



INDIAN INSTITUTE OF TECHNOLOGY DELHI
HAUZ KHAS, NEW DELHI, 110016

Prof. T. K. Ghose Memorial Award 2022

November 14, 2022

**Department of Biochemical Engineering and Biotechnology
IIT Delhi**



Programme

November 14, 2022 (Monday)

Weblink for joining in the meeting

<https://teams.microsoft.com/l/meetup-join/19%3aWqOxIHBfGV543GNkW9NKufJ7K-wmkwqL6OtqIUJG4dA1%40thread.tacv2/1668189310321?context=%7b%22Tid%22%3a%22624d5c4b-45c5-4122-8cd0-44f0f84e945d%22%2c%22Oid%22%3a%228668b8ba-0bc1-4641-a1d1-f4e1da648c55%22%7d>



Time (IST)

- 5:00 PM Prof. Ritu Kulshreshtha, Head DBEB**
Introduction to the Memorial Award
- 5:10 PM Prof. Virendra S Bisaria, (PhD, IIT Delhi, 1978)**
- 5:15 PM Prof. Subhash Chand, (PhD, IIT Delhi, 1978)**
Reminiscences about Prof. Ghose
- 5:20 PM Dr. Srishti Srivastava - Awardee**
Investigating the role of mediator complex
- 5:40 PM Prof. Virendra S Bisaria - Introduction to the speaker**
- 5:45 PM Prof Sudhanshu Vrat, Executive Director, RCB**
Lecture on Rotavirus Vaccine Development
:The India Story
- 6:15 PM End of the Function**

Prof T.K. Ghose Endowment



Prof. Tarun Kumar Ghose

The initiator of Biotechnology and Biochemical Engineering research in India. Born on Sep 01, 1924, in West Bengal, he got a doctorate in Science from ETH, Switzerland. Held Professorship in Jadavpur University (Kolkata), HBTI Kanpur and IIT Delhi. Worked with many world renowned scientists from US Natick Lab to France, Switzerland, Australia, Russia, Japan, Brazil, Germany, Poland, Sweden, Spain, Italy, Singapore, etc. He founded Biochemical Engineering in India, chaired the department in IIT Delhi until 1985. He inspired huge number of graduate students, teachers and bio-industry professionals in the field of Biotechnology, Bioprocessing and Biofuels for about five decades, until his last day Sep 24, 2019.

The Prof. T.K. Ghose Memorial Award for Best PhD Thesis in Biochemical Engineering and Biotechnology was instituted in the year 2021 and is administered by the Office of Alumni Relations. This is supported by an endowment created from donations by the erstwhile colleagues and students of Prof. T.K. Ghose.

<https://unlimiitd.iitd.ac.in/research/prof-t-k-ghose-endowment/>



About the award

Prof. T. K. Ghose Memorial Award for Best PhD Thesis in Biochemical Engineering and Biotechnology



<https://alumni.iitd.ac.in/home/index.php/prof-t-k-ghose-memorial-award/>

About

The Award aims to recognize a student of IIT Delhi whose PhD thesis in Biochemical Engineering and Biotechnology has been adjudged to be the best in that particular year.

Eligibility Criteria

All students who have completed their PhD thesis (including oral defence) in the area of Biochemical Engineering and Biotechnology in the year preceding Sep 30 of a given year will be eligible for consideration that year.

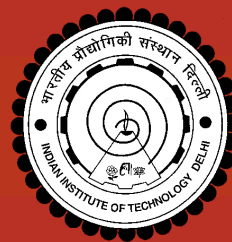
Selection Process

A selection committee constituted by the Head DBEB, comprising external experts and a nominee of the donors selects the awardee.

Value of the Award and presentation

An amount of Rs 50,000 is awarded as the 'Prof. T. K. Ghose Memorial Award for Best PhD Thesis in Biochemical Engineering and Biotechnology'. The award is presented at a ceremony organised by DBEB in the week following the annual convocation of the Institute.

