Institutional Highlights · Global Pharma Developments · Student Excellence* —

FROM THE CEO'S DESK

A Message to the GNCPs Community · August 2022 – January 2023



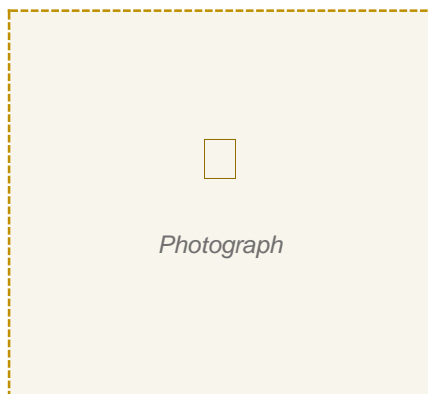
As we present the inaugural issue of our college newsletter, I feel a profound sense of pride in the collective achievements of our institution. Over the past six months, from August 2022 to January 2023, Guru Nanak College of Pharmaceutical Sciences has witnessed remarkable growth and dynamic engagement across academic, cultural, and social domains. From insightful seminars on pharmaceutical research and workshops on intellectual property, to vibrant celebrations of our national and cultural heritage, energetic sports events, and meaningful community outreach initiatives, this period truly reflects the spirit and dedication of our academic community.

I extend my sincere appreciation to the editorial team for their dedication and creativity in bringing together this publication. Their efforts have ensured that our collective accomplishments are thoughtfully documented and shared.

— Mr. Bhupinder Singh Arora, CEO

FROM THE PRINCIPAL'S DESK

Principal's Foreword — Academic Year 2024–25



The 2024–25 academic year has been, without question, one of the most vibrant in the history of Guru Nanak College of Pharmaceutical Sciences, Dehradun. Our 2024–25 final-year students have undertaken dissertation projects that are, in aggregate, among the most ambitious the College has ever witnessed. Our students have returned with national-level recognition from chess, running, and entrepreneurship competitions. Our faculty have continued to publish and to mentor with distinction. Alongside these institutional achievements, the global pharmaceutical landscape has undergone transformations that our graduates will navigate throughout their careers — from the arrival of non-opioid pain therapy to the launch of indigenous Indian CAR-T cell therapy at globally-disruptive price points. This third annual magazine captures both dimensions — the life of our campus and the life of our profession — and I hope it conveys to every reader the authentic excitement of this moment in pharmacy education.

— Dr. S. Duraiavel, Principal

FROM THE EDITOR'S DESK

Editor's Note — Volume III — Annual Magazine



The third annual magazine represents, by some editorial measures, the most ambitious volume we have published. The institutional facts from the 2024-25 academic year are themselves substantial — national-level competition wins, 29 final-year dissertation projects, a full calendar of events and activities — and the global pharmaceutical developments of the same period are no less remarkable. We have tried to do justice to both dimensions and hope the resulting volume captures the extraordinary energy of this year in our institution's life and in the wider profession.

— Ms. Kriti Dabral, Editor

ABOUT THE COLLEGE

Guru Nanak College of Pharmaceutical Sciences, Dehradun

Guru Nanak College of Pharmaceutical Sciences, Dehradun, was established in 2018 under the aegis of the Guru Nanak Educational Trust. The College is affiliated with Veer Madho Singh Bhandari Uttarakhand Technical University and is approved by the Pharmacy Council of India. Situated in Jhajhra on the Chakrata Road in Dehradun, Uttarakhand, the institution offers a four-year undergraduate Bachelor of Pharmacy programme designed to produce graduates who are technically competent, ethically grounded, culturally rooted, and professionally ready.

The College's vision is to emerge as a centre of excellence in pharmaceutical education and research, producing professionals who contribute meaningfully to healthcare, community well-being, and the broader pharmaceutical industry. Its mission is pursued through a balanced curriculum that combines rigorous academic instruction with co-curricular and extra-curricular opportunities — from student clubs in sports, culture, research, and entrepreneurship, to industry-academia partnerships, to community outreach programmes, to a steady calendar of guest lectures, workshops, and national-day observances.

A dedicated faculty team, led by the Principal and supported by the Heads of Department and senior professors, guides students through a programme that is both demanding and deeply rewarding. State-of-the-art laboratories, a well-stocked library, modern classroom infrastructure, hostels, and recreational facilities support the student experience.

Above all, the College prides itself on being a community — one in which faculty, students, and staff together shape an environment of learning, warmth, and purpose. This newsletter is one expression of that community spirit.

IN THIS MAGAZINE

- | | | |
|-----------|---|---|
| 01 | From the CEO's Desk | <i>A welcome note from the head of our Institution</i> |
| 02 | From the Principal's Desk | <i>Principal's foreword for the year</i> |
| 03 | From the Editor's Desk | <i>Notes on this magazine's contents</i> |
| 04 | About the College | <i>A brief overview of GNCPS</i> |
| 05 | Academic Year at a Glance | <i>Institutional facts and figures for the year</i> |
| 06 | College Highlights — The Year at GNCPS | <i>Key institutional developments, achievements, and milestones</i> |
| 07 | Global Pharmaceutical Developments | <i>11 major worldwide developments that shaped the profession</i> |
| 08 | Campus Highlights Recap | <i>The events, awards, and projects that defined our year</i> |
| 09 | Faculty Corner | <i>Reflections from the teaching community</i> |
| 10 | Student Voices | <i>Reflections from the student community</i> |
| 11 | Publications & Research Output | <i>Scholarly contributions of faculty and students</i> |
| 12 | Looking Ahead | <i>What the coming academic year holds</i> |
| 13 | Credits & Acknowledgements | <i>The team behind this magazine</i> |

COLLEGE HIGHLIGHTS

Institutional Snapshot — Academic Year 2024–25

The 2024-25 academic year was a remarkable chapter in the institutional journey of Guru Nanak College of Pharmaceutical Sciences, Dehradun. The year witnessed the commencement of final-year dissertation projects for the 2024-25 batch, multiple national-level competition victories, and the expansion of faculty research activities. Student participation in co-curricular and extra-curricular events reached new heights, and the College continued to strengthen its institutional quality framework. Above all, this was the year in which institutional identity matured — visible in the confidence of student leaders, the sophistication of faculty research output, and the scale of community engagement.

