



Jayaram B. Ph.D. (CUNY, USA)

Professor of Chemistry,

Coordinator, Supercomputing Facility for Bioinformatics and
Computational Biology & Coordinator, School of Biological Sciences,
Indian Institute of Technology, Hauz Khas, New Delhi-110016, India.

Email: bjayaram@chemistry.iitd.ac.in; bjayaram@scfbio-iitd.res.in

Website: www.scfbio-iitd.res.in

Tel No.: 91-11-2659 1505; 2659 6786

Dr. Jayaram joined IIT Delhi as a faculty in the Chemistry Department in 1990. Prior to this, he obtained his Ph.D. in Chemistry from the City University of New York (1986) under the guidance of Prof. David Beveridge, a renowned quantum chemist and one of the world's leading experts in DNA modeling. Dr. Jayaram's thesis work was concerned with developing methodologies to model nucleic acid constituents at atomic level under aqueous conditions on what was then one of the largest computer installations of IBM in mid-town Manhattan. After his Ph.D., he took up a Post Doctoral assignment with Prof. Barry Honig, a pioneer in Biomolecular Electrostatics and Bioinformatics, at Columbia University, USA. Dr. Jayaram's contributions on electrostatics of DNA have eventually found their way into Delphi software of what was formerly Biosym and now Accelrys. Subsequently he worked as a Senior Research Associate with Prof. Beveridge at Wesleyan University where he developed methodologies to help understand the energetics of Biomolecular recognition.

At IIT Delhi, he started building the infrastructure to carry out biomolecular modeling and creating the necessary science and software pursuing the dream of developing *in silico* solutions for personalized medicine (individual specific drugs with no side effects). A result of these efforts is the Supercomputing Facility for Bioinformatics & Computational Biology (SCFBio) at IIT Delhi, and the *Gene to Drug* suite of softwares (www.scfbio-iitd.res.in). The SCFBio currently hosts about 700 processors with a compute capacity close to 6 Tera Flops and 25 terabytes of storage and is made freely accessible to the student and scientific community from different parts of the world. The *Gene to Drug* software suite, accessible over the net freely, comprises Genome Analysis programs (*Chemgenome*), Protein Structure prediction programs (*Bhageerath*) and computational tools for Drug Design (*Sanjeevini*). *Chemgenome* is a novel successful step towards deciphering the language of DNA from an energetic perspective. *Bhageerath* is one of the very few *de novo* protein tertiary structure prediction web-servers for small proteins across the globe. The *Sanjeevini* protocols are of immense value in new drug discovery. The SCFBio website is accessed by over 10,000 users per day from more than 30 countries (www.scfbio-iitd.res.in/usage).

Prof. Jayaram published and presented over 100 papers in refereed international journals of high impact and in national and international conferences. He has supervised 15 Ph.D. students (10 completed, 5 in progress) and several M.Tech., M.Sc. and B. Tech. Project students. Prof. Jayaram has been a consultant to HCL Life Sciences Division and Dabur Research Foundation. *Leadinvent* (www.leadinvent.com), a start up company based on *Sanjeevini* for customized computer aided drug design for Pharma industry, formed by his former students and project scientists which successfully moved out of incubation at IIT Delhi is rated as the fastest growing start-up in Asia-Pacific region by Biospectrum (2011). Another start-up *Novoinformatics* for genomics and proteomics

work formed by the next batch of students of SCFBio is currently under incubation under the aegis of FITT at IIT Delhi.

Jay as he is known, believes that language of DNA is close to being deciphered, that the protein folding problem, the holy grail of molecular biology, unsolved for the last 60 years, would find a solution soon and that computers would generate reliable lead molecules to fight disease. He is proud of being instrumental in creating Children's parks in IIT Delhi. A flutist by passion and a long distance runner, he intends to participate in New York Marathon and dreams of climbing Mt. Everest one of these years.

Prof. Jayaram was awarded the CRSI (Chemical Research Society of India) medal in 2000 for contributions to research in Chemistry. He was a member of the National Task Force on Bioinformatics of the Department of Biotechnology, Govt. of India and Bioinformatics Task Force of the Ministry of Information Technology. He is a Vice President of the Indian Biophysical Society. He is a member of the Programme Advisory Committee for Physical Chemistry (2004-2006) and Organic Chemistry (2006 onwards) of the Department of Science and Technology. Prof. Jayaram is also a member of the national committee of IUPAB.