Best PhD thesis Awardee



in recognition of her work in the area of brain cancer research. Her major accomplishments include identification of a novel oncogenic signaling axis in glioblastoma. Her work led to the first ever report to show direct involvement of mediator protein, MED12, a regulator of transcriptomic programming, in promoting glioblastoma pathogenesis. She further showed MED12 is a downstream target of Vitamin D receptor pathway and a crucial regulator of p53 levels. Overall, she showed that targeting MED12/BCL6/p53 axis in glioblastoma may be an attractive therapeutic option. Her work resulted in publications in high impact factor journals and won various awards.

Dr. Srishti Srivastava

Ph.D. Dept. of Biochemical Engg. and Biotechnology, IIT Delhi (2022)

Current Position: Science Writer - Molecular Biology at Journal of Visualized Experiments (JoVE).

Investigating the role of mediator complex subunit, MED12, in glioblastoma

Glioblastoma is the most life-threatening tumor of the central nervous system. Despite recent therapeutic advancements, maximum survival of glioblastoma patients remains dismal. The mediator complex is a set of proteins, essential for eukaryotic gene expression. Abnormal expression/mutations of specific mediator genes have been associated with progression of various cancers, however, its role and status in glioblastoma remains largely unknown. Our work shows overexpression of a subunit of kinase assembly of mediator complex, MED12, in various glioblastoma patient cohorts including Indian glioblastoma patients and cell lines. Functional characterization of MED12 using both overexpression and knockdown approach revealed that it promotes glioblastoma cell proliferation, migration and inhibits apoptosis. Transcriptome analysis post MED12 knockdown revealed Vitamin D receptor (VDR) pathway to be one of the key pathways affected by MED12 in glioblastoma. We studied direct interaction of MED12 with VDR protein using docking studies and co-immunoprecipitation assay. We identify BCL6, a secondary regulator of VDR signaling, to be directly regulated by MED12 through a combination of chromatin immunoprecipitation, qRT-PCR and western analyses. We further show that MED12 brings about the inhibition of p53 levels and apoptosis partly through induction of BCL6 in glioblastoma. Overall, this stands as the first report of MED12 over-expression and involvement in glioblastoma pathogenesis and identifies MED12 as an important mediator of VDR signaling and an attractive molecule for development of new therapeutic interventions.

Memorial Award Lecture

Lecture on Rotavirus Vaccine Development: The India Story



Professor
Executive Director, Regional
Centre for Biotechnology Faridabad

Dr. Sudhanshu Vrati

Dr. Sudhanshu Vrati, an immunologist & virologist, is the Executive Director of the UNESCO Regional Centre for Biotechnology, an institution of national importance established by the Department of Biotechnology, Govt. of India. Known for his studies in the fields of RNA virus replication and vaccine development, Dr. Vrati has given a new dimension to the field of translational biology. Dr. Vrati is an elected fellow of the Indian National Science Academy (INSA), the National Academy of Sciences, India (NASI), and the Indian Academy of Sciences (IAS). The Department of Biotechnology, Government of India awarded him the prestigious TATA Innovation Fellowship and conferred upon him the coveted National Bioscience Award for his contributions to biosciences. He is currently a J C Bose National Fellow of the Science and Engineering Research Board (SERB) of the Govt. of India.

Passionate about science and microorganisms, he did his M.Sc. in Microbiology from G. B. Pant University of Agriculture and Technology, DIIT in Biochemical Engineering from Indian Institute of Technology Delhi and PhD in Biochemistry from the Australian National University in Canberra. He did his postdoctoral research at CSIRO Molecular Sciences in Sydney. Dr. Vrati has been a visiting scientist at the Pasteur Institute, Paris and a Director on the Board of Bharat Immunologicals and Biologicals Corporation, a Government of India undertaking involved in the manufacture of vaccines and biologicals. Before his appointment as Executive Director, RCB, Dr. Vrati served as the founder dean at the Translational Health Science and Technology Institute (THSTI).

Dr. Sudhanshu Vrati has contributed immensely to our understanding of the biology of Japanese encephalitis and Dengue viruses where he has worked extensively on development of vaccine candidates and antivirals. He was actively involved in the clinical development of the first Indian Rotavirus vaccine that is produced and marketed by Bharat Biotech. In the recent times, Dr. Vrati has established a high throughput antiviral screening platform for SARS CoV-2 and is studying the emerging variants of the virus.

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