HEADLINE HIGHLIGHTS

29 Final-Year Dissertation Projects	Launched in August 2024 under the guidance of Ms. Kriti Dabral and Mrs. Archana Rautela
13 National-Level Awards Won	Chess (1st and 3rd), 500-meter running, Business Ethics, Rural Entrepreneurship, and Student Startup Demo Day
70+ Documented Activities	Events, competitions, celebrations, research programmes across a single academic year
Multiple Student Publications	Including IJPHR, Journal of Chemical Health Risks, and International Journal of Pharma Professional's Research
Research Club Expansion	Regular journal clubs, translational research seminars, AI-in-Pharma workshop series

INFRASTRUCTURE & FACILITIES

- ▶ Significant expansion of laboratory infrastructure to support 2024-25 dissertation projects — including equipment for herbal formulation development, phytochemical analysis, and wound-healing gel preparation.
- ▶ Dedicated project laboratories made available for final-year students to conduct supervised experimental work.
- ▶ Expanded library and e-resource subscriptions to support research activities across final-year cohort.
- ▶ Campus infrastructure upgraded across laboratories, classrooms, and common areas during the year.

RESEARCH & PUBLICATIONS

- ▶ Student research papers published in multiple peer-reviewed journals during 2025, including work on herbal mosquito repellent cream, phytochemical investigation of *Lantana camara*, and intelligent patient counselling for AMR.
- ▶ Faculty research publications appeared in *Waterlines* (Urban WASH Planning series), *Food Safety and Health*, *Water Air & Soil Pollution*, and the *International Journal of Pharmaceutical Sciences and Research*.
- ▶ Research Club hosted thematic workshops on Advanced Research Methodology, Grant Writing, AI in Pharma Research, and Systematic Review Methodology.
- ▶ Faculty collaborated on multi-author research spanning pharmaceutical technology, water chemistry, and phytoremediation.

STUDENT ACHIEVEMENTS

- ▶ National-level Chess Championship — 1st position by Deepak Bisht, 3rd position by Mohd Shuaib at Madhav University, Rajasthan.
- ▶ National-level 500-meter running — 1st position by Sandeep Pokhriyal, 2nd position by Nikhil Jaiswal at Bareilly International University.
- ▶ Student Startup Demo Day — 1st position by Harsh Pant, 2nd position by Akshit Bhatt, 3rd position by Aditya Kumar.
- ▶ Business Ethics and Rural Entrepreneurship competitions — three positions each, demonstrating breadth of student excellence.

COMMUNITY SERVICE & OUTREACH

- ▶ Expanded community outreach with Tuberculosis Patient Adoption Program led by Dr. Hrushikesh.
- ▶ Blood Donation Camp, Free Eye Check-up Camp, World Heart Day, and World Anesthesia Day observed with public participation.
- ▶ Drug-Free Devbhoomi Campaign conducted in collaboration with state authorities.
- ▶ Health and Hygiene Awareness Camps conducted jointly with Humans for Humanity NGO.

GOVERNANCE

The governance architecture was strengthened during 2024-25 with additional faculty inductions, expansion of committee responsibilities, and consistent attention to compliance and academic quality. The Academic Council, IQAC, and Research Committee met regularly throughout the year and generated actionable guidance on curriculum review, assessment, and research-output tracking. Institutional quality-assurance initiatives advanced meaningfully during the year, with documentation, policy frameworks, and programme outcomes mapping coming together coherently.

Global Pharma Developments

11 major developments that shaped the world of pharmacy during Academic Year 2024–25

The pharmaceutical profession is in constant evolution. The following pages document the most consequential developments worldwide during the period covered by this magazine — approvals, policy shifts, scientific breakthroughs, and industry transformations that our students and graduates will navigate throughout their careers.

FDA Approves Journavx (Suzetrigine) — First Non-Opioid Acute Pain Drug in a Generation

On 30 January 2025, the FDA approved Journavx (suzetrigine), developed by Vertex Pharmaceuticals, for the treatment of moderate-to-severe acute pain in adults. Journavx is a first-in-class selective inhibitor of the voltage-gated sodium channel Nav1.8, which is expressed selectively in peripheral pain-signalling neurons. The approval was widely hailed as the most significant innovation in acute pain management in more than two decades and a potentially pivotal contribution to addressing the long-running opioid crisis.

The scientific achievement represented by Journavx was considerable. Efforts to develop selective Nav1.8 inhibitors had occupied multiple pharmaceutical companies over two decades, with many clinical candidates failing due to insufficient efficacy, off-target sodium channel activity, or tolerability issues. Suzetrigine distinguished itself through high selectivity for Nav1.8 over the closely-related Nav1.5 (cardiac) and Nav1.7 (central nervous system) channels, allowing pain signals to be attenuated at the periphery without affecting cardiac function or producing the sedation and addiction liability that has plagued opioid analgesics.

For pharmacy practice worldwide, Journavx offers a long-awaited alternative to opioids for post-surgical and acute musculoskeletal pain — the clinical settings in which opioid exposure has been most strongly associated with long-term dependence. The U.S. Department of Defense, the Department of Veterans Affairs, and numerous health systems began reviewing their acute pain protocols to incorporate suzetrigine as a first-line non-opioid option. In India, where opioid prescribing has historically been tightly restricted and where acute pain management in surgical and obstetric settings often relies on NSAIDs and weak opioids, suzetrigine's arrival on the global market is expected to reshape pain-management protocols meaningfully over the coming years. For student-pharmacists, the approval provides a clinically and pharmacologically rich case study in target-class engineering, selectivity-driven drug design, and the ongoing societal project of replacing addictive analgesics with safer alternatives.



Mounjaro Launched in India — Tirzepatide Reaches Indian Diabetes and Obesity Market

In March 2025, Eli Lilly commercially launched Mounjaro (tirzepatide) in India — the first major emerging market roll-out of the transformational GIP/GLP-1 co-agonist class. The launch, priced to permit broader access than U.S. price levels, signalled the beginning of what many Indian endocrinologists and public-health observers expect to be a fundamental reshaping of the country's diabetes and obesity therapeutic landscape. India carries the world's largest burden of diabetes in absolute terms — with over 100 million affected individuals — and the country's growing obesity epidemic affects an estimated 135 million adults.

Mounjaro's Indian launch was accelerated by the August 2024 CDSCO regulatory liberalisation waiving local Phase III trials for drugs approved in major reference jurisdictions. The speed of the Indian launch — within roughly three years of initial U.S. approval — marked a departure from the historical four-to-six-year lag in innovative-drug availability. Novo Nordisk followed with plans to launch Wegovy (semaglutide) for obesity in India in 2025, and oral GLP-1 formulations from multiple developers are expected to reach the Indian market in the latter half of the decade.

