(Program Details can be pull-down menu with options: E-poster, Registration, Program Schedule)

Heritage Institute of Technology (HIT), Kolkata

jointly with

International Institute of Information Technology (IIIT), Hyderabad

Organizes

Five Days Online Faculty Development Program On

"Computational Genomics: Path to Precision Medicine"

24th – 28th March 2025

Time:19.00 – 22.00 hrs (IST)

Venue: Zoom Meet

ABOUT

ABOUT IIITH

International Institute of Information Technology, Hyderabad (IIITH) is an autonomous university, founded as a not-for-profit public private partnership (N-PPP) in 1998, and is the first IIIT in India under this model. Over the years, the institute has evolved strong research programmes in various areas, with an emphasis on technology and applied research for industry and society. The institute facilitates interdisciplinary research and a seamless flow of knowledge.

Center for Computational Natural Sciences and Bioinformatics is one of the domain research centers at IIIT. The CCNSB faculty are actively engaged in innovative research problems in various areas of physics, chemistry and biology.

ABOUT HIT

Heritage Institute of Technology (HITK), established in 2001 under the aegis of the Kalyan Bharti Trust (KBT), is a premier autonomous institute in Kolkata

dedicated to excellence in higher education. KBT, founded in 1990 by 22 visionary industrialists in Kolkata, aims to promote quality education in India, particularly in West Bengal. HITK is affiliated with Maulana Abul Kalam Azad University of Technology (MAKAUT) and offers 13 undergraduate and 7 postgraduate programs in various engineering disciplines. The institute is accredited by the National Assessment and Accreditation Council (NAAC) with a Grade 'A', and most of its eligible courses are accredited by the National Board of Accreditation (NBA-Tier 1). Recognized for its outstanding performance, HITK was one of 17 private institutions receiving additional grants under the TEQIP-II scheme.

The institute emphasizes hands-on training, cutting-edge research, and state-of-the-art infrastructure, fostering innovation and excellence. HITK is home to initiatives like the IEEE EDS Centre of Excellence and the Centre for Advanced Biomedical Research, which drive interdisciplinary research. Collaborations with premier academic institutions and industries at both national and international levels further enhance its academic and research ecosystem. HITK's alumni are a testament to its legacy, contributing significantly to top-tier companies and renowned universities worldwide, thereby upholding the institute's reputation. With a strong commitment to academic excellence, innovation, and industry integration, HITK continues to play a pivotal role in shaping the future of higher education in India.

ABOUT FDP:

Interdisciplinary research plays a vital role in advancing healthcare. The FDP on "Computational Genomics: Path to Precision Medicine" aims to provide a unique collaborative platform for aspiring researchers and experts in Genomics and Epigenomics. The FDP will facilitate knowledge exchange among Academicians, Industry leaders, and Medical Practitioners from over the world, focusing on emerging trends and addressing practical challenges in genomics. By exploring new dimensions in this field, the FDP seeks to drive innovation and contribute to societal well-being.

KEY FOCUS AREA:

- Understand the role of AI in genome analyses and its application in clinical genomics and diagnostics
- Gain insights on diverse computational approaches for role of genetic variations in tumorigenesis
- Explore the future of AI in precision medicine
- Harness the power of OMICS in health analytics

WHO SHOULD ATTEND

The FDP is appropriate for all research enthusiasts. This FDP is primarily meant for, though not limited to:

- Faculty/Scientists
- Industry Personals
- Research Scholars/ Post-Doctoral Scholars/Students (with Science/Engineering/Medical background)

IMPORTANT DATES & REGISTRATION DETAILS

NATIONAL:

Research Scholars/ Post-Doctoral Scholars/Students (with Science/Engineering/Medical background) :   Rs 500

Faculty/Scientist   : Rs. 1000

Industry Person: Rs. 2000

INTERNATIONAL: $ 30

Applicants from HIT/IITH: No Registration Fee

Last date of registration: **10th March 2025**

COMMITTEE

Chief Patron (HITK)

Shri H.K. Chaudhary, Chairman, Vikram Solar Ltd. and Chairman, Board of Trustees, Kalyan Bharti Trust (KBT), Kolkata

Patrons (HITK)

- Shri P R Agarwala, Chairman, Board of Governors, HIT & Chairman, Rupa & Co Ltd
- Shri Sajjan Bhajanka, Chairman, Century Plyboards (India) Ltd
- Shri Probir Roy, Director, Kalyan Bharti Trust
- Shri P K Agarwal, Chief Executive Officer, Kalyan Bharti Trust
- Prof Basab Chaudhuri, Principal, Heritage Institute of Technology

Advisory Committee (HITK)

