

A brief report on DST-STUTI Sponsored Seven Days Hands On Training Programme On “Advanced Molecular Biology Techniques” conducted by the Department Of Biosciences (DST-FIST) and Integral Information & Research Centre (IIRC), Integral University, Lucknow held from 1st December to 7th December, 2022

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Communication Cell IUL <communications@iul.ac.in>
Bcc: faculty@iul.ac.in

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Department of Biosciences presents a brief report on DST-STUTI Sponsored Seven Days Hands On Training Programme On “Advanced Molecular Biology Techniques” conducted by the Department of Biosciences (DST-FIST) and Integral Information & Research Centre (IIRC), Integral University, Lucknow held from 1st December to 7th December, 2022

The Department of Science & Technology under the aegis of Synergistic Training Programme Utilizing the Scientific & Technological Infrastructure (DST-STUTI), sponsored one week Hands on training programme on Advanced Molecular Biology techniques, which was organized from 01st to 07th December-2022, by the Department of Biosciences (DST-FIST) and Integral Information & Research Centre (IIRC), Integral University, Lucknow in collaboration with Jamia Hamdard University, New Delhi as a project management unit (PMU). The DST-STUTI Scheme is intended to provide training to human resources and its capacity building through open access to science and technology infrastructure across the country in departments funded under various DST schemes like DST-FIST, PURSE, SATHI etc. This event is aimed at providing hands-on training and sensitization of the state-of-the-art equipment and ensuring transparent access to science and technology facilities. Moreover, it will enable the budding researchers and professionals to develop better understanding and familiarization with the available resources/scientific equipment supported by the Govt. of India.

Prof. S. W. Akhtar, Honourable Founder and Chancellor of Integral University was the Chief Patron, Dr. Syed Nadeem Akhtar, Honourable Pro-Chancellor and Prof. Javed Musarrat, Honourable Vice-Chancellor were the Patrons of this workshop. The Co-Patrons were Prof. Suhel Parvez, Coordinator DST-STUTI, PMU Jamia Hamdard, New Delhi; Prof. Mohd. Haris Siddiqui, Registrar, Prof. Abdul Rahman Khan, Controller of Examinations, and Prof. Syed Misbahul Hassan, Director, IIRC, Integral University, Lucknow. The Convener of the workshop was Dr. Snober S. Mir, Head, Department of Biosciences, and Dr. Mohd. Ikram Ansari and Dr. Jahanara Khatoon were the organising Secretaries.

The primary objective of the workshop was to impart both theoretical and practical knowledge of molecular techniques used for addressing research problems as well as their applications in agriculture, molecular medicine and detection and characterization of infectious organisms. The different techniques of molecular biology including Animal Tissue Culture Techniques, Staining, Nucleic acid extraction, cDNA preparation, quantification, RT-PCR, HPLC and FTIR were covered during the workshop in a systematic manner. Moreover, the workshop aimed to enhance the knowledge on the most efficient use of materials, reagents and interpretation of the results.

The workshop started with the inaugural function at the central auditorium of Integral University on 1st December, 2022. The inaugural function was attended by many distinguished dignitaries viz; **Dr. Jayant Krishna, Chief Executive Officer, Foundation for Advancing Science and Technology, New Delhi as the chief guest; Prof. Mohd Akram from Jamia Hamdard University (PMU) as guest of honour; Dr. Manoj Prasad, Senior Scientist /J.C.Bose Fellow from National Institute of Plant Genome Research, New Delhi and Prof. Sanjay Batra, Chief Scientist from CSIR-CDRI as the keynote speakers.** Inaugural function commenced with the welcome address by **Dr. Snober S. Mir, Head, Department of Biosciences, Integral University, Lucknow.** Dr. Mir welcomed the esteemed guests and the participants in the lush green campus of Integral University and assured them of spending a productive week in the campus. **Prof. Syed Misbahul Hasan, Director, Integral Information and Research Center (IIRC), Integral University** introduced the participants to the overarching role of IIRC in research and development and gave a thorough overview of the research facilities available within the university.

