

MEET OUR SPEAKERS

From students to Scholars. Nurturing Independence for Research Impact by Prof. Ashwani Thakur, Professor & Coordinator, Department of Biological Sciences, and Bioengineering, IIT Kanpur on 7 October, 2023



The Art of Teaching and Research by Prof. S. I. Rizvi, Dean, Research & Development, University of Allahabad on 21 October, 2023



Molecular characterization of Prostate Cancer: Prospects of Precision Medicine in India by Prof. Bushra Ateeq, Professor & Joy Gill Chair, Department of Biological Sciences & Bioengineering, IIT, Kanpur on 21 October, 2023



Arsenate and arsenite exposure modulate antioxidants and amino acids in contrasting arsenic accumulating rice (*Oryza sativa* L.) genotypes by Dr. R.D. Tripathi, Senior Scientist, CSIR-National Botanical Research Institute, Lucknow on 28 October, 2023



Journey of Umifenovir as an Anti-SARS-CoV-2 Therapeutics by Prof. Ravishankar Ramachandran, Chief Scientist, Division of Molecular and Structural Biology, CSIR-CDRI, Lucknow on 4



ABOUT THE PROGRAM

The Refresher Course-cum-Faculty Development Program (FDP) on Recent Advancements in Biotechnology for Sustainable Development jointly organized by the Departments of Bioengineering and Biosciences is designed to enhance the knowledge and teaching skills of faculty members through sessions led by renowned experts. The program will include quizzes to reinforce learning and engagement. This FDP provides a rich platform for faculty members to gain insights from leading experts and fosters a collaborative learning environment.

REGISTRATION FEE

The Refresher Course cum Faculty Development Program fee is Rs. 5000/- (Borne by Integral University).

CRITERIA FOR COURSE COMPLETION

The course includes Five Quizzes which are mandatory for all enrolled participants. Each quiz shall be of 50 grades and a Minimum of 50% marks shall be required as eligibility criteria for completing the course and receiving the certificates. All the participants are required to attend each session.

For More Details, Contact **Dr. Alvina Farooqui**

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Alvina Farooqui



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REFRESHER COURSE-CUM-FDP

Recent Advancements in Biotechnology for Sustainable Development

07 OCTOBER TO 04 NOVEMBER, 2023

UNDER THE AEGIS OF

HUMAN RESOURCE DEVELOPMENT CENTRE

ORGANIZED BY
DEPARTMENT OF BIOENGINEERING
AND

DEPARTMENT OF BIOSCIENCES



DEPARTMENT OF BIOENGINEERING
FACULTY OF ENGINEERING & IT

A Report on
Two Weeks
Refresher Course cum Faculty Development Program

on

“Recent Advancements in Biotechnology for Sustainable Development”

Co-organized by

Department of Bioengineering and Department of Biosciences

Integral University, Lucknow

The biotechnology industry has historically faced significant obstacles, however industries with high throughput technologies, such as bioengineering, computational biology, and robotics, have greatly aided in the field's expansion. Since an employee's performance and potential are among an organization's most valuable assets, faculty members must adapt and realign to suit the stakeholders' ever-changing professional and scientific needs. The concept of this **Refresher Course cum Faculty Development Program** was therefore conceived with the intention of advancing the academic and research careers of teaching and non-teaching personnel in the field of bioengineering and related fields by providing them with up-to-date information on the most recent research developments in the various disciplines that encompass bioengineering and biosciences.

Structure

The **Two Weeks Refresher Course cum Faculty Development Program** focused on teaching sessions by eminent researchers, scientists and academicians specializing in different fields of Bioengineering and Sciences moderated by Faculty members of the Department of Bioengineering and Department of Biosciences.

Session	Date and Time	Resource Person	Topic of the session	Session Coordinators
1	7 th October, 2023	Prof. Ashwani Thakur, Professor & Coordinator,	From students to Scholars: Nurturing Independence for	Dr. Khwaja Osama, Assistant Professor, Department of

Mutausqin



	12:00 - 3:00 pm	Department of Biological Sciences and Bioengineering, IIT Kanpur	Research Impact	Bioengineering and Dr. Arshi Siddiqui, Assistant Professor, Department of Biosciences
	9 th October, 2023 11:00 am - 1:00 pm	Quiz		
2	21 st October, 2023 11:00am - 2:00 pm	Prof. S. I. Rizvi, Professor, Department of Biochemistry, Dean, Research & Development, University of Allahabad	The Art of Teaching and Research	Dr. Irfan Khan, Assistant Professor, Department of Bioengineering and Dr. Mohd. Rumman, Assistant Professor, Department of Biosciences
	27 th October, 2023 11:00 am - 1:00 pm	Quiz		
3	21 st October, 2023 12:30 pm- 3:30 pm	Prof. Bushra Ateeq, Professor & Joy Gill Chair, Department of Biological Sciences & Bioengineering, Indian Institute of Technology, Kanpur	Molecular characterization of Prostate Cancer: Prospects of Precision Medicine in India	Dr. Imran Hussain Assistant Professor, Department of Bioengineering and Dr. Uzma Afaq, Assistant Professor, Department of Biosciences
	27 th October, 2023 11:00 am - 1:00 pm	Quiz		
4	28 th October, 2023 12:30 pm- 3:30 pm	Dr. R.D. Tripathi Senior Scientist, CSIR-National Botanical Research Institute, Lucknow	Arsenate and arsenite exposure modulate antioxidants and amino acids in contrasting arsenic accumulating rice (Oryza sativa L.)	Dr. Zeeshan Rafi, Assistant Professor, Department of Bioengineering and Dr. Nilofer, Assistant Professor, Department of

Dr. Arshi Siddiqui
Dr. Arshi Siddiqui



			genotypes	Biosciences
	30 th October. 2023 11:00 am - 1:00 pm	Quiz		
5	4 th November. 2023 11:00 am- 2:00 pm	Prof. Ramachandran, Chief Scientist at the Molecular and Structural Biology division of the Sophisticated Analytical Instrument Facility, CDRI, Lucknow	Journey of Umifenovir as an Anti-SARS-CoV-2 Therapeutics	Dr. Reena Vishvakarma, Assistant Professor, Department of Bioengineering and Dr. Jahanarah Khatoon, Assistant Professor, Department of Biosciences
	6 th November. 2023 11:00 am - 1:00 pm	Quiz		

Major highlights of the Refresher Course cum Faculty Development Program:

- Eminent speakers from prestigious Institutes like IIT Kanpur, University of Allahabad, CSIR-NBRI, Lucknow, CDRI, Lucknow.
- Registered Participants – 39 (Department of Bioengineering and Department of Biosciences. Integral University)
- Certificate: Participation certificate to attendees and Appreciation certificate to speakers and coordinators

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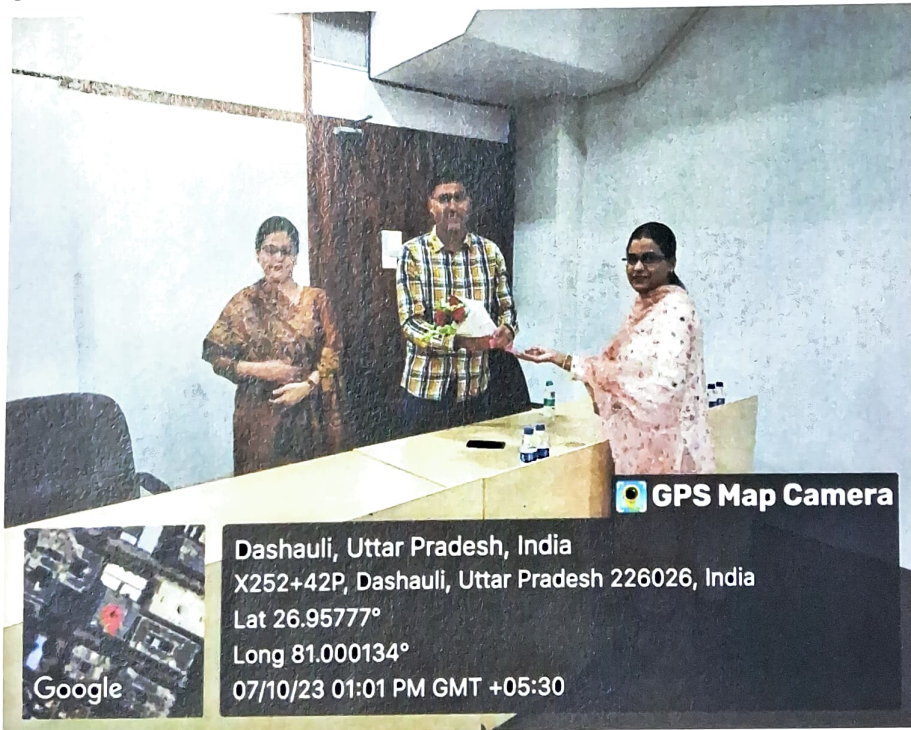
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Session 1

