Directory of previous Research Award winners

Year of Award 1985

Giani Zail Singh, President of India

Awardees:

Medical Sciences

Dr. P.K. Ray
Director
Industrial Toxicology Research Centre
Lucknow

Area of research : Immunobiology of cancer to provide better prospects of treatment of some cancers through chemo immunotherapy approach

Dr. T. Ramakrishnan
Professor Microbiology and Cell Biology
Indian Institute of Sciences
Bangalore

Area of research : Molecular Biology of Mycobacterium Tuberculosis to provide better understanding of intermediary metabolism between virulent and avirulent strains and mechanism of action of antitubercular drugs including drug resistance.

Pharmaceutical Sciences

Dr. C.M. Gupta
Head, Division of Membrane Biology,
Central Drug Research Institute (CDRI),
Lucknow

Area of research : Membrane Biology and designing of new classes of liposomes that are quite stable and long lasting in blood circulation.

Current position : Dr. Gupta currently holds the post of Director, Central Drug Research Institute (CDRI), Lucknow. He has also been honoured with Om Prakash Bhasin Award (1999), Goyal Prize in Applied Sciences (2000) and Rajkristo Dutt Memorial Award .

Dr. R.S. MANI
Head, Radiopharmaceutical Division
Bhabha Atomic Research Centre
Bombay

Area of research : Development of new method and technique for production of primary medical isotopes for use in nuclear medicine and medical pharmaceutical research including radio immuno assay reagents and kits.

Year of Award 1986

Chief Guest : Dr. Shanker Dayal Sharma, Vice President of India

Medical Sciences

Prof. C.L. Pathak
Rtd. Professor & Head,
Department of Physiology and Emeritus Medical Scientist-ICMR,
S.N. Medical College
Jodhpur

Area of research : Mechanism of the "Brainbridge Reflex" and Autoregulation of Heart Rate

Dr. (Kumari) A.K. Susheela
Associate Professor of Histocytochemistry
Fluoride & Fluorosis Research Laboratories
Department of Anatomy
All India Institute of Medical Sciences
New Delhi

Area of research : Fluorosis and its effect on skeletal muscle & its pathogenesis and development of prognostic test.

Pharmaceutical Sciences

Dr. R.C. Srivastava
Professor of Chemistry
Birla Institute of Technology & Sciences,
Pillani

Area of research : Role of liquid-membrane phenomenon in the action of drugs and his postulating "Liquid-membrane Hypothesis"

Dr. K.B. Mathur
Assistant Director & Head,
Division of Biopolymers
Central Drug Research Institute
Lucknow

Area of research : Design, synthesis and conformational analysis of peptides of biological importance.

Year of Award 1987

Chief Guest : Dr. Balram Jakhar, Speaker, Lok Sabha

Medical Sciences

Prof. B.N. Dhawan
Director,
Central Drug Research Institute (CDRI),
Lucknow,

Area of research : Role of biogenic amines in regulating CNS activity and demonstration of the receptor types involved.

Current Position : Prof. Dhawan retired as Director CDRI, Lucknow . He has also been honoured with O.P. Bhasin Award, Third World Academy of Sciences Award in Medical Sciences, D.N. Prasad Memorial Award, B C Bacchawat Memorial Life Time Achievement Award, Dhanwantri prize and Vigyan Gaurav Samman of U.P. Govt.

Dr. M.R. Das
Deputy Director,
Centre for Cellular and Molecular Biology,
Hyderabad,

Area of research : Study of molecular basis malignant transformation

Pharmaceutical Sciences

Dr. A.V. Rama Rao

Director,
Regional Research Laboratory,
Hyderabad.

Area of research : Synthesis of antitumour antibiotics, macrolides, synthesis of ionophores and chiral synthesis of biologically active compounds.

Current position : Dr**.** Rao retired as Director, IICT and established his own A. V. Rama Rao Research Foundation. He is also the Chairman / Managing Director, Avra Laboratories Pvt. Ltd. He has also been honoured with Padma Shree Award - 1991 for his significant contributions in the field of organic chemistry.

Prof. Harkishan Singh
Department of Pharmaceutical Sciences,
Punjab University,
Chandigarh,

Area of research : Synthetic medicinal chemistry and azasteroidal neuromuscular blocking agents.

Current position : Prof. Singh superannuated from his post in Punjab University. The University also bestowed the title of "Professor Emeritus" on Dr. Singh.

Year of Award 1988

Chief Guest: Shri M.S. Gurupadaswamy, Minister of Petroleum & Chemicals

Medical Sciences

Dr. G.P. Talwar
Director,
National Institute of Immunology,
New Delhi

Area of research : Development of an anti - HCG Vaccine for use in women and devising an agent which sterilises male mammals without affecting the libido.

Current position : Prof. Talwar is currently the Director Research, Talwar Research Foundation, New Delhi. Prof. Talwar has also been honoured with Padma Bhushan - 1992, Nils Lagerlef Memorial Award - 1992, Indira Gandhi Priyadarshini Award - 1994, Life Time Achievement Award by Indian Immunology Society - 1998, Mastroianni Segal Award - 1999 and Silver Jubilee Award by International Academy of Human Reproduction - 1999.

Dr. P.M. Bhargava
Director,
Centre for Cellular & Molecular Biology,
Hyderabad.

Area of research : Primary liver cell suspensions; discovered seminalplasmin may be involved in the regulation of fertility and better understanding of the mechanism of regulation of cell division and malignant transformation.

Pharmaceutical Sciences

Dr. D.S. Bhakuni
Scientist,
Central Drug Research Institute,
Lucknow.

Area of research : Designed and synthesized several types of nucleosides involved in viral multiplication along with a number of antiallergic and anticancer agents.

Dr. A.P. Bhaduri
Assistant Director,
Central Drug Research Institute, (CDRI)
Lucknow.

Area of research : Development of new heterocyclic drugs including agents to reverse Chloroquin resistance in Malarial.

Current position : Dr. Bhaduri superannuated as Senior Deputy Director, Central Drug Research Institute, Lucknow. He has also been honoured with Prof. K.G. Naik, Gold Medal (1994) and fellowship of National Academy of Sciences (1992). In addition Dr. Bhaduri also represented India in Medicinal Chemistry Section under IUPAC.