Guest of Honour **Prof. Mohd Akram,** addressed the audience and explained the role of Jamia Hamdard as project management unit in attaining the objectives of DST-STUTI program. The inaugural address proceeded with the captivating words of our esteemed **Chief Guest, Dr. Jayant Krishna,** wherein he emphasized on the need of transformation in science and technology over the entire globe which ultimately can lead to good innovations and fruitful research.

The session was followed by the release of souvenir and presenting mementos to all the dignitaries. **Dr. Jahanarah Khatoon, Organizing Secretary** presented a vote of thanks and expressed her gratitude to the Chief Patron, Patrons, Chief Guest, dignitaries, participants and members of Integral University Fraternity for making the event successful.

The vast arrays of topics covered by the different invited speakers from the Day 1 to the Day 7 of the workshop include:

- **“Impact of Automation in Drug Discovery and Development”** by **Prof. Sanjay Batra** & **“Applications of Genomic research and its application in Crop Improvement”** by **Dr. Manoj Prasad** on the Day 1 of the workshop.
- **“Applications of RNAi in Agricultural sciences”** by **Prof. Sangeeta Saxena,** Head, Department of Biotechnology, BBAU, Lucknow & **“Neural Development and Neurodegeneration: Role of microRNAs”** by **Dr. Sanjay Yadav,** Additional Professor & Head, Department of Biochemistry, AIIMS, Raebareli on the Day 2 of the workshop.
- **“Nuclear Magnetic Resonance Spectroscopy: A versatile tool of Biology”** by **Dr. Neeraj Sinha,** Head, Molecular Diagnostics and Phenome Research Unit, Centre of Biomedical Research (CBMR), SGPGIMS, Lucknow & **“Genetic toxicology and regulatory requirements”** by **Dr. Alok Kumar Pandey,** Principal Scientist, CSIR-IITR, Lucknow on the Day 3 of the workshop.
- **Electrophysiology as a screening tool for brain plasticity”** by **Dr. Ashok K. Datusalia,** Assistant Professor, Department of Pharmacology and Toxicology, NIPER, Raebareli & a special session on New techniques regarding protein and molecular biology by **Dr. Arun Kumar Rawat** from Thermofischer Scientific, Lucknow on the Day 4 of the workshop.
- **Risk Prediction in Complex Diseases by Genetic and Epigenetic Biomarkers and Newer Treatment Strategies** by **Prof. Monisha Banerjee,** Director, Institute of Advanced Molecular Genetics & Infectious diseases, Lucknow University & **“ICMR funding opportunities in molecular biology and health sciences”** by **Dr. Heena Tabassum,** Scientist and Program officer, ICMR, New Delhi on the Day 5 of the workshop.
- **“Microbial Interventions for Improving Sustainable Crop Productivity in Stressed Soils”** by **Dr. Puneet Singh Chauhan,** Principal Scientist, CSIR-National Botanical Research Institute, Lucknow & **“Marker based Fingerprinting for Authentication and Standardization of Functional Food and Botanical Drugs: HPLC-ELSD/mass-based Strategies”** by **Dr. Karuna Shanker,** Senior Scientist, CSIR-CIMAP, Lucknow on the Day 6 of the workshop.
- **“Addressing Disease Complexity via the Malaria Parasite and Human Host Genome”** by **Dr. Saman Habib,** Chief Scientist, CSIR-CDRI, Lucknow & **“Good Laboratory Practices: A Quality System in Science”** by **Prof. AB Pant,** Senior Principal Scientist, CSIR-IITR, Lucknow on the Day 7 of the workshop.