- Prof. Pinaki Bhattyacharya, Emeritus Professor & Director, Research & Development, President IIC-HITK
- Prof. Sujit Kumar Barua, Registrar and HOD, Department of CSBC at Heritage Institute of Technology
- Prof. Sandip Chatterjee, IQAC-HITK Coordinator, Joint Registrar (Academic), Associate Dean (Student Affairs) and HOD, Mathematics at Heritage Institute of Technology
- Prof. Nandan Kumar Jana, Convenor, IIC-HITK
- Mr. Arvind Srivastav, Joint Registrar at Heritage Institute of Technology
- Prof. (Dr.) Siuli Roy, HOD, Dept. of Information Technology at Heritage Institute of Technology

Coordinators of the FDP

- Prof. (Dr.) Rituparna Sinha, Dept. of Information Technology, **Heritage Institute of Technology (HIT), Kolkata**

- Prof.(Dr.) Nita Parekh, Center for Computational Natural Sciences and Bioinformatics, **International Institute of Information Technology(IIIT), Hyderabad**

CONTACT DETAILS :

1)Dr. Rituparna Sinha
rituparna.sinha@heritageit.edu

2)Dr. Nita Parekh
nita@iiit.ac.in

RESOURCE PERSONS

1) Dr. Maitreyee Bhattacharya

Prof. (Dr.) Maitreyee Bhattacharyya is a distinguished haematology consultant with over 25 years of experience in Clinical Haematology. She is Professor &

Director of the Institute of Haematology and Transfusion Medicine at Medical College Kolkata. As the first D.M. haematologist from Eastern India, she has pioneered advancements in her field, including initiating the first Bone Marrow Transplant (BMT) in a government hospital.

She holds an MBBS, an MD in medicine, and a DM in Clinical Haematology. She is the foremost Hematologist Doctor in Kolkata. A deep commitment to patient care, education, and research marks her remarkable career. Her expertise and dedication have earned her membership on the Scientific Advisory Committee (SAC) at the National Institute of Immuno Hematology, Mumbai. Additionally, she serves as a reviewer for several prestigious journals, including the Indian Journal of Hematology and Blood Transfusion, Clinical Chemistry and Laboratory Medicine, and the Indian Journal of Pathology and Microbiology. A passionate educator, Dr. Bhattacharyya is also a postdoctoral teacher and a PhD guide, shaping the future of haematology through her mentorship and guidance. Her contributions to the medical community extend to her prolific writing, with numerous publications in national and international journals and the authorship of more than 15 books. Her research work has significantly impacted the field of haematology, providing valuable insights and advancements in patient care.

2) Dr. Saurav Guha

Dr. Saurav Guha, is the Director of Molecular Diagnostics at the New York Genome Center (NYGC). He leads a team of highly skilled scientists and technicians performing cutting-edge genomic tests for patients with genetic disorders. Dr. Guha, has over eight years of experience in clinical molecular genetics and diagnostics. He is a Fellow of the American College of Medical Genetics and Genomics (FACMG) and a Diplomat of the American Board of Medical Genetics and Genomics (DABMGG). His core competencies include next-generation sequencing (NGS), whole genome sequencing (WGS), cell biology, and genomic analysis. He has contributed to multiple publications in prestigious journals, such as JAMA Psychiatry, Nature Communications, Genetics in Medicine, Genome Biology, etc. His mission is to advance genomic research and innovation, leading to new insights and therapies for patients with complex and rare diseases. and resources in genomics.

3)Dr. Shandar Ahmad

Dr. Shandar Ahmad is a Professor and Coordinator of DBT-Bioinformatics Center and also a former Dean of the School of Computational and Integrative

Sciences, Jawaharlal Nehru University, New Delhi. Earlier, he has worked in National Institute of Biomedical Innovation, Health and Nutrition, Japan (2007-2016), where he still holds an honorary Visiting Scientist position. He was also an adjunct Associate Professor at Graduate School of Frontier Biosciences, Osaka University (2008-2016).

Dr. Shandar Ahmad has organized important scientific events such as International Conference on Bioinformatics (InCoB-2018) and SPARC workshops on transcriptional dynamics in developmental biology (in collaboration with University of Manchester, UK, 2021). He has delivered keynote addresses in India and abroad and has been active program committee members of two dozen international conferences held abroad in addition to many in India.

He is interested in developing cutting edge data-driven algorithms and applications for biological systems. His lab called SciWhyLab has made significant contributions to the study of sequence and structural analysis of protein-DNA and other bio-molecular interactions, particularly their modeling through conventional and deep machine learning. They have developed a method to infer nucleic acid-sensing behavior of toll-like receptors from sequence, structure and network features. SciWhyLab is also interested in developing transcriptome-based methods for drug design (TBDD) and integrating them with traditional SBDD, whole genome topologies of bacterial and human genome and functional genomics involving sequence-dependent DNA topologies including HiC-inferred chromatin structures Published works from SciWhyLab since 2021 include high impact papers in JMB, NAR, NAR-genomics and bioinformatics and Computational and Structural Biotechnology Journal.