Year of Award 1989

Chief Guest : Shri Yashwant Sinha, Minister of Finance

Medical Sciences

Dr. M.K. Bhan
Additional Professor
All India Institute of Medical Sciences,
New Delhi.

Area of research : Childhood diarrhoeal disease - a major national health problem, development of improved oral rehydration solution.

Current position : Dr. Bhan currently holds the post of Secretary, Deptt. of Bio technology, Govt. of India.

Prof. K.N. Agarwal
Director,
Sanjay Gandhi Post Graduate
Institute of Medical Sciences (SGPGI),
Lucknow.

Area of research : Influence of nutritional deprivation in children on intelligence.

Dr. Jyotirmoy Das
Deputy Director & Head
Biophysics Division
Indian Institute of Chemical Biology,
Calcutta.

Area of research : Construction of an Escherichia coli strain which can excrete the B subunit of Cholera toxin.

Dr. V.R. Muthukkaruppan
Professor & Head
Department of Immunology
School of Biological Sciences
Madurai Kamraj University,
Madurai.

Area of research : Immunology of leprosy and typhoid and development of immunodiagnostics for leprosy and typhoid.

Pharmaceutical Sciences

Dr. R.S. Kapil
Director
Regional Research Laboratory (CSIR)
Jammu.

Area of research : Development of 7-methoxydeoxy-vasicinone as a new anti-allergic agent is very significant

Prof. S.P. Gupta
Chemistry Group
Birla Institute of Technology and Science,
Pilani (Rajasthan).

Area of research : Qantitative structure-activity relationship) studies on enzyme inhibitors, drugs acting at central nervous system and local anaesthetics.

Current position : Prof. Gupta is at present working as Professor, Department of Chemistry, Birla Institute of Technology and Science, Pilani.

Year of Award 1990

Chief Guest : Shri Manmohan Singh, Minister of Finance

Basic Medical Sciences

Prof. D. Balasubramanian
Director,
Centre for Cellular and Molecular Biology,
Hyderabad.

Area of research : Aetiology of cataract.

Current position : Dr. Balasubramanian is at present is working as Director of Research, L.V. Prasad Eye Institute, Hyderabad and is also the visiting professor to the University of New South Wales, Australia and Birla Institute of Technology and Science, Pilani, India. He has also been honoured with Padma Shri Award - 2002, Third World Academy of Science Award 1995, Khwarizmi Award of Iran 1996 and National Prize for Science Popularization - 2002.

Applied Medical Sciences

Dr. Vinod Praksh Sharma
Director, Malaria Research Centre,
Delhi

Area of research : Development of "Bioenvironmental Control of Malaria" as an alternative strategy to the use of insecticides.

Pharmaceutical Sciences

Dr. Shrinivas K. Kulkarni
Professor of Pharmacology,
Department of Pharmaceutical Sciences,
Punjab University,
Chandigarh.

Area of research : Psychoneuropharmacology and receptor pharmacology

Year of Award 1991

Chief Guest : Shri Manmohan Singh, Minister of Finance

Basic Medical Sciences

Prof. Suhas C. Sanyal
Head, Department of Microbiology,
Institute of Medical Sciences,
Banaras Hindu University, Varanasi.

Area of research : Immunity and immunoprophylaxis of cholera, Development of a live oral cholera vaccine.

Applied Medical Sciences

Dr. Sudha G. Gangal
Head, Immunology Division,
Cancer Research Institute,
Tata Memorial Centre,
Bombay.

Area of research : Cancer immunology and cancer cell biology, development of monoclonal antibodies to various tumour markers which serve as an aid in the diagnosis of cancers as well as in patient monitoring.

Pharmaceutical Sciences

Dr. T. Ravindranathan
Deputy Director,
National Chemical Laboratory,
Pune.

Area of research : Practical application of chemistry for synthesis of complex drug molecules, innovations in production process technology and biochemical transformations. Dr. Ravindranathan has developed new approaches for the synthesis of artemisinin analogues, which have potential for clinical application in malaria; D(+) Biotin, an expensive vitamin from cheap raw materials and mebendazole, a broad spectrum antihelminthic.

Current position : Dr. Ravinderanathan retired as Scientist G, Deputy Director and as Head Division of Organic Chemistry : Technology from National Chemical Laboratory, Pune.

Dr. M.K. Gurjar
Assistant Director,
Indian Institute of Chemical Technology,
Hyderabad.

Area of research : Development of innovative and cost-effective technologies for the production of basic drugs, like Etoposide - a novel anticancer agent - Timolol maleate, a beta-blocker for the treatment of heart disease & glaucoma and Zidovudine, a new drug for the treatment of AIDS.

Year of Award 1992

Chief Guest : Shri Manmohan Singh, Minister of Finance

Basic Medical Sciences

Prof. G. Padmanaban
Deputy Director,
Indian Institute of Science,
Bangalore.

Area of research : Develop DNA diagnostic probes for the detection of human malarial parasites in blood and mechanism of action of the antimalarial, chloroquine.

Current positon : Prof. Padmanaban is currently working as Honorary Professor, Department of Biochemistry, Indian Institute of Sciences, Bangalore. He has also been honoured with Golden Jubilee Biotechnology Fellowship Award - 2000, Unesco Chair in Biotechnology - 2000, "Distinguished Biotechnologist Fellowship 2003-2008 and Padman Bhushan - 2004.

Applied Medical Sciences

Dr. Ved Prakash Kamboj
Director,
Central Drug Research Institute (CDRI),
Lucknow.

Area of research : Contraceptive development & development of Centchromin, the world's first non-steroidal oral contraceptive.

Current position : Dr. Kamboj was bestowed with the title "Emeritus Scientist', CDRI, Lucknow (1997-2002). He currently holds the post of Chairman, BCIL, New Delhi. He has also been honoured with Bharat Jyoti Award, Ved Prakash Seth Foundation Award, Shri Om Prakash Bhasin Award, Dr. B.N. Ghosh Lecture Oration Award, FICCI Award for Life Sciences and Vigyan Gaurav Samman Award (U.P.)

Pharmaceutical Sciences

Dr. Rashmi H. Barbhaiya
Executive Director,
Depatment of Metabolism and Pharmacokinetics,
Bristol-Myers Squibb Pharmaceutical Research Institute,
Princeton
New Jersey
USA

Area of research : Applications of basic pharmaceutics to support development of new drug candidates and novel drug delivery systems & development of a variety of new drugs for the treatment of AIDS and other infectious diseases, cancer, depression and anxiety and mild to moderate pain-including migraine.