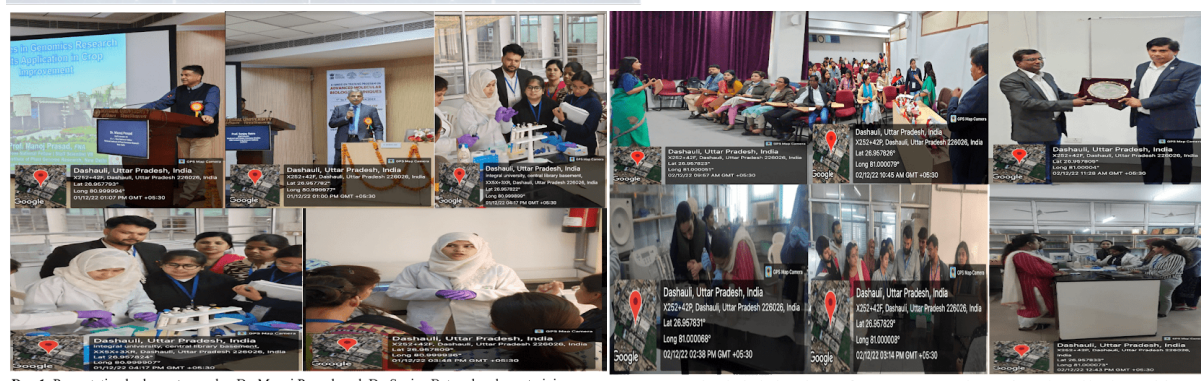
The workshop was attended by **30 participants** selected after a rigorous screening process. The **selected participants** were Assistant Professors and research scholars from different institutions namely Jamia Millia Islamia, New Delhi; Dr. Ram Manohar Lohia Avadh University, Ayodhya; Aligarh Muslim University, Aligarh; Chhatrapati Shahu Ji Maharaj University, Kanpur; Ganesh Shankar Vidyarthi Memorial Medical College, Kanpur; King George's Medical University, Lucknow; Bappa

The valedictory function of the 7 days training program was conducted on 7th December, 2022 in the presence of distinguished Chief Guest, Dr. Huma Mustafa, Joint Director at Council of Science and Technology, UP and Guest of Honour, Dr. Saman Habib, Chief Scientist and Professor at CSIR-CDRI, Lucknow. Dr. Mohd Ikram Ansari, Organising Secretary provided a brief report of the activities during the seven days of the training. Dr. Mustafa congratulated Integral University and the organising committee members for successful completion of the workshop. Dr. Habib appreciated the workshop for giving researchers a platform to raise their queries related to research. The participants were asked to provide feedback about the training program and given certificates of participation. The valedictory program ended with the vote of thanks delivered by the organising secretary, Dr. Jahanarah Khatoun.

At the end of the workshop, questionnaires were distributed to the participants to get their feedback on the training methodology, training materials and to get views on how to improve the workshop in future. Overall, the participants were positive in their feedback and considered the workshop to have met its objectives. The participants considered the schedule of the workshop and technical arrangement of the practical sessions to be well organized. Their enthusiasm and interest was apparent from their 100% attendance on all days, presence throughout the long working hours, constant interactions and zeal to know more. The hospitality provided was appreciated by them. In fact, they expressed the desire to attend more workshops on several topics to master the skills for becoming good researchers. They were also taken for a tour to the prominent heritage sites to witness the rich culture and traditions of Lucknow.