(7th October, 2023)

Human Resource Development Centre, Integral University, Lucknow in association with the Department of Bioengineering and Department of Biosciences. Integral University organised a **Refresher Course cum Faculty Development Program** for their faculty members on the very interesting topic of "Recent Advancements in Biotechnology for Sustainable Development". This program was aimed to refresh and update the current knowledge of teachers to address the rapidly changing educational needs. The first activity of the series was conducted on 7th October, 2023 at Hall 1, Central Auditorium Complex of the Integral University in the presence of faculty members of both the departments. The session began with the welcome of esteemed resource person, **Prof. Ashwani Thakur**, Professor & Coordinator, Department of Biological Sciences and Bioengineering, IIT Kanpur through a floral bouquet which was presented by Dr. Roohi, Professor, Department of Bioengineering, Integral University.



Floral welcome of Prof. Ashwani Thakur by Prof. (Dr.) Roohi

Dr. Alvin Farooqui



The session proceeded with the inspiring address by Dr. Alvina Farooqui, **Professor & Head**, Department of Bioengineering, Integral University. She briefed the faculty members about the Faculty Development Program, its aims and its need in the present scenario in keeping the faculty members on the cutting edge of any new developments. She whole heartedly thanked Prof. Syed Waseem Akhtar, Chancellor and Founder of Integral University for providing the platform where such activities can happen in improving the long-term competence of the teaching staff. Moreover, she beautifully presented the success story of Integral University from a small engineering institute to full-fledged, NAAC A⁺ accredited University. Prof. Farooqui's address was followed by the short introduction of the esteemed resource person Prof. Ashwani Thakur by Dr. Durdana Yasin, Assistant Professor, Department of Biosciences, Integral University.

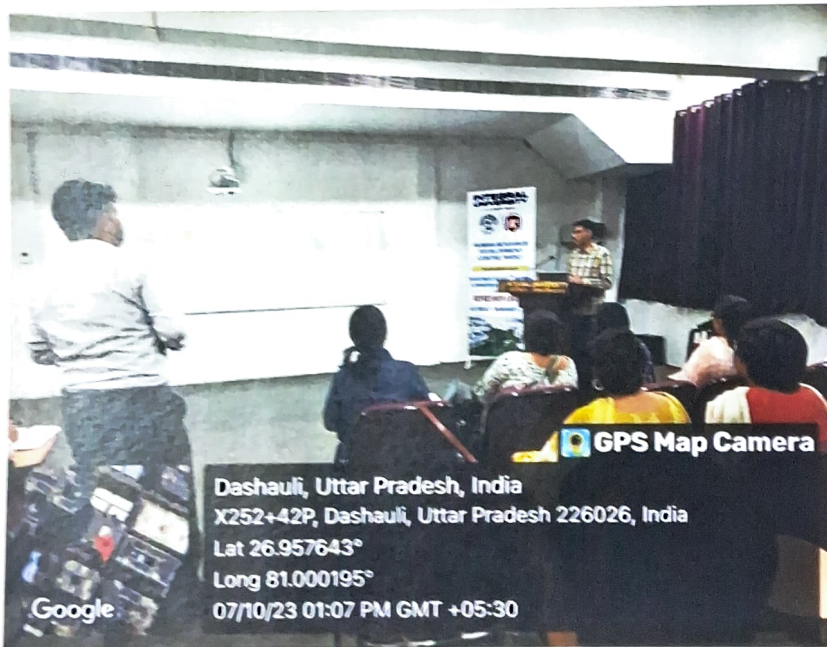


Prof. (Dr.) Alvina Farooqui giving the welcome address

The session proceeded with the enlightening talk by Prof. Ashwani Thakur on the topic entitled “*From students to Scholars: Nurturing Independence for Research Impact*”. He sensitised the faculty members about their roles and responsibilities towards their Ph.D.



scholars and discussed several case studies wherein he and his institute helped the scholars to become an independent researcher. He urged the supervisors to make their respective scholars aligned towards the scientific problem in an intellectual way and help them to be creative in generating new knowledge. He also emphasized on the need of developing good project writing skills among the Ph.D. scholars that could be in part helpful in generating business in science as well as in funding their hypothesis. He also discussed his research area "Amyloid diseases: Drug discovery and Delivery" by citing the research works of his scholars and their excellent results, which shows that good research needs a good idea rather than a good amount of money. He also sensitised the listeners towards the importance of academic-industry interaction by illustrating the example of an introduced, Biopharmaceutical course in his institute, which helped many scholars in finding a good job.



Lecture address on "From students to Scholars: Nurturing Independence for Research Impact" by Prof. Ashwani Thakur

He also spoke about the benefit of appointing Professors of Practice in enriching students for a better understanding and appreciation of the best practices as applied in real-world problems. He concluded his lecture by thanking the organisers of the **Refresher Course cum Faculty Development Program** for inviting him as a speaker.

Alvina Farooqui



Later all the faculty members interacted with Prof. Thakur and discussed about their field of research and showed their interest in seeking research collaborations in the future. At the end of session, Prof. Alvina Farooqui thanked the resource person for sparing his valuable time, as well as all the faculty members for joining the session and gaining valuable knowledge through the wonderful talk.



Felicitation of Prof. Ashwani Thakur by University Memento

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Group photograph

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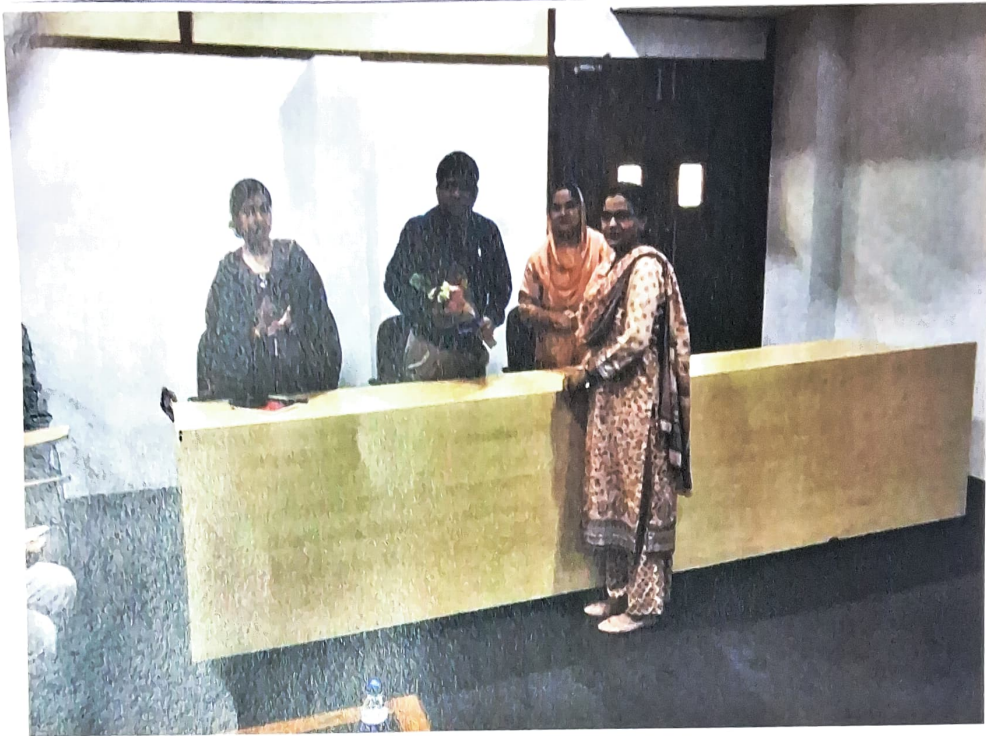
Session 2

