



Inside this issue

- Research
- Collaborations and Associations
- Visits and Discussions
- Lectures
- Distinguished Visiting Professors/Adjunct Professors
- Donor Contributions
- Infrastructure Development

Bhoomi Pujan for the Construction of Gangwal School of Medical Sciences and Technology and Yadupati Singhania Memorial Super Speciality Hospital, 25th September 2023.

ABOUT THE SCHOOL

The Gangwal Medical School with the super-specialty hospital will serve the large underprivileged population in and around Kanpur. The Yadupati Singhania Super Speciality Hospital along with world-class faculty on board of the Gangwal Medical School, will offer affordable treatment in super specialties like oncology, joint replacement, cardiac surgery, endocrinology neurosciences, etc, to over 4 million people residing in 300 Km radius of Kanpur. Additionally, the school would take up research in public health issues and help the government in an epidemiological survey, forecast, and strategic plans using innovative mathematical and computational tools. Apart from these, the School will help in developing affordable devices, technologies, and engineering solutions to unmet medical needs of the country, especially in rural areas.



RESEARCH

GSMST has conceptualized an **Integrated Drug Discovery Initiative platform** to horizontally diffuse precision therapeutics with all Center of Excellence. It is envisioned that early nucleation and implementation of this initiative will allow for seamless integration of drug discovery process with CoE activities and invigorate complex process of drug development. There will be concerted efforts to discover new chemical scaffolds, evolve novel bioassays, and use AI-driven protocols, involving interested academic and industry partners, both in India and abroad.

Investigating disease mechanism and development of therapeutics for genetic disorders affecting the nervous system. This project aims at developing therapeutic molecules which are enabled to cross the blood brain barrier for diseases such as Sanfilipo Syndrome, Neuronal Ceroid Lipofuscinosis and Gaucher disease (Type 2 and 3). The other objective is to gain insight into the underlying disease mechanism for rare disorders such as Hereditary Spastic Paraplegia (HSP), Houge type of X-linked syndromic intellectual developmental disorder (MRXSHG) and Developmental and epileptic encephalopathy 70 (DEE70). This will aid in devising assays for variant screening and also for developing therapeutics in the long run.

COLLABORATIONS & ASSOCIATIONS

The Gangwal Medical School has made significant advances in establishing various academic and research linkages with national and international institutes in the recent past.

MOU with KSSSI

On 10th August 2023, a tripartite Memorandum of Understanding was signed between Kalyan Singh Super Specialty Cancer Institute (KSSSCI), Karkinos Healthcare Private Limited, and IIT Kanpur. Hon'ble Deputy Chief Minister and Minister of Medical Education, Medical, Health and Family Welfare, Government of Uttar Pradesh, Shri Brajesh Pathak graced the occasion. The aim of Centre for Advanced Molecular Diagnostics and Research, is to develop affordable cancer care solutions, in the areas of genomics, proteomics, bioinformatics, data science, and other interdisciplinary fields.



MOU with Swansea University, UK

The Gangwal Medical School has strengthened ties with renowned international institutes. A Memorandum of Understanding was signed with Swansea University, United Kingdom on 14th August 2023. This collaboration is to build up synergies and associations for research between the two institutes in India and the United Kingdom, for student exchange, joint degree programs, skill development, capacity building, and strengthening education in the areas of medical science and MedTech innovation.

COLLABORATIONS & ASSOCIATIONS

MOU with University of Glasgow, UK

A couple of significant alliances were also established by the Gangwal Medical School. A MoU was signed on 9th November 2023 between Professor Sandeep Verma, Professor in Charge, GSMST, IIT Kanpur, and Ms. Rachel Sandison, Deputy Vice Chancellor, External Engagement and Vice Principal, External Relations, Professor Moyra Boland, Dean Global Engagement (Central and South Asia), Professor Andrew Tobin, Director, Advanced Research Centre, and other dignitaries of the University of Glasgow. The collaboration will focus on staff and student mobility, research, and cooperation on large research projects like digital medicine, biomedical sciences, translational pharmacology, and sustainability.



MOU with FMDHS, University of Melbourne, Australia

The Officiating Director of IIT Kanpur Professor S. Ganesh, signed a Memorandum of Understanding with Professor Mike McGuckin, Deputy Dean in the Faculty of Medicine, Dentistry and Health Sciences, and Professor Muthupandian Ashok Kumar, Assistant Deputy Vice-Chancellor International (India), of the University of Melbourne on 30th November 2023, for joint research initiatives, faculty exchange, and transformative projects in the domain of global medical sciences and technology.