Year of Award 1993

Chief Guest : Sir David Weatherall, FRS, Regius Professor of Medicine Universiry of Oxford

Basic Medical Sciences

Prof. P.S. Sastry
Chairman,
Department of Biochemistry,
Indian Institute of Science,
Bangalore.

Area of research : Metabolism of and Vitamin A, lipids in bacteria, plants and animal tissues.

Applied Medical Sciences

Dr. Shyama C. Bhat
Department of Neurology,
University of Pennsylvania,
Philadelphia,
USA.

Area of research : Development of surface molecules of the

oligodendrocyte, better understanding of the pathogenesis of HIV encephalopathy.

Pharmaceutical Sciences

Prof. K.R.K. Easwaran
Chairman,
Molecular Biophysics Unit,
Indian Institute of Science,
Bangalore.

Area of research : Structure & aggregation of Polyene antifungal antibiotics.

Year of Award 1994

Chief Guest : Prof. Myron E.Essex, Chairman, Harvard AIDS Institute And the Department of Cancern Biology, The Harvard Institute of Public Health, USA

Basic Medical Sciences

Dr. Lalji Singh
Deputy Director,
Centre for Cellular and Molecular Biology (CCMB),
Hyderabad.

Area of research : Molecular Basis of Sex Determination.

Current position : Dr. Lalji Singh is at present working as Director, Centre for Cellular and Molecular Biology, Hyderabad. He has also been honoured with FICCI Award - 2002-2003, Biotechnologist of the year - 2002, Vigyan Gaurav Award - 2003, Isheer Award - 2002, Dr. P.S. Siva Reddy Endowment Award, Shri Om Prakash bhasin Award, Prof. Vishwanath Memorial Lecture Award and Jagdish Chandra Bose Award.

Applied Medical Sciences

Dr. P.K. Sehajpal
Reader,
Department of Molecular Biology and Biochemistry,
Guru Nanak Dev University,
Amritsar.

Area of research : Mechanism of action of cyclosporine A (CSA), an immunosuppressive drug used in organ transplantation.

Clinical Research

Dr. S.K. Sarin
Professor
Department of Gastroenterology,
G.B. Pant Hospital and
Maulana Azad Medical College,
New Delhi.

Area of research : Pathogenesis, diagnosis and treatment of liver diseases in India, especially portal hypertension and non-cirrhotic portal fibrosis (NCPF).

Current position : Dr. S.K. Sarin is at present Professor & Head, Department of Gastroenterology, G.B. Pant Hospital, New Delhi

Pharmaceutical Sciences

Dr. K. Soma Sundaram
Research Assistant Professor,
City University of New York Medical School,

New York.

Area of research : Treatment of Gaucher's Disease, a lipid storage disorder by discovering that cycloserine inhibits cerebroside biosynthesis.

Year of Award 1995

Chief Guest : Prof. Sir Gustav Nossal, Ex-Director, Walter and Eliza Hall Institute of Medical Research University of Melbourne, Australia

Basic Medical Sciences

Prof. Avadhesha Surolia
Professor of Molecular Biophysics
Indian Institute of Science
Bangalore

Area of research : Understanding of the structure and function of lectins having strong medical value.

Applied Medical Sciences

Dr. Sandip Kumar Basu
Director
National Institute of Immunology
New Delhi

Area of research : Receptor-mediated intracellular delivery of drugs to macrophages demonstrating its superior efficacy over conventional chemotherapy.

Current position : Dr. Basu is continuing as Director , National Institute of Immunology, New Delhi. He has also been honoured with Padma Shri Award - 2001, B.R. Ambedker Centenary Award - 1999, R.K. Dutt Memorial Award - 1999 and Biotechnology Award - 1997.

Clinical Research

Dr. Gullapalli N. Rao
Director,
L.V. Prasad Eye Institute,
Hyderabad.

Area of research : Corneal transplantation and eye bank models

Pharmaceutical Sciences

Dr. Ajay Kumar Bose
Professor & Research Professor respectively of the
Department of Chemical Sciences and Engineering,
Stevens Institute of Technology,
New Jersey,
USA.

Area of research : Synthesis of several antibiotics and anti tumour compounds, for the development of novel techniques to the synthesis of optically active forms of many compounds of significance to medicinal chemistry.

Dr. Maghar Singh Manhas
Professor & Research Professor respectively of the
Department of Chemical Sciences and Engineering,
Stevens Institute of Technology,
New Jersey,
USA.

Area of research : Synthesis of several antibiotics and anti tumour compounds, for the development of novel techniques to the synthesis of optically active forms of many compounds of significance to medicinal chemistry.

Year of Award 1996

Chief Guest : Prof. Joshua Lederberg, Nobel Laureate, Rockefeller University, New York

Basic Medical Sciences

Dr. Asis Datta
Vice-Chancellor and
Professor of Molecular Biology and Biochemistry,
Jawaharlal Nehru University,
New Delhi.

Area of research : Molecular Biology with emphasis on mechanisms of viral replication, enzyme regulation in pathogenic yeast and Genetic Engineering and Biotechnology.

Current position : Dr. Datta is currently working as Director, National Centre for Plant Genome Research, New Delhi. He has also been honoured with Padma Shri (1999), Indira Gandhi Priyadarshini Award (2000) and R.D. Birla Award for Science & Technology (2001).

Dr. M. Vijayan
Professor of Molecular Biophysics,
Indian Institute of Science,
Bangalore.

Area of research : Protein-carbohydrate interactions adding to our understanding of the structure, hydration and plasticity of proteins.

Current position : Dr. Vijayan at present holds the position of Honorary Professor / Distinguished Biotechnologist at the Indian Institute of Science, Bangalore. He has also been honoured with Om Prakash Bhasin Award (2000), K.S. Krishan Memorial Lecture Award (2001), Fellowship Third World Academy of Sciences (2000), Jawaharlal Nehru Birth Centenary Award (2003-2004), Padma Shree (2004) and Distinguished Biotechnologist Award (2004).

Applied Medical Sciences

Dr. N. K. Ganguly
Professor and Head,
Department of Experimental Medicine and Biotechnology,
Postgraduate Institute for Medical Education and Research,
Chandigarh.