(21st October, 2023)

In continuation to the first activity conducted on 7th October 2023, Human Resource Development Centre, Integral University in association with the Department of Bioengineering and Department of Biosciences organized the second activity of the series of the Refresher Course cum Faculty Development Program on “Recent Advancements in Biotechnology for Sustainable Development” on 21st October 2023 at Hall-1, Central Auditorium Complex, Integral University, Lucknow. This course was organized with the aim to refresh and update the current knowledge of teachers to address the rapidly changing educational needs. The activity was efficiently organized under the able guidance of the Conveners, Prof. (Dr.) Alvina Farooqui, Head, Department of Bioengineering and Prof. (Dr.) Snober S. Mir, Head, Department of Biosciences and Co-conveners, Prof. (Dr.) Roohi, Department of Bioengineering and Dr. Amita Dubey, Assistant Professor, Department of Biosciences.

Session 2 of the activity was hosted by Dr. Durdana Yasin, Assistant Professor, Department of Biosciences. She welcomed the eminent resource person of the session Prof. S. I. Rizvi, Professor, Department of Biochemistry, Dean, Research & Development, University of Allahabad and the faculty members of Department of Bioengineering and Biosciences to the session. After the welcome, Prof Iffat Zareen Ahmad, Department of Bioengineering introduced the resource person to the audience. She acquainted the audience with the research area of Prof. S. I. Rizvi involving study on natural products and anti-aging mechanisms and his professional accolades and milestones.

Dr. Alvina Farooqui
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Floral welcome of Resource Person Prof. S. I. Rizvi by Prof. Roohi

The topic of the session was “The Art of Teaching and Research”. Prof. S. I. Rizvi began the lecture with the evolutionary history of humans and how humans had different evolutionary streak than the other animals due to their ability to communicate. This ability led to the sharing of knowledge and experience to the progeny which materialized into fast progression of the human race. The first trait acquired by man was supposed to be teaching and teachers have always been important since then in inculcating new ideas and values in the upcoming generations. He gave examples of the great teachers that the world has witnessed such as Lord Ram, Lord Buddha and Jesus Christ whose teachings are equally relevant in the contemporary times as were in their respective era. Further, he highlighted the qualities of a good teacher that included passion for teaching and learning new ideas to remain valid in the dynamic world; habit of reading to develop a holistic approach; ability to motivate the students to achieve their goals; and excite the students to go beyond the school books by emphasizing on the use the emerging technologies and tools for better understanding and knowledge seeking, such as studying through online courses, for example SWAYAM and National Digital University. He further said that the qualities of a good teacher were not limited to the aforementioned parameters, a teacher should have the ability to integrate the



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knowledge of diverse fields and present it to the students in a lucid form; be a role model for the students as for students a teacher is larger than life figure. Additionally, the teacher should be available for the students whenever required to answer the queries and guide the student on the right path. Prof. S. I. Rizvi explained his concepts about teacher and teaching through examples such as encouraging students to come out of their comfort zone by providing them the opportunity to speak on topics beyond the syllabus, make presentations and share the ideas through it, and involve the students in group discussion. He delineated the arsenal for the teachers for effective communication with the students which included innovative approach of teaching through stories, anecdotes, jokes, and biographies so as to break the monotony of old and board and chalk teaching.

After substantial focusing on the art of teaching, Prof. S. I. Rizvi explained the status of research in the present times. He emphasized vehemently that research is not a job or just an activity; it should be carried out with passion and dedication. He cited the examples of Charles Darwin whose passion for research led to the postulation of the Theory of Natural Selection and Albert Einstein who failed numerous times in his quench to achieve success in his scientific experiments but his determination led to success and made him one of the most revered scientists till date. In present scenario, the research at university level should be divided into two parts, firstly deciding a research topic of interest and secondly the research area should be the one that can be pursued within the infrastructure facilities provided by the university.

He concluded his lecture by summarizing the changes witnessed in the teaching style in the last thirty years and the new and upcoming changes we will be witnessing in the next thirty years where the use of artificial intelligence (AI) will be commonplace and how teachers will need to evolve themselves to keep apace with the changing teaching methods.

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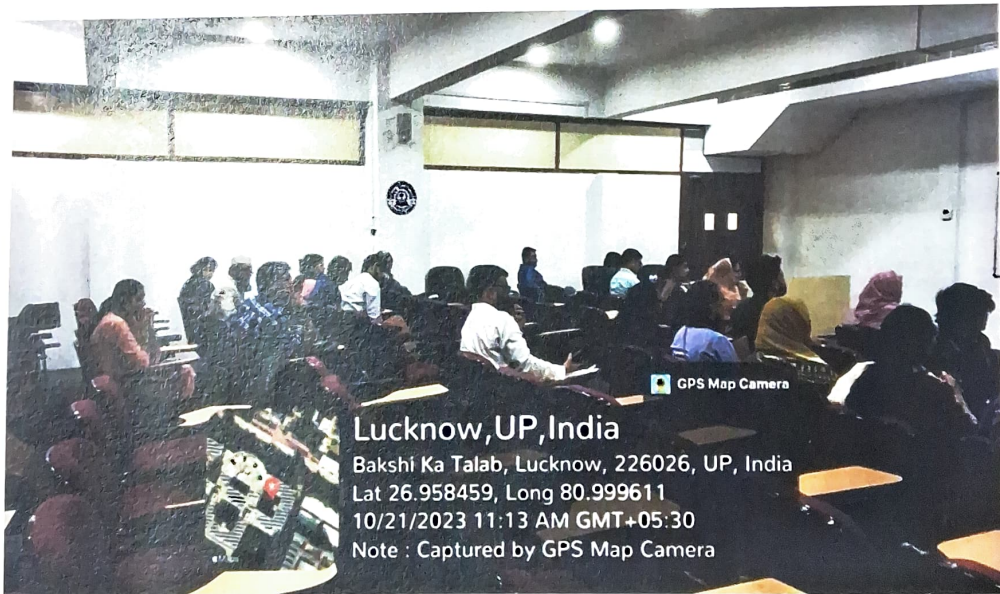
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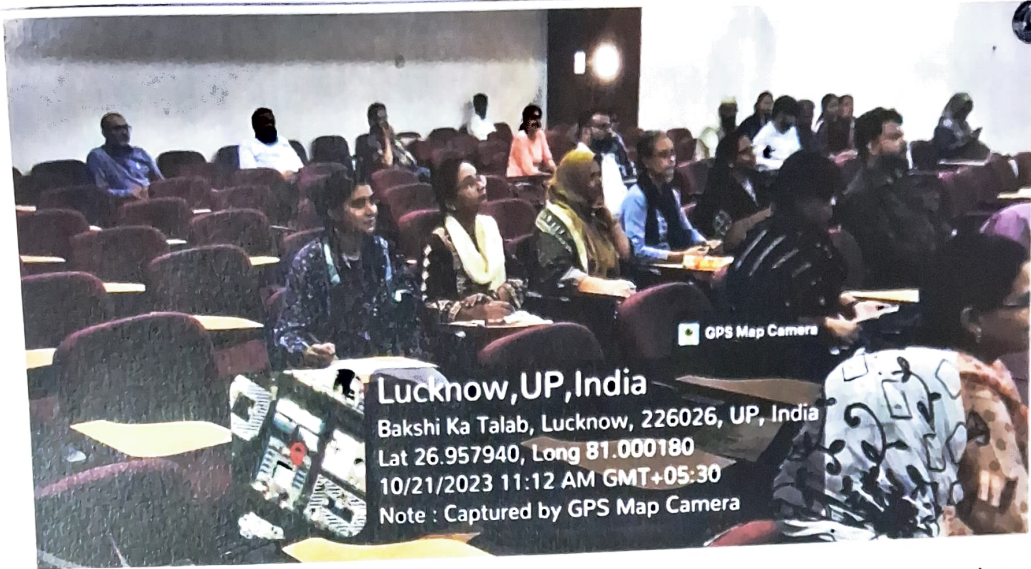


Prof. S.I. Rizvi elaborating about the art of teaching

The lecture was followed by the question session, where the faculty members showed their inquisitiveness and satiated their quench for learning new teaching styles and research methodology from Prof. S.I. Rizvi.