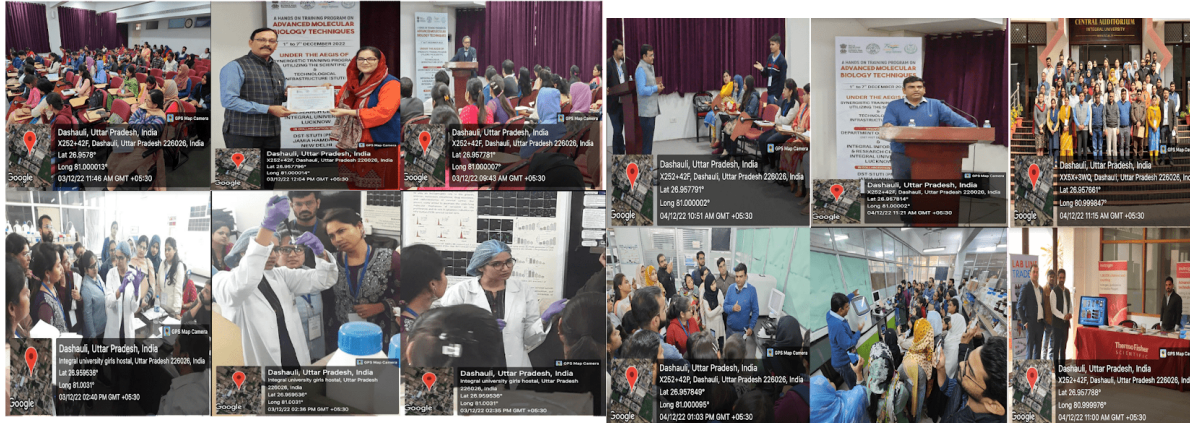


Glimpses of Inaugural ceremony: release of souvenir by the dignitaries, memento presentation to the chief guest.



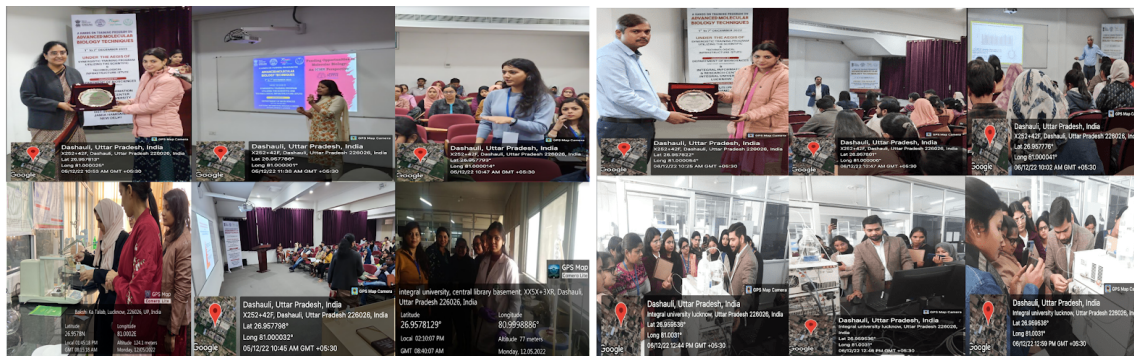
Day 1: Presentation by keynote speaker Dr. Manoj Prasad and Dr. Sanjay Batra, hands-on-training on RNA isolation, purification and quantification

Day 2: Presentations by invited speakers Prof. Sangeeta Saxena and Dr. Sanjay Yadav and hands-on-training on cDNA synthesis using RT-PCR.



Day 3: Interactive sessions by invited speakers Dr. Neeraj Sinha and Dr. Alok Kumar Pandey and hands-on-training on Animal tissue culture techniques.

Day 4: Interactive sessions by invited speakers Dr. Ashok K. Datusalia and Dr. Arun Kumar Rawat and hands-on-training on Animal tissue culture techniques.



Day 5: Interactive sessions by invited speakers Prof. Monisha Banerjee and Dr. Heena Tabassum; hands-on-training on plant extract preparation.

Day 6: Interactive sessions by invited speakers Dr. Puneet Singh Chauhan and Dr. Karuna Shanker and hands-on-training on HPLC technique.



Day 7: Interactive sessions by invited speakers Dr. Saman Habib and Prof AB Pant; certificate distribution to the delegates; feedback by the participants.



Media coverage of the workshop in different newspapers.

Best Regards
 Dr. Snober S. Mir,
 Head, Department of Biosciences,
 (A DST-FIST sponsored Department),
 Integral University,
 Dasauli, Kursi Road,
 Lucknow-226026.
 Mob:9198990380
<https://scholar.google.co.in/citations?user=IQh2DpoAAAAJ&hl=en>