VISITS AND DISCUSSIONS

The Gangwal Medical School witnessed notable visits from various arenas associated with the medical world. Several meetings and discussions were initiated with Pharma companies like Alkem Laboratories and Emcure Pharma for joint exploration in the areas of drug discovery, Active Pharmaceutical Ingredients, and disease biology. On another visit, simulation-based research in medical science was discussed with the team members of ANSYS, Inc. headed by Dr. Dipankar Choudhury, Vice President of Research.



Mr. Hemant Jalan, founder Donor of GSMST discussed the overall development and establishment of the Gangwal Medical School with the highest dignitaries of IIT Kanpur on 4th September 2023.



Shri P. S. Sen Sharma, Principal Secretary, Medical Health and Family Welfare, Uttar Pradesh and Shri Ranjan Kumar, Secretary of Medical and Health, Uttar Pradesh, visited IIT Kanpur to discuss the Uttar Pradesh Digital Health Stack on 14th September 2023.

LECTURES



Professor Perumal Nithiarasu

Associate Dean for Research, Innovation, and Impact for Science and Engineering, Swansea University, United Kingdom delivered a talk on “Building digital twins - Fundamental challenges” on 10th July 2023.

Dr. Dipankar Choudhury
Vice President, Research at ANSYS, Inc. USA, gave a talk on “Improving Health Outcomes with Physics-based Simulation Methods” on 8th August 2023.



Jalan Distinguished Lecture Series in MedTech Innovation

Professor i.R. Dr.-Ing. Cameron Tropea, Institute of Fluid Mechanics and Aerodynamics, Technical University Darmstadt, Germany gave lectures on “Magnetic Resonance Velocimetry”, on 16th October 2023, under the Jalan Distinguished lecture series in Med-Tech Innovation.

DISTINGUISHED VISITING PROFESSORS



Professor Costanza Emanuelli

Faculty of Medicine
National Heart and Lung Institute, Chair in
Cardiovascular Science, Imperial College, London

Professor Gaurav Agarwal

Head, Department of Endocrine and Breast Surgery
Sanjay Gandhi Post Graduate Institute of Medical
Sciences, Lucknow



Professor Aditya Kapoor

Head of Cardiology
Sanjay Gandhi Post Graduate Institute of Medical Sciences,
Lucknow

ADJUNCT PROFESSORS

Dr. Vinod Scaria

Senior Consultant
Vishwanath Cancer Care Foundation



Dr. Sridhar Sivasubbu

Senior Consultant
Vishwanath Cancer Care Foundation

Dr. Prashant Kumar

Chief Scientific Officer
Karkinos Healthcare Private Limited



Dr. Venkataramanan Ramachandran

Founder & CEO
Karkinos Healthcare Private Limited

DONOR CONTRIBUTIONS



Mr. Gopal Sutwala, Co-Promoter at Kanpur Angel Network, (Alumni of IIT Kanpur, BT/CHE/1973) donated for a ward in the Gangwal Medical School for the 'Economically Weaker Section' on 19th September 2023.



The HDFC Bank Limited donated generously to the Emergency and Trauma Care Center of the Gangwal Medical School.



INFRASTRUCTURE DEVELOPMENT



Hospital under construction (11th January 2024)



The Bhoomi Pujan for the construction of the Gangwal School of Medical Sciences and Technology, and Yadupati Singhanian Memorial Super Specialty Hospital, was performed on 25th September 2023, at the designated site in IIT Kanpur campus. Professor Abhay Karandikar, Ex-Director, Professor S. Ganesh, present Officiating Director, and many other dignitaries were part of the ceremony, including representatives of construction agencies and engineering consultants.

The construction of the Gangwal Medical School started in November 2023. Tata Consulting Engineers Limited (TCE) is the Project Management Consultant (PMC) and Larsen & Toubro (L&T) is the contractor.

VISUAL HIGHLIGHTS



An MoU between University of Melbourne and Gangwal School of Medical Sciences and Technology was signed



Gangwal School of Medical Sciences and Technology at IIT Kanpur and the University of Glasgow have entered into a research partnership as part of R&D initiatives.



Meeting of GSMST with Mr PS Sen Sharma, Principal Secretary, and Mr Ranjan Kumar, Secretary, Ministry of health and family welfare, Govt. of UP on digital health and poc devices in Uttar Pradesh.