Faculty members of Department of Bioengineering and Biosciences attending the session



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Faculty members of Department of Bioengineering and Biosciences attending the session

This was followed by the Vote of Thanks by Prof. Iffat Zareen Ahmad, Department of Bioengineering and felicitation, through memento presentation as a token of appreciation and gratitude, of the respected resource person Prof. S. I. Rizvi by Dr. Nida Fatima, Deputy Director, Centre of Incubation and Entrepreneurship Development (CIED). Overall, the session was a highly fruitful and beneficial learning opportunity for all the faculty members.



Prof. S. I. Rizvi being felicitated with university memento by Dr. Nida Fatima



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Group photograph

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Session 3

Human Resource Development Centre, Integral University, Lucknow in association with the Department of Bioengineering and Department of Biosciences, Integral University organises a **Refresher Course cum Faculty Development Program** for their faculty members on the very interesting topic of "Recent Advancements in Biotechnology for Sustainable Development". This course aims to refresh and update the current knowledge of teachers to address the rapidly changing educational needs. The first activity of the series was conducted on 7th October, 2023 at Hall 1, Central Auditorium Complex of the Integral University in the presence of faculty members of both the departments. The session began with the welcome of esteemed resource person, **Prof. Bushra Ateeq**, Professor & Joy Gill Chair, Department of Biological Sciences & Bioengineering, Indian Institute of Technology, Kanpur through a floral bouquet which was presented by Dr. Roohi, Professor, Department of Bioengineering, Integral University.



Floral welcome of Prof. Bushra Ateeq by Prof. (Dr.) Roohi

Dr. Alvina Farooqui

Professor & Head

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Prof. Bushra Ateeq chaired the dais with Dr. Nida Fatima, Deputy Director, CIED and Prof. (Dr.) Snober Mir

She made a talk on “**Molecular characterization of Prostate Cancer: Prospects of Precision Medicine in India**”. She emphasized the importance of Precision medicine, sometimes known as “**Personalized medicine**” which is an innovative approach to tailoring disease prevention and treatment that takes into account differences in people's genes, environments, and lifestyles. The goal of precision medicine is to target the right treatments to the right patients at the right time. **Prof. Ateeq** discussed how her research group is primarily interested in exploring the genetic and epigenetic changes that initiate cancer and its progression by employing novel strategies and approaches. She highlighted her efforts in exploring the comprehensive mutational landscape of Indian prostate cancer patients representing the entire disease spectrum (indolent localized to aggressive metastatic disease), understanding the functional significance of the newly identified mutation(s) and in identification of actionable alterations.

Dr. Alvina Farooqui
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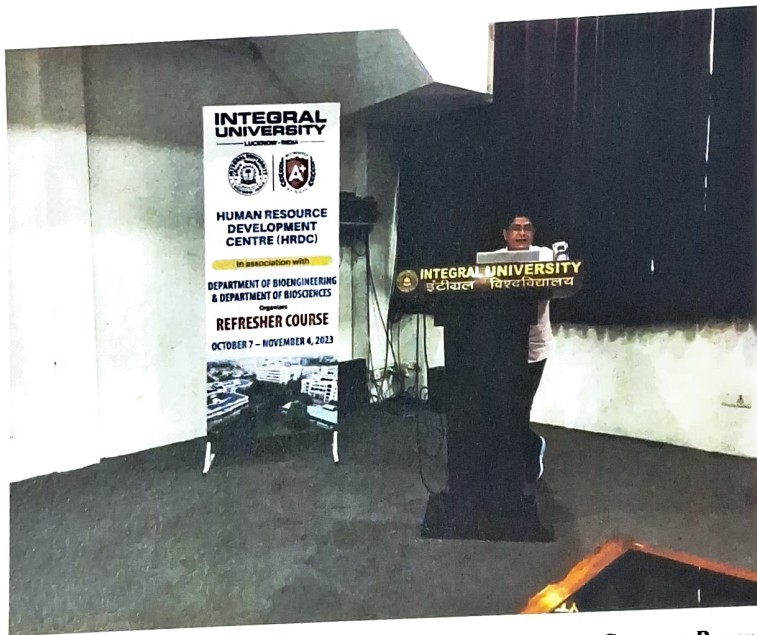
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The major focus of her talk was:

- Integrative sequencing for comprehensive identification of clinically significant alterations in Indian prostate cancer patients.
- Genome wide screen of frequently mutated and hotspot regions associated with prostate cancer risk.
- Characterize functional relevance of the genetic or epigenetic alterations by employing molecular and cellular approaches.
- Understand the molecular mechanisms involved in the emergence of aggressive prostate cancer subtype to overcome anti-androgen or drug resistance.
- Develop prostate cancer patient-derived organoids from biopsies and utilize them for genomic characterization and potential drug screen.
- Develop tumor cell-free DNA or exosome-based diagnostics panel for clinically-relevant aberrations for screening advanced stage prostate cancer patients.



Lecture address on “Molecular characterization of Prostate Cancer: Prospects of Precision Medicine in India” by Prof. Bushra Ateeq

She ended her lecture by thanking her collaborators and funding agencies, for contributing in her current journey. The anchoring of the session was successfully done by **Dr. Taiba Saeed** and vote of thanks was delivered by **Dr. Snober S. Mir**, Head, Department of Biosciences, Integral University.

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Professor & Head

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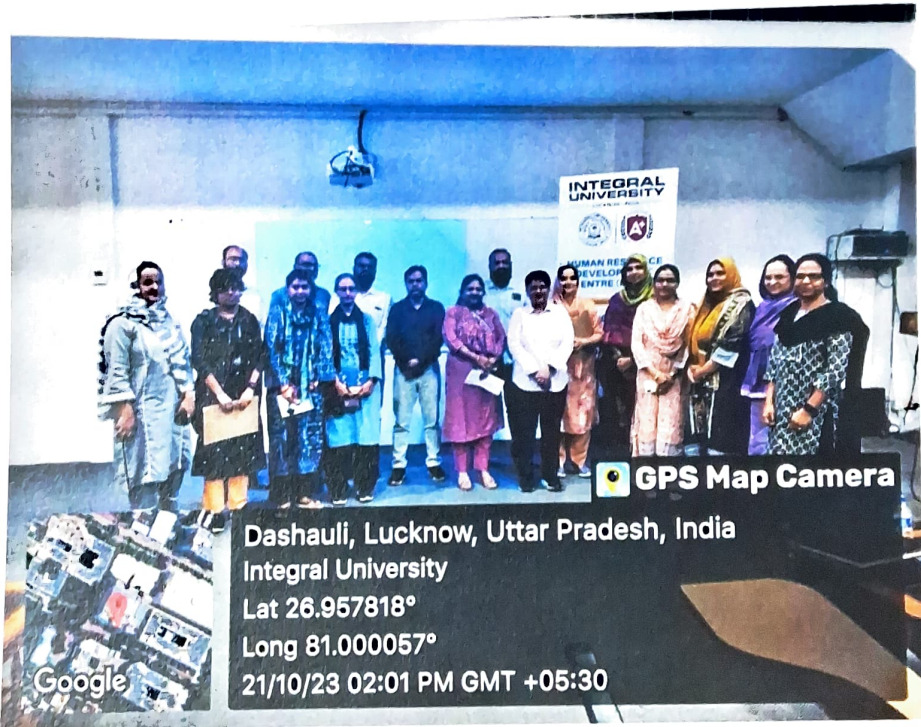
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Vote of thanks by Prof. (Dr.) Snober Mir