For Indian pharmacy practice, the GLP-1 wave introduces a rich set of new professional responsibilities. Pharmacists are increasingly trained in pen-injector technique counselling, dose-escalation protocols for managing gastrointestinal side effects, and the integration of pharmacotherapy with dietary and behavioural interventions. Payer dynamics remain complex — most Indian patients pay for chronic medications out-of-pocket, and the affordability of GLP-1 therapy remains a constraint despite emerging-market pricing. For GNCPS students, the clinical, economic, and behavioural dimensions of the GLP-1 era offer an unusually rich teaching case in how a new drug class transforms clinical practice, industry economics, and the day-to-day work of the pharmacist over a remarkably short time horizon.



Medicare IRA Negotiated Drug Prices Announced — Taking Effect January 2026

On 15 August 2024, the U.S. Centers for Medicare and Medicaid Services announced the final negotiated prices for the first ten drugs subject to Medicare price negotiation under the Inflation Reduction Act. The announced prices, which take effect on 1 January 2026, represented discounts of 38% to 79% from prior list prices. The negotiation process — the first of its kind in U.S. Medicare's six-decade history — concluded without major litigation-based disruption and established a durable precedent for subsequent rounds of negotiation, with 15 more drugs expected to be selected annually through the latter half of the 2020s.

The negotiated drugs included therapies for cardiovascular disease (Eliquis, Xarelto, Entresto), diabetes (Jardiance, Januvia, Farxiga, NovoLog), cancer (Imbruvica), rheumatology (Enbrel, Stelara). Collectively these medications account for a substantial share of Medicare Part D spending, and the projected savings to the federal government, to state programmes, and to patients reach into the tens of billions of dollars over the first decade of implementation. For participating manufacturers, the compressed prices reshape revenue forecasts and the strategic calculus around biosimilar entry, loss-of-exclusivity planning, and pipeline investment priorities.

For Indian pharmacy and pharmaceutical-industry observers, the IRA negotiations offer important strategic signals. Lower originator prices in the U.S. accelerate the erosion of high-margin first-line therapy, creating both opportunity and challenge for Indian biosimilar and generic manufacturers whose commercial propositions in the U.S. market depend on the price spread between originator and successor products. For pharmacy students, the IRA episode offers a rich case study in pharmacoeconomics, policy implementation, and the evolving role of government as a structuring actor in pharmaceutical markets. The implementation details — pricing transparency, cliff vs. smoothed effects on patient cost-sharing, manufacturer withdrawal dynamics — will continue to unfold through 2026 and beyond, providing ongoing material for the pharmacy-policy curriculum.

MEDICARE TO SAVE \$6 BILLION IN 2026 FROM PART D DRUG PRICING NEGOTIATIONS
Newly-released prices of the first-ever negotiated Medicare Part D prescription drugs

DRUG NAME	MANUFACTURER	LIST PRICE	MEDICARE NEW PRICE
ELIQUIS	BRISTOL MYERS SQUIBB	\$521	\$231
JARDIANCE	BOEHRINGER INGELHEIM	\$573	\$197
XARELTO	J&J	\$517	\$197
IMBRUVICA	J&J	\$14,934	\$9,319
STELARA	J&J	\$13,836	\$4,695
JANUVIA	MERCK	\$527	\$113
FARXIGA	ASTRAZENECA	\$556	\$178
ENTRESTO	NOVARTIS	\$628	\$295
ENBREL	AMGEN	\$7,106	\$2,355
FIASP	NOVO NORDISK	\$527	\$119

FDA Approves Yeztugo (Lenacapavir) — Twice-Yearly HIV Prevention Injection

On 18 June 2025, the FDA approved Yeztugo (lenacapavir), developed by Gilead Sciences, as pre-exposure prophylaxis (PrEP) to reduce the risk of HIV infection in at-risk adults and adolescents. Yeztugo is administered by subcutaneous injection once every six months — a dosing schedule that represents the most convenient HIV PrEP regimen ever developed and is expected to transform the HIV prevention landscape globally. The pivotal PURPOSE-1 trial in cisgender women in Africa demonstrated 100% efficacy in preventing HIV infection, an unprecedented result in an HIV prevention trial.

Lenacapavir belongs to a first-in-class family of capsid inhibitors that act by disrupting the HIV-1 viral capsid at multiple points in the replication cycle. The drug had been previously approved in 2022 for the treatment of multidrug-resistant HIV as Sunlenca, but its role in HIV prevention — enabled by a long-acting subcutaneous formulation — is the setting in which the molecule's public-health impact is likely to be greatest. The Gilead CEO characterised the approval as "one of the most historic scientific breakthroughs of our time," with the potential to help end the HIV epidemic.

The global-health implications of Yeztugo are substantial. The World Health Organization and UNAIDS have long sought a durable, user-friendly PrEP product that would overcome the adherence challenges associated with daily oral pills. The June 2025 approval coincided with intense international debate about HIV/AIDS funding, including proposed U.S. budget cuts to PEPFAR and domestic HIV prevention programmes. In India, with an HIV-positive population of over 2.3 million and ongoing concerns about epidemic trajectory in certain demographic and geographic sub-populations, the arrival of long-acting PrEP represents a meaningful addition to the prevention toolkit. For pharmacy practice, HIV prevention counselling — historically centred on daily oral Truvada or Descovy — is entering a new era in which injection-schedule adherence, clinic-integration workflows, and multi-month product access form the core of the pharmacist's contribution.

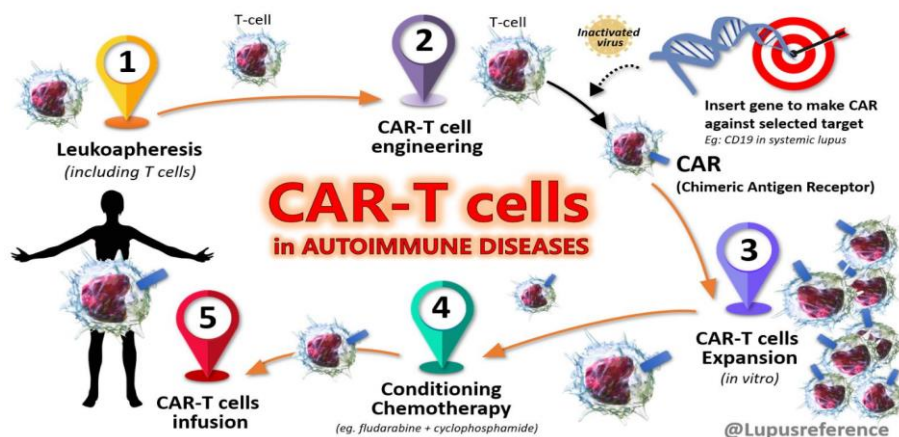


CAR-T Cell Therapies Expand Beyond Haematological Malignancies — First Autoimmune Disease Trials

During the 2024-25 academic year, chimeric antigen receptor (CAR) T-cell therapy — originally approved in 2017 for B-cell leukaemias and lymphomas — expanded decisively into autoimmune disease indications. Early clinical trials of CAR-T therapies targeting CD19 or BCMA-bearing B-cells demonstrated remarkable efficacy in systemic lupus erythematosus (SLE), systemic sclerosis, myasthenia gravis, and idiopathic inflammatory myopathy. In several published case series, CAR-T-treated SLE patients achieved drug-free remission for multiple years following a single infusion — an outcome previously unimaginable in an autoimmune disease long managed with lifelong immunosuppression.