Area of research : Pathophysiology of diarrhoea and enteric diseases, better understanding of the mechanism and control of diarrhea caused by various parasitic and bacterial infections

Current position : A highly decorated Medical Scientist, Prof. Ganguly currently holds the high position of Director General, Indian Council of Medical Research, New Delhi.

Dr. N. K. Mehra
Professor of Histocompatibility and Immunogenetics,
All India Institute of Medical Sciences,
New Delhi.

Area of research : Molecular basis of susceptibility to disease and immunobiology of organ and bone marrow transplantation, discovery of several unique genes and novel haplotypes for developing effective immune intervention therapies.

Current position : Prof. Mehra is at present the Head, Transplant Immunology & Immunogenetics, AIIMS, New Delhi. He has also been honoured with Jalma Trust Foundation Award, Shri Om Prakash Bhasin Foundation Award, Chief of Army Staff award and Khwarizmi international award.

Clinical Research

Dr. Minnie M. Mathan
Professor of Pathology and
Professor of Medicine & Gastroenterology,
respectively
Christian Medical College,
Vellore.

Area of research : Ultrastructural pathology and epidemiology of diarrhoeal diseases, identification of gram negative bacterial lipopolysacharide (endotoxin) in acute diarrhea and lying a biophysical background for developing endotoxin antagonist.

Clinical Research

Dr. V.I. Mathan
Professor of Pathology and
Professor of Medicine & Gastroenterology,
respectively
Christian Medical College,
Vellore.

Area of research : Ultrastructural pathology and epidemiology of diarrhoeal diseases, identification of gram negative bacterial lipopolysacharide (endotoxin) in acute diarrhea and lying a biophysical background for developing endotoxin antagonist.

Pharmaceutical Sciences

Dr. Ashit K. Ganguly
Senior Vice President,
Chemical Research,
Schering-Plough Research Institute,
Kenilworth, New Jersey,
USA.

Area of research : Natural product chemistry which included isolation of several new molecules, their structure elucidation and the synthesis.

Year of Award 1997

Chief Guest : Prof. Inder M. Verma, Professor of Molecular Biology, The Salk Institute, California

Basic Medical Sciences

Dr. S.E. Hasnain,
Staff scientist,
National Institute of Immunology,
New Delhi.

Area of research : Gene expression and genetic analysis of polymorphism relating to the disease process.

Current position : Dr. Hasnain currently holds the post of Director, Centre for DNA Fingerprinting and Diagnostics, Hyderabad. He has also been honoured with G.D. Birla Award, Golden Jubilee Biotechnology Fellowship Award, Dr. K.V. Rao,

Scientific Society Endowment Oration Award, Rustom Ranji Oration Award and Platinum Jubilee Lecture Award.

Applied Medical Sciences

Dr. S.K. Panda,
Additional Professor,
Department of Pathology,
All India Institute of Medical Sciences,
New Delhi

Area of research : Viral Hepatitis especially Hepatitis C Virus infection

Current position : Dr. Panda is currently working as Professor, Deptt. of Pathology, All India Institute of Medical Sciences, New Delhi.

Dr. A.S.M. Krishnarao
Co-Director,
Harward Medical School Brigham &
Women's Hospital,
Department of Anesthesia Research Laboratories,
USA

Area of research : Identification of a colon specific gene and elucidation of Ly-6A/E function in inflammatory bowel disease

Clinical Research

Dr. K.K. Talwar
Department of Cardiology,
All India Institute of Medical Sciences,
New Delhi

Area of research : Heart muscle diseases and development of new techniques viz. Radiofrequency ablation of Arrhythmias and Automatic Implantable Cardioverter and Defibrillator (AICD) in India

Current position : Dr. Talwar is currently working as Director, Professor & Head Cardiology, PGIMER, Chandigarh. He has also been honoured with Goyal Prize, Dr. B.C. Roy National Award and State Intellectuals Honour Punjab Ratan Award.

Pharmaceutical Sciences

Prof. Raman Venkataramanan
Professor of Pharmaceutical Sciences,
University of Pittsburgh School of Pharmacy,
USA.
Area of research : Pharmacokinetics of antirejection drugs used in organ transplantation

Prof. S.S. Handa
Director,
Regional Research Laboratory, Jammu

Area of research : Plant based drugs which include discovery of potential anticancer antiinflammatory and hepatoprotective agents

Current position : Prof. Handa superannuated from his post in 2000 and is currently working as consultant Herbal Drug Research, Ranbaxy Research Laboratory, Gurgaon. He has also been honoured with IDMA - APA Eminent Pharmaceutical Analyst Award - 2002 and Dr. K.M. Parikh Award - 2003

Year of Award 1998

Chief Guest : Prof. Harald Zur Hansen, Prof. Dr. Med. Dr. H.C. Mult, Vorsitzender des Stiftungsvorstandes, Deutsches Krebsforschungszentrum, Heidelberg, Germany

Basic Medical Sciences

Prof. M.R.S. Rao
Professor & Chairman,
Department of Biochemistry,
Indian Institute of Science,
Bangalore
Area of research : Chromosome dynamics during male germ cell differentiation in mammals

Prof. Kasturi Datta
Professor of Biochemistry,
School of Environmental Sciences,
Jawaharlal Nehru University,
New Delhi

Area of research : Cellular signalling in response to cell surface receptor and matrix interaction

Current position : Prof. Dutta's is currently working on the same post. She also holds the post of Adjunct Professor Special Centre for Molecular Medicine, Jawaharlal Nehru University, New Delhi. She has also been honoured with Chemito Award for Life Science - 2000, Senior Women Bioscientist Award - 2001 and also awarded fellowship of the Third World Academy of Sciences, Italy.

Applied Medical Sciences

Dr. Amit Ghosh
Director,
Institute of Microbial Technology,
Chandigarh

Area of research : Genetically engineered oral recombinant vaccine for cholera and cholera epidemiology

Clinical Research

Prof. N. Kochupillai
Professor & Head,
Department of Endocrinology & Metabolism,
All India Institute of Medical Sciences,
New Delhi

Area of research : Endocrine and Metabolic disorders in India

Current position : Prof. Kochupillai retired from AIIMS in 2002. He is currently working as Chairman, Endocrine and Diabetes Services, Metro Group Hospitals, Noida, Delhi. He has also been honoured with Indian Science congress Association Award, Padma Shri Award and B.C. Roy National Award.