Group photograph

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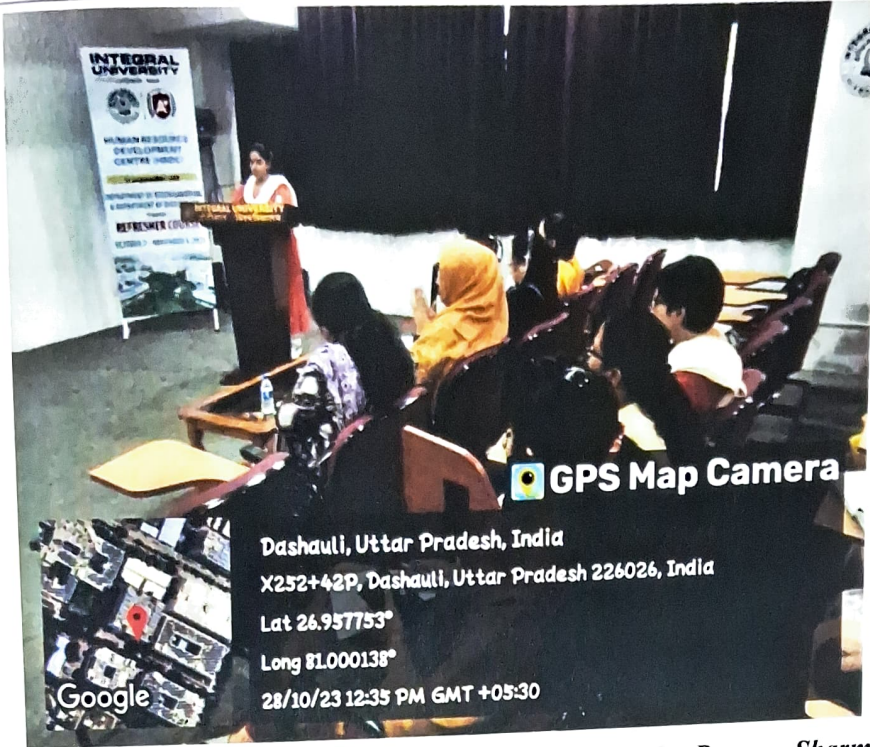
Session 4

(28th October, 2023)

In continuation to the first activity conducted on 7th October 2023, Human Resource Development Centre, Integral University in association with the Department of Bioengineering and Department of Biosciences organized the 4th session of the series of the Refresher Course cum Faculty Development Program on “Recent Advancements in Biotechnology for Sustainable Development” on 28th October 2023 at Hall-1, Central Auditorium Complex, Integral University, Lucknow. This course was organized with the aim to refresh and update the current knowledge of teachers to address the rapidly changing educational needs. The activity was efficiently organized under the able guidance of the Conveners, Prof. (Dr.) Alvina Farooqui, Head, Department of Bioengineering and Prof. (Dr.) Snober S. Mir, Head, Department of Biosciences and Co-conveners, Prof. (Dr.) Roohi, Department of Bioengineering and Dr. Amita Dubey, Assistant Professor, Department of Biosciences.

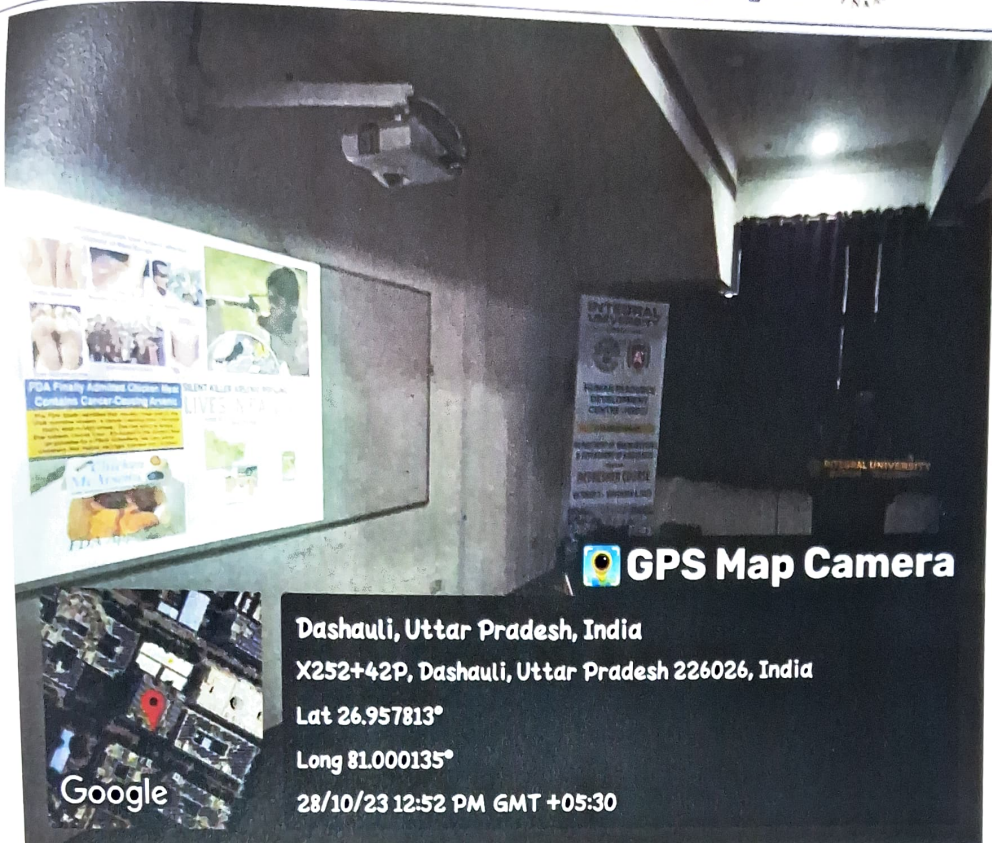
Session 5 of the activity was hosted by Dr. Poonam Sharma, Assistant Professor, Department of Bioengineering. She welcomed the eminent resource person of the session Dr. R.D. Tripathi Senior Scientist, CSIR-National Botanical Research Institute, Lucknow and the faculty members of Department of Bioengineering and Biosciences to the session. After the welcome, Dr. Poonam Sharma, Department of Bioengineering introduced the resource person to the audience. She acquainted the audience with the research area of Dr. R.D. Tripathi involving study.

Dr. Alvina Farooqui
Professor & Head
Department of Bioengineering
Faculty of Engineering



Welcome address of Resource Person Dr. R.D. Tripathi by Dr. Poonam Sharma

The topic of the session was “Arsenate and arsenite exposure modulate antioxidants and amino acids in contrasting arsenic accumulating rice (*Oryza sativa* L.) genotypes”. Dr. R.D. Tripathi began the lecture with the ground water contamination, soil arsenic status and field trials with germplasm in west Bengal. In his research work 300 rice genotype were screened at selected Arsenic contaminated sites of west Bengal. Seven low arsenic accumulating rice genotypes were selected with low grain arsenic. These are being recommended for cultivation by farmer in highly arsenic affect areas of west Bengal. The new and safe variety CN1794-2-CSIR-NBRI was released in feb.2016 for cultivation by farmers in arsenic prone areas of west Bengal and also by ICAR central committee. Mukdashri (IET 21845) a new rice variety was developed jointly by the Rice Research Station, Chinsurah, West Bengal Department of Agriculture and CSIR-NBRI, Lucknow and further approved by SVRC, West Bengal in jan 2016. This rice variety is suitable for cultivation in arsenic prone agriculture fields of the country. It maintains a yield of 55 quintals per ha in the boro season. He also explains the arsenic volatilization in transgenic A. thaliana on exposure of arsenic for 24h and 48h. His research reveals that higher selenium level reduces arsenic levels in rice grain and vice-versa at arsenic contaminated site Birnagar (Nadia, West Bengal) during boro season.