The rationale for CAR-T in autoimmunity is mechanistically elegant. Many autoimmune diseases are sustained by persistent populations of autoreactive B-cells that produce disease-driving autoantibodies and activate pathogenic T-cell responses. CAR-T cells engineered to recognise B-cell surface markers (CD19, BCMA) deplete those pathogenic B-cells far more completely and deeply than any antibody-based therapy, enabling the patient's immune system to "reset" and, in many cases, redevelop from a naive state without reacquiring the original autoreactivity. The autoimmune-CAR-T field moved from isolated case reports to multiple sponsor-led Phase 1 and 2 trials over the 2024-25 period, involving both academic pioneers and major pharmaceutical firms.

The implications for pharmacy practice are profound. CAR-T manufacturing, cold-chain logistics, cytokine-release-syndrome management, and long-term safety monitoring represent specialised knowledge domains previously confined to oncology hospital practice. As CAR-T expands into rheumatology, neurology, and other autoimmune specialties, multidisciplinary teams — including clinical and hospital pharmacists — will increasingly need competence in cell therapy. For India, the emergence of indigenous CAR-T platforms, led by the Indian Institute of Technology Bombay and by companies including ImmunoACT, places the country at the frontier of affordable cell therapy. NexCAR19, India's first indigenous CAR-T therapy, launched commercially in 2024 at a fraction of international prices and signalled the beginning of an Indian cell-therapy industry with global implications for access.



FDA Qualifies First AI Tool for Drug Development — Liver Biopsy Scoring Platform

In December 2024, the FDA qualified its first artificial-intelligence-based tool approved for use in drug development clinical trials — a cloud-based computational pathology platform that helps pathologists score liver biopsies in trials of therapies for non-alcoholic / metabolic-associated steatohepatitis (NASH/MASH). The qualification represented the first formal regulatory acceptance of an AI tool as part of the clinical trial process itself rather than as an auxiliary research aid.

The specific tool supports pathologist scoring of histological features in liver biopsies — a notoriously variable and labour-intensive element of NASH/MASH clinical trials that has complicated the interpretation of many previous studies. By providing consistent, computable, auditable scoring augmented by expert pathologist review, the AI platform addresses a longstanding bottleneck in the evaluation of liver-disease therapeutics. The broader significance, however, lies in the regulatory precedent: the FDA's qualification pathway now accommodates AI tools as validated components of clinical development, opening the door to a wave of similar qualifications in other imaging-intensive, endpoint-heavy clinical settings such as oncology radiology, ophthalmology, and dermatology.

The 2024-25 period also saw AI drug discovery partnerships reach unprecedented contractual scale, with total announced "biobucks" exceeding USD 15 billion in the year. Major partnerships between Isomorphic Labs and both Novartis and Eli Lilly, between Recursion and Genentech, and between several other AI-first drug discovery firms and pharmaceutical multinationals accounted for much of this deal value. Industry analysts noted that actual upfront cash payments often represented just 2-5% of headline deal value — reflecting appropriate caution about whether AI can deliver sustained clinical success — but the structural position of AI in the pharmaceutical R&D stack has clearly solidified. For pharmacy students, the AI-in-pharma story now extends well beyond drug discovery to clinical trial operations, regulatory science, pharmacovigilance, and precision-medicine decision support, demanding early and sustained engagement with computational tools as a core competency.

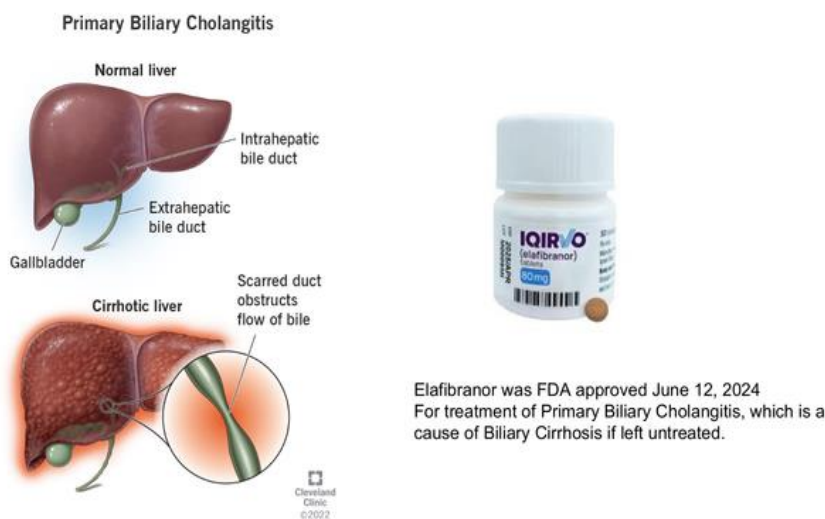


Iqirvo (Elafibranor) and Livdelzi Approved for Primary Biliary Cholangitis

On 10 June 2024, the FDA granted accelerated approval to Iqirvo (elafibranor), developed by Ipsen, for the treatment of primary biliary cholangitis (PBC) — a chronic autoimmune liver disease that, if untreated, progresses to cirrhosis, liver failure, and death. Iqirvo is a first-in-class dual agonist of the peroxisome proliferator-activated receptors alpha and delta (PPAR α/δ), representing a novel therapeutic mechanism for a disease in which treatment options had remained largely unchanged since the original approval of ursodeoxycholic acid decades earlier. A second PBC therapy, Livdelzi (seladelpar), received approval in August 2024, giving patients two new disease-modifying options within a matter of weeks.

Primary biliary cholangitis is an autoimmune liver disease that predominantly affects middle-aged women and causes progressive destruction of the small bile ducts within the liver. For patients in whom first-line ursodeoxycholic acid fails to achieve biochemical response — approximately 30-40% of the diagnosed population — the prognosis has historically been poor. The 2024 approvals of Iqirvo and Livdelzi fundamentally changed this therapeutic landscape and offered second-line options that meaningfully reduce alkaline phosphatase and other biochemical markers associated with clinical progression.