Other than the structural and functional genomics one team in the group is involved in deep AI and ML technologies from computer science perspective. Contributions from this team include algorithms to interpret ECG, EEG and MRI images data using deep learning models such as LSTM, CNN and deep neural network. The lab is also developing methods to infer gene expression signatures from the radiological images of whole slide images.

SciWhyLab has collaborations with top institutes across the world such as Manchester University, UK, National Cancer Institute , USA, Tel-Aviv University, Israel, Federation University, Australia, NIBIO, Japan, RIKEN, Japan to name some of them.

For more, visit his website www.sciwhylab.org

4) Dr. Nita Parekh

Dr. Nita Parekh obtained her Ph.d. from School of Physical Sciences, Jawaharlal Nehru University, New Delhi, in 1995. The major focus of the thesis was to study the phase ordering dynamics of binary systems in the presence of disorder and external fields. She has post-doctoral experience in various national and international laboratories (Chemical Engineering Division, National Chemical Laboratory, Pune, where she worked on the characterization and control of spatiotemporal chaos in chemical reaction-diffusion systems (1994 – 1997); spatiotemporal dynamical systems with applications to biological systems, e.g., population models and excitable systems at the Centre for Cellular and Molecular Biology, Hyderabad (1997 – 1999) and at Center for Theoretical and Computational Materials Science, National Institute of Standards and Technology (NIST), Maryland, U.S.A., focused on the computational analysis of mechanical properties of spatially segregated polymer systems (2000 – 2001)).

For about one and half years she worked in the industry as a domain specialist in the bioinformatics division of the company iLabs Ltd., Hyderabad (2001 – 2003). Her role at iLabs was to identify important areas and develop algorithms for software products in the area of sequence analysis, pattern recognition, and structure-based comparison methods. From 2003-2011, she has been working as an Assistant Professor at the Center for Computational Natural Sciences and Bioinformatics, International Institute of Information Technology, Hyderabad and currently she is Associate Professor and Bioinformatics Program Coordinator at IIIT. Her current research interests include using network-based approaches in the analysis of protein structures, and understanding abiotic and biotic stress in rice, understanding the role of genomic variants and DNA methylation in cancer using next-generation sequencing data, and machine learning applications in biological data analysis such as, cancer subtype classification, detecting COVID-19 in chest X-rays and CT scan image data, etc.

5) Dr. Sameer Phalke

Dr. Sameer Phalke is an experienced and accomplished scientist with expertise in genetics, epigenetics, molecular biology, and genomics. With a Ph.D. from Martin Luther University, Germany, he has over 20 years of experience in academic and non-academic molecular diagnostic commercial settings, as a postdoctoral fellow, principal investigator, and team lead. His research has led to the publication of over 30 peer-reviewed articles in high-impact international journals, highlighting his contributions to the field of genetics. As the Director and head of Laboratory Sciences, Dr. Sameer is responsible for managing and directing laboratory operations, as well as leading research projects and teams to advance our understanding of genetic diseases and develop new diagnostic tools and treatments.

6) Dr. Anirban Dutta

Dr. Anirban Dutta is working as a Principal Scientist in Life Sciences R&D, TCS-Research (Tata Consultancy Services Ltd.) andhas over 15 years of experience in the fields of biotechnology, bioinformatics and data analytics. He and his team are based out of Tata Research Design and Development Centre (TRDDC), Pune, India.

After completing his graduation and post-graduation (B.Tech and M.Tech) in Biotechnology, Dr. Anirban did his Ph.D. research at the CSIR-Indian Institute of Chemical Biology, Kolkata, India. The area of his doctoral research was Computational Genomics,wherein he investigated genomic patterns and signatures as well as their functional implications.

After his Ph.D., Dr. Anirban joined TCS-Research in 2010,where he is currently leading a team of researchers and scientists working in areas of microbiome analytics, biomarker discovery, infectious diseases, molecular diagnostics, modeling complex biological systems and management of 'omics' scale biological data. During his tenure at TCS Research, not only has he been involved in scientific pursuits of understanding biological systems, but has also taken keen interest in translational research and technology design/ development relevant to this 'niche' and emerging interdisciplinary field. Dr. Anirban has authored multiple scientific articles spanning the fields of genomics, metagenomics and systems-biology, and is a co-inventor in over 50 patents filed by TCS. He is involved in several national and international research projects in collaboration with reputed academic institutions and hospitals worldwide.