Dr. R.D. Tripathi elaborating his research

He concluded his lecture by summarizing the screening and selection and multilocational field trails with low grain arsenic cultivars resulted in development of new variety (CN1794-2-CSIR-NBRI) as Mukdashree for the arsenic contaminated regions. Transgenic rice plant expression WaarsM exhibited high tolerance, high arsenic volatilization and low accumulation in rice seeds, safer for human consumption. Selenium supplementation has been found to minimize As accumulation, toxicity and improve nutritional quality of rice.

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Faculty members of Department of Bioengineering and Biosciences attending the session

The lecture was followed by the question session, where the faculty members showed their inquisitiveness and satiated their quench for research methodology from Dr. R.D. Tripathi. This was followed by the Vote of Thanks by Prof. Snober S. Mir, Department of Biosciences and felicitation, through memento presentation as a token of appreciation and gratitude, of the respected resource person Dr. R.D. Tripathi by Dr. Nida Fatima, Deputy Director, Centre of Incubation and Entrepreneurship Development (CIED). Overall, the session was a highly fruitful and beneficial learning opportunity for all the faculty members.

Dr. Amina Farooqui
Professor & Head
Department of Bioengineering
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Dr. R.D. Tripathi being felicitated with university memento



Group photograph

Dr. Alvira Farooqui

Dr. Alvira Farooqui
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Session 5

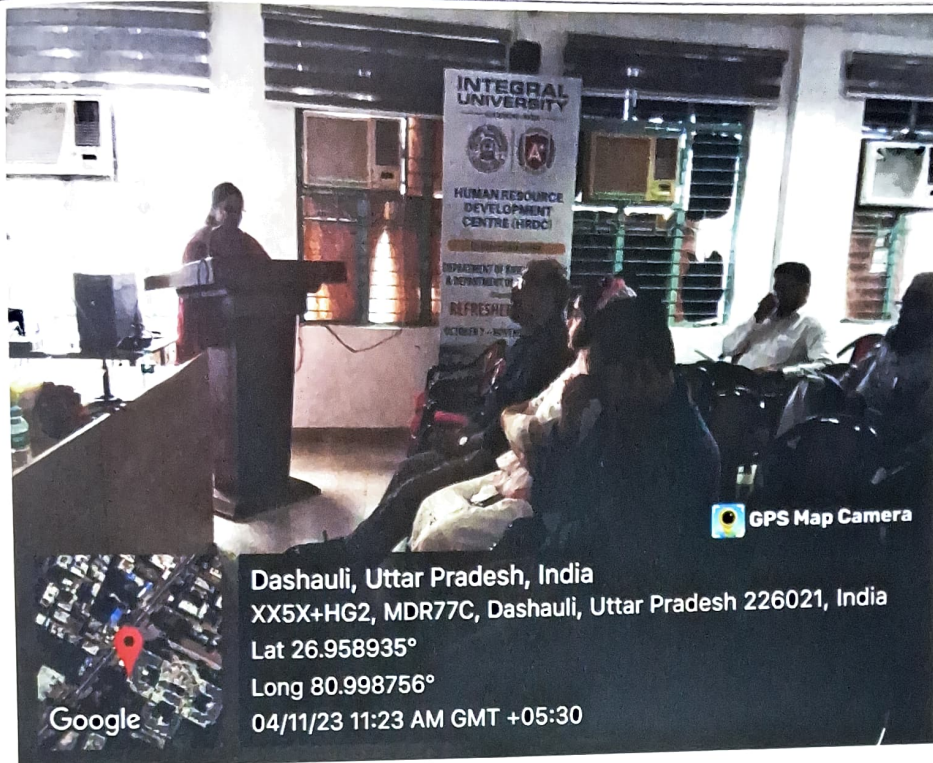
(4th November, 2023)

The fifth lecture in the Refresher Course cum Faculty Development Program, organized collaboratively by the Department of Bioengineering and the Department of Biosciences, took place on November 4, 2023. The lecture, titled "Journey of Umifenovir as an Anti-SARS-CoV-2 Therapeutics," featured Professor R. Ravishankar Ramachandran as the guest speaker. Prof. Ramachandran, Chief Scientist at the Molecular and Structural Biology division of the Sophisticated Analytical Instrument Facility, CDRI, Lucknow, provided invaluable insights into the repurposing of Umifenovir as a therapeutic agent against the SARS-CoV-2 virus.

The event commenced with a warm welcome address by Dr. Farina Mujeeb, who also introduced Prof. Ravishankar to the audience. Prof. Ramachandran's remarkable journey in the field of molecular and structural biology was highlighted, including his extensive work involving X-ray crystallography, biochemical/biophysical studies, NMR, and rational structure-based computational analyses in unravelling the molecular mechanisms of key pathways and proteins associated with human pathogens.



Floral welcome of Prof. Ramachandran by Prof. (Dr.) Roohi



Welcome address of Resource Person Prof. Ramachandaran by Dr. Poonam Sharma

The topic of the session was “Journey of Umifenovir as an Anti-SARS-CoV-2 Therapeutics”. Prof. Ramachandaran's presentation centred on the innovative repurposing of Umifenovir, an antiviral drug initially used against influenza, as an effective tool in the battle against SARS-CoV-2. He explained that Umifenovir was chosen for its remarkable safety profile, with an LD50 exceeding 4 g/kg and ease of local manufacturing using readily available starting materials. Furthermore, it is FDA-approved for use in children and pregnant women, enhancing its potential utility.

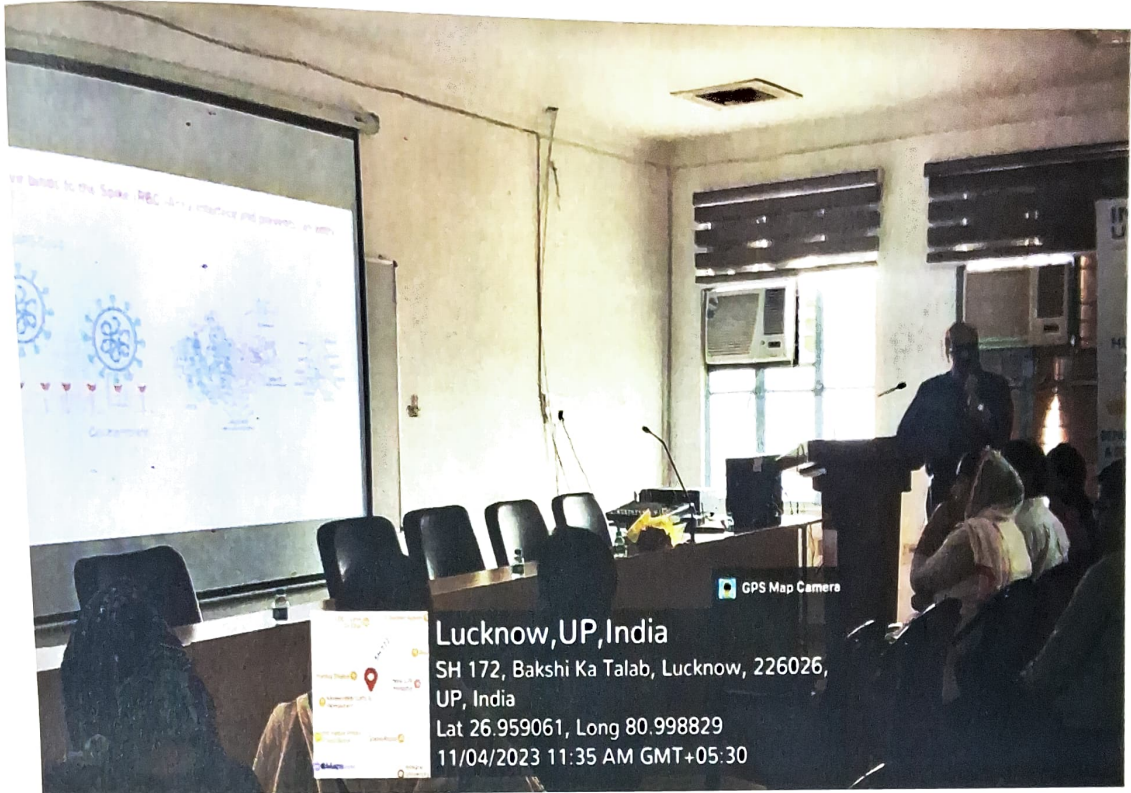
Umifenovir's mechanism of action was elucidated, as it binds to the spike protein's receptor-binding domain (RBD) and ACE2 interface, effectively preventing the virus from entering host cells. This inhibits SARS-CoV-2 cell cultures, prevents syncytia formation, and cell fusion, and counters lymphopenia, showcasing its potential as a potent therapeutic agent.