The dual 2024 PBC approvals exemplify a broader pattern in 2020s pharmaceutical development: rare-disease therapeutics launched with precise mechanistic rationales, supported by expedited FDA review pathways, and reaching small but critical patient populations whose needs had been inadequately addressed for decades. For pharmacy practice, such approvals introduce specialised counselling requirements around dosing, drug-interaction management, monitoring for hepatotoxicity and other class effects, and the emotional dimensions of a chronic progressive disease. In India, where PBC remains underdiagnosed but is increasingly recognised as gastroenterology awareness improves, the availability of these new agents represents a meaningful addition to the hepatology formulary.



WHO Issues Major Update to Model List of Essential Medicines — 2025 Revision

In September 2025, the World Health Organization published the 24th Model List of Essential Medicines and the 10th Model List of Essential Medicines for Children. The update incorporated multiple high-impact additions including GLP-1 receptor agonists for diabetes, long-acting injectable HIV prevention products, and a number of advanced oncology therapies — reflecting a substantial modernisation of the WHO's view of which medicines are essential to functional health systems worldwide.

The WHO Essential Medicines Lists are among the most influential policy documents in global health. First published in 1977, they have guided the formularies of hospital systems, public health programmes, and insurance schemes in more than 150 countries. Inclusion on the list confers strong policy signals about pricing pressure, procurement priority, and generic-versus-originator tender policy. For the major pharmaceutical companies producing on-list products, inclusion brings both opportunity — through volume — and challenge, through structured procurement that compresses prices. For Indian generic manufacturers, who supply large portions of the essential medicines demand across Africa, South Asia, and Latin America, the list is a foundational commercial document.

The 2025 revision's inclusion of GLP-1 receptor agonists was particularly consequential. It represents the WHO's formal recognition that obesity and type-2 diabetes are chronic diseases requiring pharmacotherapy accessible to all populations — not merely cosmetic or lifestyle-adjacent conditions. The inclusion will accelerate pressure on originator manufacturers to extend access to emerging-market settings through tiered pricing, voluntary licensing to generic producers, or other mechanisms. For Indian pharmacy practice and the country's public health system, the WHO listing aligns with the domestic push to bring GLP-1 products within reach of Indian patients under government schemes such as Ayushman Bharat and Pradhan Mantri Jan Aushadhi Pariyojana — a process that will unfold through the remainder of the decade.

WHO GUIDELINES ON GLP-1 DRUGS FOR OBESITY

ABOUT GLP-1

- Increase insulin secretion
- Reduce appetite

WHO GUIDELINES

- Conditional use of liraglutide, semaglutide, tirzepatide
- Diet and physical activity needed

THREE-PILLAR STRATEGY

- Strong population policies
- Targeted screening

HEALTH EQUITY GAP Limited access, affordability

THREE-PILLAR STRATEGY

- Strong population policies
- Targeted screening
- Lifelong person-centered care

OBESITY DATA

- 1 billion people worldwide (2024)
- 163 million in India projected by 2030

Map not to scale (for illustration only)

Novo Nordisk–Catalent Acquisition Reshapes Global GLP-1 Manufacturing Landscape

On 7 February 2024, Novo Holdings — the parent entity of Novo Nordisk — announced a USD 16.5 billion all-cash acquisition of Catalent, one of the world's largest contract development and manufacturing organisations. The transaction, completed in December 2024, gave Novo direct control of three major Catalent fill-finish manufacturing facilities and was widely interpreted as a strategic response to the persistent global supply shortage of semaglutide (Ozempic and Wegovy) that had defined the GLP-1 era since 2022.

The Novo–Catalent deal exemplified a broader structural shift in the global pharmaceutical industry. As biologic drugs — antibodies, GLP-1 peptides, oligonucleotides, cell therapies, and gene therapies — increasingly dominated R&D pipelines and commercial revenues, manufacturing capacity emerged as a critical strategic constraint. Companies that could control end-to-end production — from active-ingredient synthesis through fill-finish into patient-ready devices — gained durable competitive advantages that small-molecule-era outsourcing models had not provided. The consolidation trend rippled across the industry, with Roche, Eli Lilly, Pfizer, Merck and others announcing substantial investments in internal biologics manufacturing capacity over the same period.

For Indian contract development and manufacturing organisations — including Syngene, Piramal Pharma Solutions, Divi's Laboratories, and others — the shifting industrial landscape presents both opportunity and competitive pressure. India's CDMO market is projected to reach USD 44.6 billion by 2029, up from approximately USD 22.5 billion in 2024, driven by global pharmaceutical customers seeking cost-efficient, FDA-compliant manufacturing partners outside China. For pharmacy students and industry-bound graduates, the manufacturing renaissance has reopened industrial pharmacy, process chemistry, quality-by-design, and biomanufacturing as deeply relevant career paths after decades in which the commercial energy had seemed to lie predominantly in discovery and clinical research.

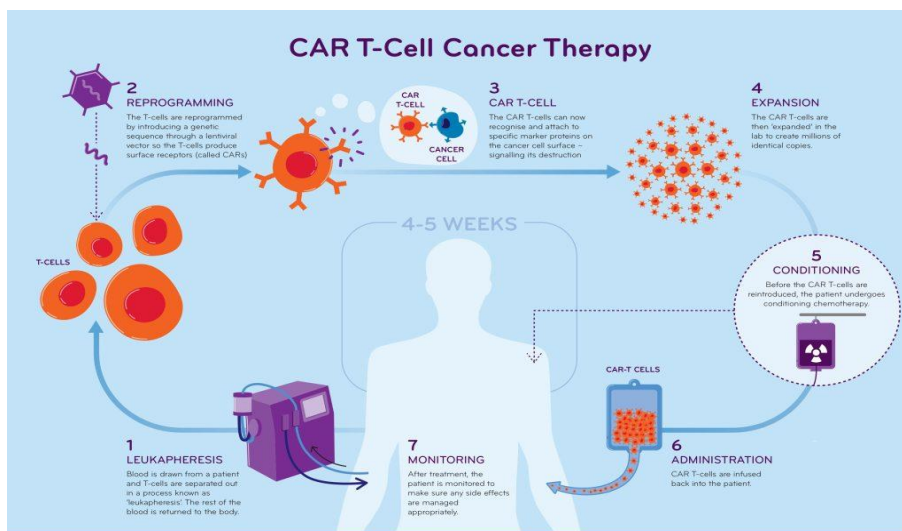


India's NexCAR19 Commercialisation — World's Most Affordable CAR-T Launches

In October 2023, the Central Drugs Standard Control Organization (CDSCO) approved NexCAR19 — India's first indigenous CAR-T cell therapy — developed by ImmunoACT in partnership with IIT Bombay and Tata Memorial Hospital, Mumbai. Commercial roll-out accelerated through 2024 and into 2025, with NexCAR19 offered at approximately INR 40 lakh (USD 48,000) — roughly one-tenth the price of comparable U.S.-approved CAR-T therapies such as Kymriah, Yescarta, or Breyanzi. The launch represented a landmark in Indian pharmaceutical science and a provocative challenge to the global pricing norms around cell and gene therapies.