Dr. Anirban, also likes to teach newly emerging concepts and technologies to senior students/ researchers and very often visits the University of Pune and other academic institutions in and around Pune to deliver guest lectures.

7) Dr. Surajit Bhattacharya

Dr. Surajit Bhattacharya, is a Staff Scientist at Children's National Hospital in Washington, D.C., specializing in genomics, epigenetics, transcriptomics, and biological data analysis. With over 7 years of experience at the hospital, he has contributed to advancements in exome sequencing and variant filtering for optical genome mapping tools.

He holds a Ph.D. in Biochemistry and Molecular Biology from Georgia State University and an M.S. in Bioinformatics from George Mason University, with extensive expertise in computational genomics and biological data analysis. Dr. Surajit has also served as a Postdoctoral Fellow at Children's National Hospital, focusing on genomic and transcriptomic research.

In addition to his research, he has teaching experience as a Teaching Assistant in biostatistics at George Mason University and has worked on projects such as developing a DNA methylation detection tool during his internship at the Walter Reed Army Institute of Research. Earlier in his career, he worked as a Test Engineer at Infosys, gaining experience in software testing and automation.

8) Dr. Suman Paine

Dr. Suman Paine is the Founder of PDxNucleus and Chief Scientific Officer at PDxRL, where he is driving innovation in genomics and public health. With extensive experience in integrating omics data into healthcare, Dr. Suman previously served as Project Manager for Genome India at BRIC-National Institute of Biomedical Genomics, where he worked for over three years to advance the application of multi-omics in public health. Additionally, he held the position of Chief Scientist at Bencos Research Solutions Pvt. Ltd., contributing to advancements in research methodologies and statistical analysis.

At PDxRL, Dr. Suman is leading transformative initiatives, such as a groundbreaking genome sequencing project to combat multidrug-resistant tuberculosis (MDR-TB) in underserved populations. This initiative seeks to address diagnostic delays and improve treatment outcomes through innovative genomic solutions. He also champions public engagement with advanced genomics, organizing workshops like "Deep Dive into Omics Approach" at the India Science Festival 2025, aimed at fostering knowledge sharing and promoting precision medicine.

9) Mr. Anirban Halder

Mr. Arindam Haldar is a senior consultant, Health Care Industry at Tata Consultancy Services. He is passionate technologist and healthcare specialist with extensive experience in designing and building innovative web and enterprise applications aimed at enhancing care delivery and management. Currently, Mr. Halder manages the delivery and transformation for the Healthcare Insurance business segment at Tata Consultancy Services (TCS), where he plays a pivotal roles as Client Partner, Digital Transformation Leader, Healthcare Advisor and Prompt Engineer for the healthcare industry.

With a focus on business transformation and future-ready technologies, Mr. Halder has deep expertise in agile methodologies (Scrum, Kanban, SAFe) and large scale product development. His technological acumen spans Advanced Data warehouse, Python, TensorFlow, Node. JS, Angular and cloud computing platforms like Google Cloud. As a Thought Leader, Mr. Halder has authored publications on AI-driven healthcare innovations, including the impact of pharmacogenomics on personalized treatment and insights on the booming biotech sector. He is a committed advocate for leveraging technology to solve critical challenges in healthcare, driving efficiency and delivering better outcomes.

10) Dr. Sujoy Ghosh

Dr. Sujoy Ghosh is a Professor and Director at Pennington Biomedical Research Center, where he lead research initiatives on metabolic and cardiovascular diseases. He also hold an adjunct faculty position at Pennington and have been a Visiting Scientist at the National Heart Research Institute in Singapore. His previous roles include Associate Professor at Duke-NUS Graduate Medical School, where he was appointed jointly in Computational Biology and Cardiovascular & Metabolic Diseases. Earlier in his career, Dr. Ghosh was Senior Research Faculty at North Carolina Central University, focusing on genome-wide association studies in obesity and cardiovascular disorders.

Dr. Ghosh earned his Ph.D. in Biochemistry and Molecular Biology from the University of Notre Dame and completed postdoctoral training in Molecular Cancer Biology at Duke University. His expertise spans bioinformatics, statistics, data visualization, and data mining, particularly in genomic, proteomic, and clinical trial datasets.

REGISTRATION FORM

Applicant Category:

- o Faculty / Scientist
- o Research Scholars / Post Doctoral Fellows / Students
- o Industry Person

(*pull down menu*)

Sub-category:

- o National
- o International
- o From IIITH/HITK

(*pull down menu*)

Name: Email ID:

Mobile No.:   Institute/ University:

Department: Designation:

Address of Correspondence:

(*Box spacebelow each of the above items to fill the details*)

SUBMIT