Prof. J.N. Pande
Professor & Head,
Department of Medicine,
All India Institute of Medical Sciences,
New Delhi

Area of research : Pathophysiology of lung diseases

Year of Award 1999

Chief Guest : Dr. Steven M. Haffner, Professor, Department of Medicine, University of Texas Health Science Centre at San Antonio, USA.

Basic Medical Sciences

Dr. John Kuriyan
Patric E and Beatrice M. Haggerty Professor,
Laboratories of Molecular Biophysics,
The Rockfeller University,
New York

Area of research :DNA replication and cellular signalling in eukaryotes

Current position : Dr. Kuriyan is currently the Chancellor's Professor of Biochemistry and Molecular Biology and Chemistry, University of California.

Applied Medical Sciences

Dr. Anil K. Tyagi
Professor of Biochemistry,
University of Delhi South Campus,
New Delhi

Area of research : Molecular genetics and gene expression in mycobacteria

Clinical Research

Prof. S.S. Agarwal
Director,
Advanced Centre for Treatment,
Research & Education,
Tata Memorial Centre,
Mumbai

Area of research : Medical genetics, particularly the establishment of genetic etiology of Handigodu syndrome

Dr. I.C. Verma
Senior Consultant & Head,
Department of Genetic Medicine,
Sir, Ganga Ram Hospital,
New Delhi
Area of research : Gene mutations and community control of beta thalassemia

Pharmaceutical Sciences

Dr. Mansukh C. Wani
Principal Scientist,
Research Triangle Institute,
North Carolina,
USA

Area of research : Plant based, clinically used anticancer agents, Taxol and Camptothecin

Year of Award 2000

Chief Guest : Prof. John Hansen, Fred Hutchinson Cancer Research Centre, Seattle

Medical Sciences - Basic Research

Dr. Ch. Mohan Rao
Scientist,
Centre for Cellular & Molecular Biology,
Hyderabad

Area of research : Protein folding, molecular chaperones, heat shock proteins and their role in health and disease

Current position : Dr. Rao is continuing on the same post.

Prof. Dipankar Chaterji
Professor,
Department of Molecular Biophysics Unit,
Indian Institute of Science,
Bangalore

Area of research : Regulation of gene expression in prokaryotes

Current position : Prof. Chaterji is continuing on the same post and is also the Chairman Molecular Biology and Genetics Unit, Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore. He has also been honoured with S.S. Bhatnagar Award, P.S. Sharma Memorial Award.

Medical Sciences - Medical Research

Dr. Partha P. Majumder
Professor & Head,
Anthropology & Human Genetics Unit,
Indian Statistical Institute,
Kolkata

Area of research : Development of new paradigms and methods for deciphering genetic architectures of common diseases and their precursor states

Current position : Dr. Majumder is continuing on the same post. He has also been honoured with G.D. Birla Award - 2002 and Shri Om Prakash Bhasin Award in Biotechnology - 2001.

Clinical Research

Dr. S.K. Bhattacharya,
Director,
National Institute of Cholera and
Enteric Diseases,
Kolkata.

Area of research : Diarrhoeal diseases, including elucidation of the clinical profile of Vibrio cholerae O139 and designation of the disease as cholera

Current position : Dr. Bhattacharya is continuing on the same post. He is also the Director, Rejendra Memorial Research Institute of Medical Sciences and Officer incharge ICMR, Virus Unit, Kolkata.

Pharmaceutical Sciences

Dr. J.S. Yadav,
Senior Deputy Director,
Indian Institute of Chemical Technology,
Hyderabad.

Area of research : Synthesis of complex bioactivities

Prof. Gautam R. Desiraju,
Dean,
School of Chemistry,
University of Hyderabad.

Area of research : Crystal engineering

Year of Award 2001

Chief Guest : Prof. Sir Ravinder N. Maini, Director, Kennedy Institute of Rheumatology Imperial College School of Medicine, London

Medical Sciences - Basic Research

Dr. Kanury V.S. Rao,
Associate Scientist and Head,
Immunology Group,
International Centre for
Genetic Engineering & Biotechnoloy, New Delhi.

Area of research : Regulation of Immune system in response to foreign antigens

Current position : Dr. Kanury is at present working as Senior Scientist & Head Immunology Group at the International Centre for Genetic Engineering & Biotechnology, New Delhi.

Medical Sciences - Medical Research

Prof. Samir K. Brahmachari,
Head,
Functional Genomic Unit & Director,
Centre for Biochemical Technology, New Delhi.

Area of research : Biological role of simple repetitive DNA sequences in the genome and their implication in various genetic disorders

Current position : Prof. Brahmachari is currently working as Director, Institute of Genomics & Integrative Biology Council of Scientific & Industrial Research, New Delhi. He has also been honoured with Goyal Prize of Life Sciences, B.K. Bachhawat Oration Lecture Award and C.R. Krishnamurthy Oration Award.

Dr. G.C. Mishra,
Director,
National Centre for Cell Sciences,
Pune.

Area of research : Discovery of three novel molecules, which provide help to the immune system to fight deadly diseases like TB and Kala - azar

Current position : Dr. Mishra is continuing on the same post. He has also been honoured with "Padmashree Award - 2003.

Clinical Research

Dr. Shyam Sundar,
Professor & Head,
Department of Medicine,
Institute of Medical Sciences,
Banaras Hindu University,
Varanasi.

Area of research : Efficacy of oral miltefosine in the treatment of kala-azar

Prof. Sudhir Gupta
Vice Chairman,
Department of Medicine,
University of California Irvine,
California

Area of research : T lymphocyte biology in human aging

Current poition : Dr. Gupta is currently working as Professor of Medicine, Pathology , Microbiology and Molecular Genetics, Chief Basic and Clinical Immunology, Director Allergy and

Immunology Training Programme College of Medicine and as Associate Director, Postdoctoral Training Programme, Centre for Immunology, University of California. He has also been honoured with "Most Distinguished Researcher and Teacher Award' & "Distinguished Scientist Award' by the American Association of Physicians of Indian Origin and the Federation of American Indian Association respectively. The university of California has also bestowed a chair in his name.

Pharmaceutical Sciences

Prof. Virander S. Chauhan,
Director, International
Centre for Genetic Engineering & Biotechnology,
New Delhi.

Area of research : Mechanism of action of fast acting and life saving antimalarial drug, Artemisinin

Dr. Anil Kumar Saxena,
Scientist,
Medicinal Chemistry Division,
Central Drug Research Institute,
Lucknow.