NexCAR19 targets the CD19 antigen expressed on B-cell leukaemias and lymphomas. Its clinical efficacy, documented in peer-reviewed publications, is comparable to that of the established Western CAR-T products in pivotal Indian trials. What distinguishes the Indian programme is the cost-engineered manufacturing approach — leveraging local biomanufacturing talent, streamlined quality systems, and a supply chain optimised for Indian clinical contexts rather than for global regulatory harmonisation. The technology transfer pathway was built through collaboration between Indian academic institutions, the government's Biotechnology Industry Research Assistance Council, and the private-sector partners.

The broader significance of NexCAR19 for Indian pharmacy extends well beyond this specific product. The programme demonstrated that advanced cell therapies can be developed, manufactured, and delivered in India at price points compatible with Indian clinical economics — challenging the assumption that advanced therapies are inherently luxury products. Indian pharmacy students at GNCPS and other leading institutions have shown rapidly growing interest in cell therapy pharmacy as a career track, and by 2025 several institutions had begun to incorporate cell-therapy case studies and hands-on workshops into their clinical pharmacy curricula. For the global cell-therapy field, the Indian model offers both inspiration and competitive pressure — and suggests a future in which access to advanced therapies becomes a matter not only of science but also of industrial philosophy.

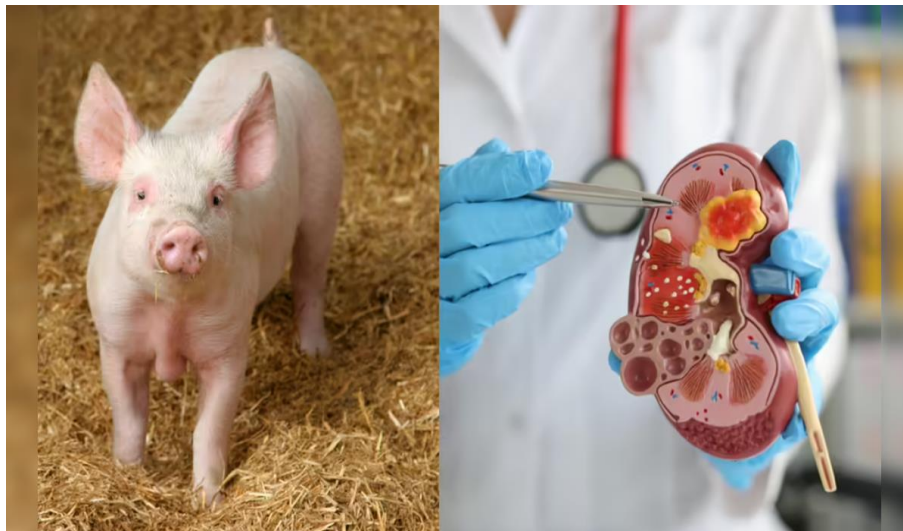


Gene-Edited Pig Kidney Transplants Enter Clinical Trials — Xenotransplantation Progress

The 2024-25 academic year saw several landmark clinical applications of genetically-edited porcine organs in human xenotransplantation. Following the 2022 pioneering porcine-to-human heart transplant at the University of Maryland and several subsequent cases, the field crossed into more systematic clinical investigation during 2024 and 2025. eGenesis (based in Cambridge, Massachusetts) and United Therapeutics / Revivicor (based in Virginia) advanced multiple CRISPR-edited pig kidney candidates through early human trials, with several transplanted patients achieving sustained organ function for months at a time — a result that had been scientifically unimaginable a decade earlier.

Xenotransplantation — the transfer of organs from one species to another — had been pursued for decades with repeated failures driven by hyperacute immune rejection, zoonotic infection risk, and the physiological incompatibility of donor and recipient systems. The 2020s breakthrough rested on multiple gene edits applied simultaneously: knockout of pig genes encoding surface sugars that trigger human antibody attack (alpha-gal, Sda, Neu5Gc), insertion of human regulatory genes to suppress complement and coagulation cascades, and deletion of porcine endogenous retroviral sequences to eliminate zoonotic risk. The result is a pig organ that looks to the human immune system, in substantial part, like a human organ.

The public-health implications could be transformational. In India, where the organ-donation rate is among the lowest in the world and where thousands of patients die each year awaiting kidney transplantation, scalable xenotransplantation would address a genuine national crisis. The Indian Council of Medical Research has begun dialogue around domestic xenotransplantation research frameworks, and several Indian tertiary-care transplant centres are observing the U.S. clinical trials closely with a view to participating in future international trials. For pharmacy practice, xenotransplantation introduces entirely new therapeutic territory — specialised immunosuppression protocols, infection surveillance for potential zoonotic pathogens, long-term monitoring of novel immune responses. Pharmacy education in the 2030s will increasingly include xenotransplantation modules as this field matures.



Life Skills & Professional Development

11 curriculum-aligned workshops & seminars

A structured series of workshops and seminars delivered during the year to build the interpersonal, professional, and wellness capabilities expected of every modern pharmacy graduate.

LIFE SKILLS & PROFESSIONAL DEVELOPMENT

Curriculum-Aligned Workshops & Seminars · Academic Year 2024–25

Pharmacy education is as much about professional identity as it is about scientific knowledge. As part of the College's commitment to holistic professional development, a structured series of workshops, seminars, and wellness sessions was organised during Academic Year 2024–25 to build capabilities that complement the core academic curriculum — from physical well-being and mental resilience, to professional communication, leadership, ethics, digital fluency, and environmental consciousness. Each session was delivered by domain experts drawn from industry, professional bodies, and the College's own faculty. The pages that follow document these activities in compact form, with 11 sessions covered for the period of this magazine.