One of our Founder Donors, Dr Dev Joneja visited GSMST site.

कृत्रिम हृदय 'हृदयंत्र' अप्रैल तक लाने की तैयारी



आइएहटी का कृत्रिम हृदय 'हृदयंत्र' अपने अनुसंधान के अंतिम दौर में है। अगले साल के अप्रैल महीने तक इसके टेबल टॉप खाने शरीर के बाहर रखकर हृदय की मदद करने वाला वर्जन लाने की योजना है। दिसंबर में जानवरों पर परीक्षण का तैयारी के बीच आइएहटी के विज्ञानी हृदयंत्र के विभिन्न संशोधनशील हिस्सों को इस तरह से विकसित करने में जुटे हैं कि वह शरीर को कोशिकाओं के बीच उनका स्वाभाविक हिस्सा बनकर रह सके।

आइएहटी कानपुर के गंगवाल स्कूल ऑफ मेडिकल साइंस एंड टेक्नोलॉजी की टीम हृदय के विकल्प के तौर पर हृदयंत्र तैयार कर रही है। जिस तरह से हृदय शरीर में रक्त प्रवाह को बनाए रखने के लिए धमनियों से पहुंचने वाले रक्त को पंप कर धमनियों में वापस भेजता है। उसी तरह हृदयंत्र भी काम करेगा।



आइएहटी में तैयार हृदयंत्र का डिजाइन फोटो • रवीश आइएहटी

इसमें लगे पंप की मदद से रक्त को धमनियों में भेजा जा सकेगा। हृदयंत्र को वेंट्री के जरिये ऊर्जा मिलेगी। हृदयंत्र को कोशिकाओं की प्रोटीन संरचना के अनुरूप तैयार किया जा रहा है, जिससे शरीर में पहुंचने पर कोशिकाएं इसे बाहरी तत्व के बजाय अपना स्वाभाविक हिस्सा मानें और उसी के अनुरूप सहज व्यवहार करें। रिसर्च टीम का मार्गदर्शन कर रहे प्रो. के भुरलीपर के अनुसार हृदयंत्र को मानव शरीर में दिल के निचले बाएं हिस्से की मदद के लिए तैयार किया जा रहा है। विशेष

हृदयंत्र के जानवरों पर परीक्षण की तैयारी पूरी हो चुकी है। संशोधित संस्थाओं की अनुमति मिलने के साथ ही दिसंबर माह में किया जाएगा। अप्रैल 2024 तक इसका टेबल टॉप वर्जन लांच करने के लिए भी आइएहटी तैयार है।

- प्रो. सदीप वर्मा, केनेडि इंजनी, गंगवाल स्कूल ऑफ मेडिकल साइंस एंड टेक्नोलॉजी, आइएहटी कानपुर



कमर के पास रहेगा कंट्रोलर, कंधे के नीचे लटकती रहेगी बैटरी • आइएहटी

मोटर से इसका संचालन होगा और नियंत्रित भी किया जा सकेगा। यह दुनिया के कृत्रिम हृदय उपकरणों के मुकाबले इसलिए भी सर्वश्रेष्ठ होगा क्योंकि मैकेनिकल, इलेक्ट्रॉनिक्स व इलेक्ट्रोडल इंजीनियरिंग का प्रयोग कर इसकी सहाय को जैविक रूप से प्राकृतिक बनाया गया है। इस उपकरण में भावी चुनौतियों के मद्देनजर हृदय रोग विशेषज्ञों के सुझाव के अनुरूप बदलाव भी किए जा सकेंगे। फिलहाल हृदयंत्र का जो पहला वर्जन तैयार किया जा रहा है उसे शरीर के बाहर रखा जाएगा।

Project Hridayantra is targeted towards developing an advanced assist device of a human heart, capable of compensating for the loss of performance of a weakened left ventricle.



Air Marshal Sadhna S Nair, VSM, DGFS(AF) visited Hridayantra project facility

CONTACT US

Administrative Office
GSMST Building
(Near Air Strip)
Indian Institute of Technology Kanpur
Kanpur, UP -208016



smrt@iitk.ac.in



(+91) 0512 259 2452



@IITKMedSchool

YADUPATI SINGHANIA SUPER SPECIALITY HOSPITAL
GANGWAL SCHOOL OF MEDICAL SCIENCES & TECHNOLOGY