Area of research : Computer aided drug design and syntheses of new chemical entities for central nervous system and cardiovascular system disorders.

Year of Award 2002

Dr. Dinakar M. Salunke
Scientist, National Institute of Immunology
New Delhi

Area of research : Molecular basis of functional mimicry. Dr. Salunke has analyzed several chemically dissimilar but functionally equivalent molecular structures and established structural basis and immunological implications of molecular mimicry.

Medical Research

Dr. Subroto Chatterjee,
Professor and Director Atherosclerosis and Vascular Biology Program,
Johns Hopkins University,
Baltimore USA and in Singapore

Area of research : Discovery of a novel lipid second messenger pathway leading to cell proliferation. Dr. Chatterjee has also discovered several novel small molecular weight molecules that can regulate cell proliferation in vitro and in vivo in experimental animal models.

Clinical Research

Dr. Chandreshwar Prasad Thakur
Emeritus Professor of Medicine,
Patna Medical College,
Patna

Area of research : Drug response and for understanding the phenomena of unresponsiveness. He has worked on clinical chemotherapeutic, immunological and pharmacological aspect of unresponsiveness in kala-azar patients.

Pharmaceutical Sciences

The award has been shared by two scientists :

Prof. V. Nagaraja,
Professor, Department of Microbiology & Cell Biology,
Indian Institute of Science, Bangalore

Area of research : Providing insights into structure and activity of DNA topoisomerases from mycobacteria. These studies have formed the basis to exploit the enzymes as targets for addressing important basic questions on molecular mechanisms of DNA gyrase and topoisomerase 1, and providing key leads for the design of potential new antimycobacterials.

Dr. Ramesh Panchagnula,
Professor,
Department of Pharmaceutics,
National Institute of Pharmaceutical
Education and Research (NIPER), Punjab,

Area of research : Molecular basis of drug delivery and developing technologies for delivery of various classes of drugs. In order to reduce the toxiity profile of drugs, which exhibit complex pharmacokinetics, "*retro-pharmacokinetics*" concept has been introduced in the development of CR formulations and validated in human studies.

Year of Award 2003

Medical Sciences - Basic Research

Dr. Chaitan Khosla
Professor of Chemistry, Chemical
Engineering and Biochemistry,
Stanford University
Stanford, USA.

Area of research : Understanding and exploiting the synthetic capacity of polyketide synthases which has revolutionized the field of natural product chemistry and drug discovery. Polyketide synthases are responsible for the biosynthesis of numerous medicinally important antibiotics and other pharmacologically active agents.

Medical Research

The award has been shared by two scientists :

Dr. V M Katoch,
Director,
Central JALMA Institute for Leprosy and
Other Mycobacterial Diseases (ICMR),
Agra

Area of research : Early diagnosis, monitoring of treatment and epidemiology of mycobacterial diseases focusing on both Mycobacterium leprae as well as Mycobacterium tuberculosis. He has contributed significantly to the understanding of molecular biology of mycobacteria, metabolic pathways of M.leprae, development of ATP bioluminescence based viability and drug screening assays and molecular mechanisms of drug resistance in tuberculosis.

Dr. Chella David
Alice Sheets Marriott Professor,
Professor of Immunology
Mayo Medical School, Rochester
Minnesota, USA

Area of research : Discovery of the Immune Response Gene Products (Ia antigens), and demonstrating their role in

Immunity. The Ia Antigens (HLA class II genes) are the backbone of the immune system, playing a critical role in determining resistance versus susceptibility to diseases. Dr. David pioneered the production of transgenic mice expressing human HLA genes in the absence of endogenous mouse genes.

Clinical Research

Dr. Mammen Chandy,
Professor & Head, Department of Haematology,
Christian Medical College
Vellore-632 004.

Area of research : Bone Marrow Transplantation in India. He has developed a state of the art bone marrow transplant program with results that are comparable to those achieved in the West. His group has completed 150 transplants for thalassemia and studied different conditioning regimens to prepare patients for transplant.

Pharmaceutical Sciences

The award has been shared by two scientists :

Dr. Girish Sahni
Scientist F,
Institute of Microbial Technology,
Sector 39-A, Chandigarh.

Area of research : Development of life-saving clot-buster drugs used to treat cardiac diseases in this country. These thrombolytic drugs are natural and recombinant streptokinases as well as novel, r-DNA based, protein- engineered forms of streptokinase that display a remarkably high clot-specificity in their mode of action and show a remarkable decrease in the unwanted non-specific blood proteolysis often encountered with all major clot-buster drugs currently in use.

Dr. Bansi Lal
Quest Institute of Life Sciences
Nicholas Piramal India Ltd.
1A, 1B & 1C - Nirlon Complex
Off. Western Express Highway,
Near NSE Complex
Goregaon (East),
Mumbai - 400 063.

Area of research : New Drug Discovery Research. He has discovered the most powerful compound known so far as inhibitor of cGMP-inhibited phosphodiesterase and platelet aggregator, (Trequinsin), with potent antihypertensive properties. Buquiterine as a powerful bronchospasmolytic and antiallergic agent has come from his group. Two drugs in the cancer area with novel mode of action as cyclin dependent kinase inhibitors have also come from his laboratory.

Year of Award 2004

Medical Sciences - Basic Research

The Award has been shared by two scientists**:**

Dr. Bharat B. Aggarwal,
Ransom Horne, Jr.,
Distinguished Professor of
Cancer Research Professor of Cancer Medicine

(Biochemistry) and
Chief, Cytokine Research Section,
Department of Experimental Therapeutics,
The University of Texas M. D. Anderson Cancer Center,
Houston, TX 77030

Prof. Bharat Aggarwal has been selected for the award in the field of Basic Research in Medical Sciences for his contributions in advancing the field of cytokines, inflammation and its role in prevention and therapy of cancer and other inflammatory diseases. His group was the first to isolate tumor necrosis factor (TNF)-alfa and TNF-beta in 1984. Although initially discovered as an antitumor agent, it has now been shown to link inflammation with tumorigenesis. Dr. Aggarwal's group has also demonstrated that certain dietary agents welldescribed in Ayurveda, could suppress inflammation through the downregulation TNF pathway, thus leading to prevention and therapy of cancer. TNF blockers have provided a novel strategy to treat wide variety of inflammatory diseases. Thus, Professor Aggarwal's research has set the stage to explore the usefulness of dietary agents to treat various diseases