12 AUG 2024 · Session #1

Yoga and Mindfulness for Academic Stress Management

Resource Person: Anukriti Batra, CEO — PYM · **Students Present:** 58

A restorative session designed to address limited exposure to stress-coping mechanisms in professional education. Participants practised breathing techniques, mindfulness, and gentle postures to build mental resilience and bodily awareness essential for sustained academic engagement.

Focus Area: *Limited exposure to stress-coping mechanisms in professional education*

27 AUG 2024 · Session #2

Workshop on Professional Communication Skills for Pharmacists

Resource Person: Tanvir Shah, CSO — CBC · **Students Present:** 60

A skills workshop aimed at bridging insufficient emphasis on professional communication in healthcare settings. Participants engaged in structured practice exercises in verbal and written communication essential for effective patient care, interprofessional collaboration, and professional documentation.

Focus Area: *Insufficient emphasis on professional communication in healthcare settings*

10 SEP 2024 · Session #3

Leadership and Team-Building Skills for Pharmacy Students

Resource Person: Aishmit Arora, Startup Founder · **Students Present:** 62

A leadership development programme addressing lack of structured training on leadership and teamwork. Students engaged in experiential exercises that build confidence, collaborative decision-making, and the ability to take initiative — capabilities increasingly expected of pharmacy graduates.

Focus Area: *Lack of structured training on leadership and teamwork*

24 SEP 2024 · Session #4

Seminar on Pharmaceutical Ethics and Professional Responsibility

Resource Person: Dr. Mohd Aslam, Professor · **Students Present:** 59

A seminar on professional ethics, addressing limited awareness of ethical decision-making in pharmacy practice. Through case discussions and scenario analysis, students examined the ethical dimensions of pharmacy practice — consent, confidentiality, conflicts of interest, and professional integrity.

Focus Area: *Limited awareness of ethical decision-making in pharmacy practice*

08 OCT 2024 · Session #5

Patient Counseling Skills Development Workshop

Resource Person: Dr. Lolita Shalini Lal, Professor · **Students Present:** 60

A skills workshop aimed at bridging inadequate exposure to patient-oriented communication. Participants engaged in structured practice exercises in verbal and written communication essential for effective patient care, interprofessional collaboration, and professional documentation.

Focus Area: *Inadequate exposure to patient-oriented communication*

22 OCT 2024 · Session #6

Hands-on Workshop on Digital Tools for Pharmacy Practice

Resource Person: Dr. Lolita Shalini Lal, Professor & Sunil Kumar Malik, VP CBC · **Students Present:** 57

A hands-on technical session addressing limited familiarity with modern digital tools. Students gained direct exposure to digital tools and software platforms increasingly integral to modern pharmacy practice — from formulation design to electronic record-keeping.

Focus Area: *Limited familiarity with modern digital tools*

05 NOV 2024 · Session #7

Time Management and Effective Planning Workshop

Resource Person: Aishmit Arora, Startup Founder · **Students Present:** 55

A professional development workshop focused on lack of planning and time-management skills among students. The session equipped students with frameworks and tools to manage workloads, plan careers, and build the habits of lifelong learning expected of healthcare professionals.

Focus Area: *Lack of planning and time-management skills among students*

09 NOV 2024 · Session #8

Fitness and Wellness Program for Pharmacy Students

Resource Person: Sunil Kumar Malik, VP CBC · **Students Present:** 60

A wellness-focused programme targeting insufficient focus on physical fitness and healthy lifestyle. The session combined practical activity with guidance on lifestyle choices that support long-term physical and professional well-being for pharmacy practitioners.

Focus Area: *Insufficient focus on physical fitness and healthy lifestyle*

03 DEC 2024 · Session #9

Seminar on Role of Pharmacist in Public Health and Society

Resource Person: Dr. Mohit Gupta, Professor · **Students Present:** 58

A reflective seminar on limited understanding of societal role of pharmacists. Students explored how pharmacists contribute beyond the dispensing counter — through public-health advocacy, community outreach, and participation in health-policy dialogue.

Focus Area: *Limited understanding of societal role of pharmacists*

14 JAN 2025 · Session #10

Workshop on Self-Learning and Continuous Professional Development

Resource Person: Aishmit Arora, Startup Founder · **Students Present:** 56

A professional development workshop focused on inadequate exposure to lifelong learning strategies. The session equipped students with frameworks and tools to manage workloads, plan careers, and build the habits of lifelong learning expected of healthcare professionals.

Focus Area: *Inadequate exposure to lifelong learning strategies*

28 JAN 2025 · Session #11

Awareness Program on Environmental Sustainability in Pharmacy Practices

Resource Person: Dr. Mohit Gupta, Professor · **Students Present:** 54

An awareness programme addressing limited awareness of environmental sustainability in pharmacy. The session examined the environmental footprint of pharmaceutical practice — from packaging and disposal to green manufacturing — and explored practical steps students can adopt as future professionals.

Focus Area: *Limited awareness of environmental sustainability in pharmacy*

CAMPUS HIGHLIGHTS RECAP

The Year in Review — Academic Year 2024–25

Across the Academic Year 2024–25, Guru Nanak College of Pharmaceutical Sciences, Dehradun hosted 55 documented events, celebrated 15 student awards won at external competitions, and supervised 29 major student research projects. Each of these contributed to the rounded education that defines the GNCPS experience — an education in which classroom rigour, laboratory work, cultural celebration, sporting competition, and community service are understood not as separate activities but as integrated components of professional formation.



The events documented in our two companion newsletters for this academic year — carefully chronicling every seminar, workshop, celebration, sports tournament, cultural festival, award, and research activity — provide a detailed record of the year's institutional life. Highlights included the opening of the Research Club with systematic workshops on methodology and scientific writing, the steady calendar of Entrepreneurship Club events that pushed students toward founder-thinking, the full rhythm of Sports Club tournaments that energised the campus, and the Cultural Club's celebrations of every national and cultural occasion that punctuate the Indian academic calendar.

Beyond the organised calendar, this year was marked by the countless smaller moments that knit together the fabric of campus life — the late-evening laboratory work, the informal faculty-student conversations, the friendships that cross batches, the quiet personal milestones of students who grew into leaders of their clubs and their cohorts. These moments are harder to document but are in many ways the true heart of what makes GNCPS the institution it is.



FACULTY CORNER

Voices from the Teaching Community

The faculty of Guru Nanak College of Pharmaceutical Sciences brings together decades of collective experience in pharmaceutical education, research, and industry practice. In this feature, we share brief perspectives from members of our teaching community on the semester that has been — what stood out, what surprised them, and what they carry forward into the next.

"A pharmacy graduate is not merely a technician — they are a custodian of public health. Every seminar, every workshop we organise is designed with that larger purpose in mind, to shape graduates who understand both the science and the service aspect of our profession."