Prof. Ramachandran elaborated on the challenges faced during the technology transfer process, especially during the nationwide lockdown in April 2020. Nevertheless, the GMP synthesis of Umifenovir commenced successfully. With the data demonstrating that the administration of 800 mg of the drug in healthy individuals yielded a C_{max} of 4.2 micron, an

Dr. Poonam Sharma



IC50 value ranging from 110 nM to 4.2 microM, and a high LD50 value, a dosage regimen of 800 mg of Umifenovir twice daily was planned.



Prof. Ramachandran elaborating his research

Permission was granted to initiate phase 2 clinical trials on June 16, 2020, involving a double-blind placebo, with 123 patients participating. Remarkably, the results showed a significant promise. In the mild, asymptomatic patient group, 70% of those administered the drug turned RT-PCR negative on the 5th day, compared to 40% in the placebo group. Additionally, a tendency for faster clinical recovery was observed in moderate patients who received the drug.

Prof. Ramachandran also highlighted that Umifenovir demonstrated superior efficacy when compared to another antiviral drug, Favipiravir, which is noteworthy in the context of identifying potential COVID-19 therapeutics.

Dr Nida Fatima, the Department Director of CIED at Integral University, was an honored presence at the lecture, further enriching the academic and scientific atmosphere.

Alvin Farooqui
Dr. Alvin Farooqui
Professor & Head
Department of Electronics & Communication Engineering
Faculty of Engineering
Integral University, Lucknow-226026



The lecture concluded with a vote of thanks by Prof. Snober S. Mir, Head of the Department of Biosciences. The insightful session provided a deep understanding of the journey of Umifenovir as an anti-SARS-CoV-2 therapeutic, highlighting its potential to address the challenges posed by the pandemic. Prof. Ramachandaran's work serves as a testament to the



significance of repurposing existing drugs and the potential impact of scientific collaborations in the fight against infectious diseases.

Faculty members of Department of Bioengineering and Biosciences attending the session

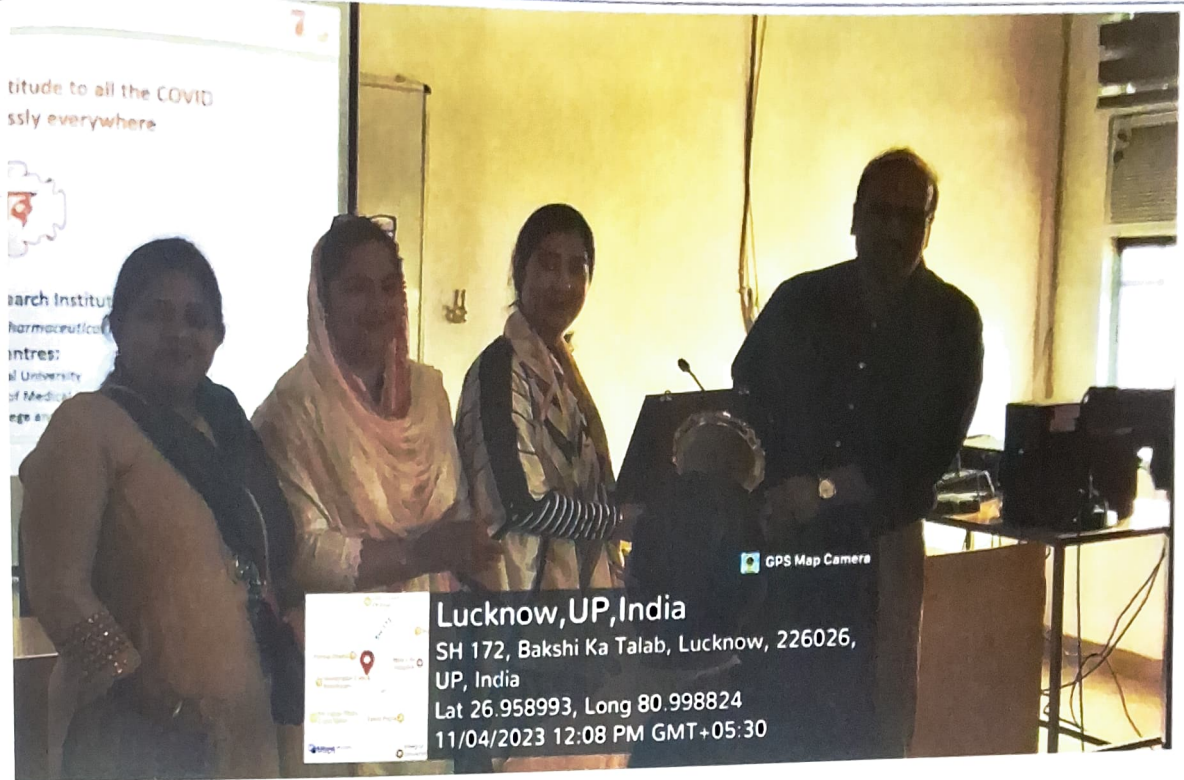
Dr. Alvina Farooqui
Professor & Head
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Prof. Ramachandran being felicitated with university memento

Dr. Alvina Farooqui

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REFRESHER COURSE/FDP COMPLETION CERTIFICATE

This is to certify that _____ from the Department of Bioengineering
has successfully completed Two weeks Refresher Course/FDP

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RECENT ADVANCEMENTS IN BIOTECHNOLOGY FOR SUSTAINABLE DEVELOPMENT

Organized by

Department of Bioengineering & Human Resource Development Centre, Integral University

From

October 07, 2023 to November 04, 2023

conducted at Integral University, Lucknow

(Each session comprised of expert lecture, discussion & activities besides a final quiz and assignment)

Prof. (Dr.) Alvina Farooqui
Head,
Department of Bioengineering
Integral University

Prof. (Dr.) Syed Aqeel Ahmad
Director,
HRDC
Integral University

Prof. (Dr.) T. Usmani
Dean,
Faculty of Engineering & IT
Integral University

Session with Details:

Session	Date	Resource Person	Title	Designation and Affiliation of the Resource Person
I	7 th October, 2023	Prof. Ashwani Thakur	From students to Scholars: Nurturing Independence for Research Impact	Professor & Coordinator, Department of Biological Sciences and Bioengineering, Indian Institute of Technology, Kanpur
II	21 st October, 2023	Prof. S. I. Rizvi	The Art of Teaching and Research	Professor, Department of Biochemistry, Dean, Research & Development, University of Allahabad
III	21 st October, 2023	Prof. Bushra Ateeq	Molecular characterization of Prostate Cancer: Prospects of Precision Medicine in India	Professor & Joy Gill Chair, Department of Biological Sciences & Bioengineering, Indian Institute of Technology, Kanpur
IV	28 th October, 2023	Dr. R.D. Tripathi	Arsenate and arsenite exposure modulate antioxidants and amino acids in contrasting arsenic accumulating rice (<i>Oryza sativa</i> L.) genotypes	NASI-Senior Scientist, CSIR-National Botanical Research Institute, Lucknow
V	4 th November, 2023	Prof. Ramachandran	Journey of Umifenovir as an Anti-SARS-CoV-2 Therapeutics	Chief Scientist at the Molecular and Structural Biology Division of the Sophisticated Analytical Instrument Facility, CDRI, Lucknow

Sample certificate

Dr. Alvina Farooqui
Professor & Head
Department of Bioengineering
Faculty of Engineering & IT
Integral University



DEPARTMENT OF BIOENGINEERING
FACULTY OF ENGINEERING & IT

Two Weeks Refresher Course cum Faculty Development Program

on

“Recent Advancements in Biotechnology for Sustainable Development”

for

Faculty Members of Department of Bioengineering and Department of Biosciences

Resource person: Prof. Ashwani Thakur

(Biological Sciences and Bioengineering, IIT Kanpur)

Date: 07/10/2023

S.No.	Name	Designation	Signature
1.	Prof. (Dr.) Iffat Zareen Ahmad	Professor	
2.	Prof. (Dr.) Alvina Farooqui	Professor	
3.	Prof. (Dr.) Salman Akhtar	Professor	
4.	Prof. (Dr.) Roohi	Professor	
5.	Prof. (Dr.) Mohd. Kalim Ahmad Khan	Professor	
6.	Prof. (Dr.) Aisha Kamal	Professor	
7.	Dr. Nida Fatima	Assistant Professor	
8.	Dr. Adnan Ahmad	Assistant Professor	
9.	Dr. Khwaja Osama	Assistant Professor	
10.	Mr. Soban Ahmad Faridi	Assistant Professor	
11.	Mrs. Poonam Sharma	Assistant Professor	
12.	Dr. Ashish	Assistant Professor	
13.	Dr. Reena Vishvakarma	Assistant Professor	
14.	Dr. Punit Kumar Singh	Assistant Professor	
15.	Dr. Rahul Singh	Assistant Professor	



16.	Ms. Gazia Nasir	Assistant Professor	
17.	Dr. Zeeshan Rafi	Assistant Professor	
18.	Dr. Imran Hussain	Assistant Professor	
19.	Dr. Irfan Khan	Assistant Professor	

DQAC Chairperson

Head

Department of Bioengineering
Professor & Head
Department of Bioengineering
Faculty of Engineering
Integral University, Lucknow-226026



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FACULTY OF ENGINEERING & IT

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Resource person: Prof. S. I. Rizvi
(Professor, Department of Biochemistry and Dean, Research & Development,
University of Allahabad)

Date: 21/10/2023

S.No.	Name	Designation	Signature
1.	Prof. (Dr.) Iffat Zareen Ahmad	Professor	
2.	Prof. (Dr.) Alvina Farooqui	Professor	
3.	Prof. (Dr.) Salman Akhtar	Professor	
4.	Prof. (Dr.) Roohi	Professor	
5.	Prof. (Dr.) Mohd. Kalim Ahmad Khan	Professor	
6.	Prof. (Dr.) Aisha Kamal	Professor	
7.	Dr. Nida Fatima	Assistant Professor	
8.	Dr. Adnan Ahmad	Assistant Professor	
9.	Dr. Khwaja Osama	Assistant Professor	
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14.	Dr. Punit Kumar Singh	Assistant Professor	



15.	Dr. Rahul Singh	Assistant Professor	
16.	Ms. Gazia Nasir	Assistant Professor	
17.	Dr. Zeeshan Rafi	Assistant Professor	
18.	Dr. Imran Hussain	Assistant Professor	
19.	Dr. Irfan Khan	Assistant Professor	

DQAC Chairperson

Head

Department of Bioengineering

Dr. Zeeshan Rafi
Professor & Head
Department of Bioengineering
Faculty of Engineering
Integral University, Lucknow-226026



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Resource person: Prof. Bushra Ateeq

(Professor & Joy-Gill Chair, Biological Sciences and Bioengineering, IIT Kanpur)

Date: 21/10/2023

S.No.	Name	Designation	Signature
1.	Prof. (Dr.) Iffat Zareen Ahmad	Professor	
2.	Prof. (Dr.) Alvina Farooqui	Professor	
3.	Prof. (Dr.) Salman Akhtar	Professor	
4.	Prof. (Dr.) Roohi	Professor	
5.	Prof. (Dr.) Mohd. Kalim Ahmad Khan	Professor	
6.	Prof. (Dr.) Aisha Kamal	Professor	
7.	Dr. Nida Fatima	Assistant Professor	
8.	Dr. Adnan Ahmad	Assistant Professor	
9.	Dr. Khwaja Osama	Assistant Professor	
10.	Mr. Soban Ahmad Faridi	Assistant Professor	
11.	Mrs. Poonam Sharma	Assistant Professor	
12.	Dr. Ashish	Assistant Professor	
13.	Dr. Reena Vishvakarma	Assistant Professor	
14.	Dr. Punit Kumar Singh	Assistant Professor	
15.	Dr. Rahul Singh	Assistant Professor	
16.	Ms. Gazia Nasir	Assistant Professor	



17.	Dr. Zeeshan Rafi	Assistant Professor	
18.	Dr. Imran Hussain	Assistant Professor	
19.	Dr. Irfan Khan	Assistant Professor	

DQAC Chairperson

Head

Department of Bioengineering

Dr. Alvina Farooqui
Professor & Head
Department of Bioengineering
Faculty of Engineering
Integral University, Lucknow-226026



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Resource person: Dr. R. D. Tripathi

(NASI-Senior Scientist & Emeritus Professor (AcSIR), CSIR-National Botanical Research Institute, Lucknow)

Date: 28/10/2023

S.No.	Name	Designation	Signature
1.	Prof. (Dr.) Iffat Zareen Ahmad	Professor	
2.	Prof. (Dr.) Alvina Farooqui	Professor	
3.	Prof. (Dr.) Salman Akhtar	Professor	
4.	Prof. (Dr.) Roohi	Professor	
5.	Prof. (Dr.) Mohd. Kalim Ahmad Khan	Professor	
6.	Prof. (Dr.) Aisha Kamal	Professor	
7.	Dr. Nida Fatima	Assistant Professor	
8.	Dr. Adnan Ahmad	Assistant Professor	
9.	Dr. Khwaja Osama	Assistant Professor	
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19.	Dr. Irfan Khan	Assistant Professor	

DQAC Chairperson

Head

Department of Bioengineering

Professor & Head
Department of Bioengineering
Faculty of Engineering
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DEPARTMENT OF BIOENGINEERING
FACULTY OF ENGINEERING & IT

Two Weeks Refresher Course cum Faculty Development Program
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Faculty Members of Department of Bioengineering and Department of Biosciences

Resource person: Prof. Ravishankar Ramachandran

(Chief Scientist, Molecular and Structural Biology Division, CSIR-CDRI, Lucknow)

Date: 4/11/2023

S.No.	Name	Designation	Signature
1.	Prof. (Dr.) Iffat Zareen Ahmad	Professor	
2.	Prof. (Dr.) Alvina Farooqui	Professor	
3.	Prof. (Dr.) Salman Akhtar	Professor	
4.	Prof. (Dr.) Roohi	Professor	
5.	Prof. (Dr.) Mohd. Kalim Ahmad Khan	Professor	
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