Dr. Amitabha Mukhopadhyay,
Staff Scientist V, Cell Biology Lab,
National Institute of Immunology,
Aruna Asaf Ali Marg, New Delhi

Dr. Amitabha Mukhopadhyay has been selected for the award in the field of Medical Sciences- Basic Research for his outstanding contributions to biomedical research on the fundamental issues pertaining to host-pathogen interactions that provided conceptual leads towards the identification of new chemotherapeutic target. His work addresses the basic mechanism by which intracellular pathogens frustrate the host trafficking systems to survive in phagocytes. Dr. Mukhopadhyay has also conceptualized that blocking of essential nutrient uptake by a pathogen could be a potentially target for the arrest of the growth of the parasites. His discovery of a new receptor in *Leishmania* which mediates the internalization and subsequent degradation of hemoglobin in the lysosomes to generate intracellular heme, required by the parasites for growth, is significant not only as a notable contribution to biology of this group of intracellular parasites but also as a potential new target against these parasites of paramount public health importance in the developing countries. Thus, Dr. Mukhopadhyay's research has been an excellent amalgamation of both basic research and exploitation of the findings in exploring the identification of novel target for potential therapeutic applications.

Medical Sciences - Medical Research

Dr. Mohan K. Raizada,
Professor,
Department of Physiology & Functional Genomics,
College of Medicine, University of Florida.

Prof. Raizada has been selected for the award in the field of Medical Sciences Medical Research for his contributions in advancing the field of gene therapy for hypertension and cardiovascular disease. His studies have provided the "proof of principle" that systemic gene transfer targeting the members of the renin-angiotensin system is a viable therapeutic strategy for a long-term control and possibly cure of hypertension and

related cardiovascular pathophysiologies. For example, Dr. Raizada's investigation has established that a single systemic administration of viral vector containing angiotensin type 1 receptor antisense prevents the development of hypertension for life in many animal models of hypertension. In addition, he has pioneered the use of lenti-viral vector to target cardiovascular-relevant tissues for gene transfer in adult animals. Thus, professor Raizada's research has set the stage to explore the usefulness of gene therapy for human hypertension.

Medical Sciences - Clinical Research

The Award has been shared by two scientists**:**

Dr. (Mrs.) Nita Bhandari,
Joint Director,
Society for Applied Studies,
384, Chirag Delhi, New Delhi-110017

Dr. (Mrs.)Nita Bhandari has been selected for the award in the field of Medical Sciences - Clinical Research for her outstanding work in infant nutrition, particularly the demonstration of severe health consequences of mild to moderate zinc deficiency in humans including increase in severity of lower respiratory tract and enteric infections and reversal of this phenomenon by optimizing daily intake of zinc. She provided the evidence that endorsed the decision to extend the duration of exclusive breast feeding from 4 months until recently, to 6 months by demonstrating significant health benefits of this policy. Her work has had major impact on child health policies and programmes related to promotion of infant and child nutrition.

Dr. Vinod Kochupillai,
Chief Institute Rotary Cancer Hospital & Professor & Head,
Department of Medical Oncology,
All India Institute of Medical Sciences,
Ansari Nagar, New Delhi-110029

Prof. Vinod Kochupillai has been selected for the award in the field of Medical Sciences - Clinical Research for her pioneering studies which are cost effective and relevant for Indian patients. Her work demonstrating liberation of cytokines from fetal liver is noteworthy. Stem cell factor, IL-6 and FLT-3 have been identified in fetal liver conditioned medium; these have the potential to stimulate hematopoiesis in adult bone marrow. Forty percent of patients suffering from Aplastic anemia benefited from fetal liver cell infusion. In vitro studies demonstrated colony formation when fetal liver conditioned medium was added to normal bone marrow or aplastic marrow. Her studies showed that addition of antioxidants in high dosages enhance the apoptotic effects of chemotherapy in non small cell lung cancer. Her studies on ancient practices such as Pranayam, yoga, meditation and sudarshan kriya (rhythmic breathing process) demonstrated increase in natural killer cells and antioxidant defence within a short period of 5-6 months. Heart rate variability improved within 6 days. These processes also achieved tobacco cessation in large number of practitioners

Pharmaceutical Sciences

The Award has been shared by two scientists**:**

Dr. B. Gopalan
Chief Scientific Officer
Matrix Laboratories Limited
Secunderabad

Dr.B.Gopalan, has been selected for the award in the field of Pharmaceutical Sciences for his contribution to the Design and Development of a series of novel,orally active small molecule NCEs in the therapeutic areas of Diabetes mellitus and PDE4 inhibitors for Asthma & COPD. In the area of Diabetes,one of the product candidates,BTS-67582{BTI-2927,Boots pharmaceuticals (India) Limited},an ATP sensitive Potassium channel blocker via a different binding site to that of Glibenclamide,had reached Phase-2 trials in USA,UK and France. His conceptual originality in the Design of drugs is further exemplified in the design of a series of novel,oral &long acting PDE4 inhibitors through a simple pharmacophoric model of Rolipram. The selected candidate,Oglemilast{GRC-3886,Glenmark Pharmaceuticals Limited}has successfully completed Phase-1 trials&has received US FDA approval for Phase- 2 trials. **Oglemilast has been out-licensed to Forest Laboratories of USA for US$190 million and to Teijin of Japan for US$53million.**

Dr. Asit K. Chakraborti,
Professor and Head,
Department of Medicinal Chemistry,
National Institute of Pharmaceutical Education and Research (NIPER), Punjab

Prof. Asit Kumar Chakraborti has been selected in the field of Pharmaceutical Sciences for his outstanding contributions in medicinal/organic chemistry. His research interests are to: transform complex chemical reactions/ processes to easily understandable and executable methods, introduce new concepts and bridge the knowledge in biology and chemistry to design better therapeutic agents. He has introduced the concepts of **Demand-Based** and **Single Electron Transfer** *in situ* thiolate anion generation, **Nucleophile-Electrophile Dual Activation** and **Atom Economical Methyl Transfer** and applied them for synthesis of NCEs against novel targets in Common Obstructive Pulmonary, Inflammatory and Parasitic diseases. He has developed several methodologies for solid and solution phase combinatorial organic synthesis. Various eco-friendly catalysts/processes developed by him fulfill the "Triple Bottom-line Philosophy' of Green Chemistry and are useful for synthesis of cardiovascular drugs and their intermediates. Some of his discoveries are being followed in other laboratories in India and abroad.