— Dr. S. Duraivel

Principal

"Watching students evolve over the semester — from tentative first-year participants to confident event organisers — is the most rewarding part of teaching. Our job is to create opportunities; they do the growing themselves, and the speed at which they grow never ceases to amaze me."

— Ms. Kriti Dabral

Associate Professor, Pharmaceutics

"Research projects at the undergraduate level do more than produce a thesis; they produce independent thinkers. Seeing our students pose their own questions, design their own experiments, and defend their own conclusions is watching future pharmaceutical scientists in formation."

— Mrs. Archana Rautela

Associate Professor, Pharmaceutics

STUDENT VOICES

Reflections from the GNCPS Student Community

A college newsletter would be incomplete without the voice of its students. In this section we share brief reflections from our students — on what the semester meant to them, on the events that left a mark, and on the friendships and learning that defined their time on campus during this period.

"What I carry away from this semester is not just the knowledge but the confidence. The Research Club workshops taught me to read a scientific paper critically, and I now feel ready to contribute my own research to the literature."

— Final-Year Student, B. Pharm

"The cultural events on campus gave me a chance to discover sides of myself I didn't know existed. I signed up for a dance performance as a dare and ended up helping coordinate three more. GNCPS has a way of drawing the best out of its students."

— Third-Year Student, B. Pharm

"The industry visits and seminars from external experts opened my eyes to the many career paths in pharmacy. I came to college thinking of one profession; I am leaving this semester with awareness of at least five."

— Second-Year Student, B. Pharm

"My induction at GNCPS set the tone for everything that followed. Seniors welcomed us warmly, faculty members were approachable, and by the end of the first week the campus felt like a second home."

— First-Year Student, B. Pharm

"Running the sports calendar this semester taught me more about leadership than any textbook could. Organising a tournament means handling logistics, motivating teammates, resolving disputes, and celebrating every victory as a collective win. I am grateful to the faculty advisors who trusted us with that responsibility."

— Sports Club Coordinator

"The pitch competitions pushed me out of my comfort zone. Standing in front of a panel of judges with just three minutes to sell your idea is terrifying — and exhilarating. Even when I did not win, I walked away with sharper thinking, better slides, and new friendships with fellow founder-students."

— Entrepreneurship Club Member

"Before this semester, publishing a paper felt like something only professors and post-graduates did. The Research Club's systematic workshops demystified the process, and our faculty mentors showed us that student-authored papers in indexed journals are not only possible but expected of serious students."

— Research Club Participant

PUBLICATIONS & RESEARCH OUTPUT

Scholarly Contributions — Academic Year 2024–25

The research output of Guru Nanak College of Pharmaceutical Sciences, Dehradun continues to grow in both volume and scholarly impact. Our faculty and students publish in peer-reviewed journals spanning pharmaceuticals, phytochemistry, herbal drug development, water-quality research, nanoparticle science, clinical pharmacy, and pharmacognosy. Over the years chronicled in our magazine volumes, the College has authored or co-authored more than twenty research papers in Scopus and SCI-indexed journals and contributed over ninety book chapters to recognised pharmaceutical publications — an output that reflects both individual faculty excellence and the sustained research culture that the institution has built.

NOTABLE JOURNALS IN WHICH GNCPs WORK HAS APPEARED

- ▶ Water, Air, & Soil Pollution (Springer)
- ▶ Waterlines — peer-reviewed WASH journal
- ▶ ACS ES&T Water (American Chemical Society)
- ▶ Food Safety and Health
- ▶ Journal of Natural Remedies
- ▶ Journal of Chemical Health Risks
- ▶ Environment Conservation Journal
- ▶ International Journal of Pharmaceutical Sciences and Research
- ▶ Journal for Research in Applied Sciences and Biotechnology
- ▶ International Journal of Pharmaceuticals and Healthcare Research
- ▶ Catalysts (MDPI)
- ▶ Frontiers in Microbiology

Faculty contributions to the Raghav Publication volumes on Pharmacognosy — led by Ms. Kriti Dabral, Ms. Yashika Uniyal, and Dr. Nidhi Chatterjee — have produced thirty-seven authored book chapters, serving as reference material for pharmacy students across India. Students in the 2024-25 final-year batch produced multiple peer-reviewed publications emerging from their dissertation projects under the supervision of Ms. Kriti Dabral and Mrs. Archana Rautela.

A complete publications register is maintained by the institutional Research Committee and is available to all faculty, students, and visiting scholars. The register serves as the definitive scholarly record of the institution and is updated continuously as new publications appear.

LOOKING AHEAD

What the Coming Semester Holds

As this issue goes to press, preparations are already underway for the the next academic year at GNCPS, where the institutional momentum documented in this magazine will be built upon with fresh cohorts, new research programmes, and continued engagement with the global pharmaceutical profession. Our calendar includes continued sessions of the Research Club with a focus on advanced research methodology, regular Entrepreneurship Club events designed to stretch student thinking on venture creation, Sports Club tournaments that keep the competitive spirit alive across all four batches, and Cultural Club programmes marking the festivals and national days that punctuate the academic calendar.

Faculty members will continue to deliver research seminars on cutting-edge topics; guest speakers from the pharmaceutical industry, regulatory agencies, and academia will visit the campus through the Industry-Academia engagement cell; and students will participate in external competitions that carry the name of Guru Nanak College to the regional and national stage.

Readers of this newsletter can expect the next issue to document those months with the same care and warmth they have come to expect. Until then, we invite every member of the GNCPS family to engage enthusiastically with the opportunities the campus continues to offer.

CREDITS & ACKNOWLEDGEMENTS

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Photography Credits

All photographs are sourced from the GNCPS media archives with contributions from student volunteers and club photographers.

Published by

Guru Nanak College of Pharmaceutical Sciences, Dehradun

Jhajhra, Chakrata Road, Dehradun — 248007, Uttarakhand, India

Disclaimer

The content of this newsletter is compiled from institutional records, event reports, and inputs from faculty and student coordinators. While every effort has been made to ensure accuracy, the editorial team welcomes corrections and suggestions for future issues.

THE GNCPS CHRONICLE

Volume III — Annual Magazine

Academic Year 2024–25

“The secret of getting ahead is getting started.”

— Mark Twain

GURU NANAK COLLEGE OF PHARMACEUTICAL SCIENCES

Jhajhra, Chakrata Road, Dehradun — 248007, Uttarakhand, India

Est. 2018 · Affiliated to VMSB Uttarakhand Technical University · Approved by PCI