RANBAXY RESEARCH AWARD 2005

Medical Sciences - Basic Research

Dr. Sankar Ghosh
Professor of Immunobiology and Molecular Biophysics & Biochemistry,
Yale University School of Medicine,
New Haven, CT 06520, USA,

Dr. Ghosh has been selected for the award in the field of Medical Sciences, Basic Research for his ground-breaking

discoveries in the fields of cell signaling and immunology. His career began as a postdoctoral fellow with Dr. David Baltimore, when he first demonstrated the importance of phosphorylation in the NF-kB signaling pathway, and cloned the first members of this important transcription factor family. Subsequently, from his own laboratory he has reported on different aspects of the NF-kB pathway, and many of his findings have clear clinical implications. He was the first to demonstrate that widely used NSAID's exert their anti-inflammatory effects by inhibiting NF-kB, and that NF-kB plays a key role in regulating apoptosis, which helps explain the role of NF-kB in cancer. His recent discovery of the NBD-peptide, a specific inhibitor of NF-kB activation, with efficacy in multiple animal models of inflammatory disease, has opened up the possibility of developing novel therapeutics for inflammation and cancer in the near future.

Medical Sciences -Medical Research

Dr. Nirbhay Kumar, PhD
Professor
Malaria Research Institute
Molecular Microbiology and Immunology
Johns Hopkins University
Bloomberg School of Pubic Health
615 N. Wolfe Street
Baltimore, MD, USA
Tel: 410-955-7177
E-mail: nkumar@jhsph.edu

Professor Nirbhay Kumar has been selected for the award in the field of Medical Sciences - Medical Research for his contributions to the field of malaria vaccines. His group has developed several DNA vaccine constructs aimed at reducing malaria (Plasmodium falciparum and Plasmodium vivax) transmission. Such vaccines will not only reduce or eliminate malaria transmission but also play a major role in reducing spread of vaccine and drug resistant parasites. Dr. Kumar's group is now attempting to further improve their immonogenicity by CpG modification of the plasmid backbone, various vaccine formulations and alternate mode of vaccine delivery for evaluation in human clinical trials. Dr. Kumar's group has also employed targeted gene disruption approach to investigate molecular mechanisms involved in the differentiation and development of parasites stages responsible for malaria transmission. His colleagues are beginning to develop high throughput functional genomics approaches to exploit the gametocyte proteome database for identification of novel targets for transmission reduction and investigate interactions between parasite and the mosquito vector. Molecular characterization of recombination machinery in the parasite and investigation of DNA damage response pathway represents other new areas of investigations in the Kumar lab.

Medical Sciences -Medical Research

Dr. Bhudev C. Das
Director
Institute of Cytology and Preventive Oncology (ICMR) &
Chief, Division of Molecular Oncology,
I-7, Sector 39, NOID1A, UP. (INDIA)

Dr. Bhudev Das has been selected for the Ranbaxy Award in the field of Medical Sciences - Medical Research for his original contributions in applied cancer research with special reference to early detection and control of cervical cancer, the major cancer of women in India and other developing countries. Dr. Das has pioneered the research on HPV in India and established that HPV 16, a causative agent for cervical cancer, is exclusively high in the country. His discovery that precancerous lesions with persistent infection of HPV 16/18 have a high rate of progression to cancer has facilitated early identification of high risk population for cervical cancer. He has developed several simple, cost-effective, and novel molecular diagnostic tests including a non-invasive urine-based test for detection of HPV and cancer-associated gene mutations as well as a new method for dry collection, transport and storage of cytological specimens as "Paper Smear". A simple single-tube boiling method of DNA elution and PCR developed by him has facilitated an easy mass-screening of women for early detection of HPV infection and cervical cancer. Most importantly, molecular dissection of transcription regulatory pathways during HPV-induced cervical carcinogenesis and identification of novel chemotherapeutic targets have led to discovery of several novel anti-HPV molecules that suppress HPV oncogene expression. One such molecule, curcumin, has been accepted by the DBT for national multicentric clinical trials. In addition, Dr. Das and his group is in the process of developing a second generation chimeric HPV DNA vaccine for the control of cancer of the cervix. Thus Dr. Das's research has made a major impact towards early diagnosis and control of HPV infection leading to better management and prevention of cervical cancer.

Medical Sciences - Clinical Research

Dr. Inder S. Anand
Inder Anand, MD, FRCP, D Phil (Oxon.)
Professor of Medicine,
University of Minnesota Medical School,
Director, Heart Failure Program,
VA Medical Center
Minneapolis MN 55417

Prof. Inder Anand has been selected for the award in the field of Clinical Research in Medical Sciences for his significant contributions in advancing the field of High Altitude Medicine and Biology based on the research he carried out while working at the Postgraduate Institute of Medical Education and Research, Chandigarh. He was instrumental in the discovery of two new syndromes in people living at high altitude: Infantile Sub-acute Mountain Sickness in Tibet, and Sub-acute Adult Mountain Sickness in Indian soldiers posted at the Siachen Glacier. Strict enforcement of the guidelines for the prevention of the syndrome in the soldiers has prevented considerable morbidity in the Indian Armed Forces. In addition, during the course of his work with the Indian armed forces stationed in Leh, he pioneered the use of inhaled nitric oxide in the management of high altitude pulmonary edema. His earlier work on the concept of adaptation in Man and Animals indigenous to high altitude was equally important. He was able to demonstrate that animals such as the yak and its crossbreeds are adapted and do not respond to high altitude

hypoxia with pulmonary vasoconstrictive by loosing vascular smooth muscle in the pulmonary arterioles. This loss of vascular smooth muscle is in fact inherited as an autosomal trait. Further, his research was able to show that the people native to Ladhak are similarly adapted, in that they too lack vascular smooth muscle in the pulmonary arterioles.

Medical Sciences - Clinical Research

Dr SK Sharma
Chief, Division of Pulmonary & Critical Care Medicine
Professor & Head, Department of Medicine
All India Institute of Medical Sciences,
New Delhi- 110 029, India

Professor SK Sharma has been selected for the award in the field of Clinical Research in Medical Sciences for his outstanding research contributions over the last three decades in the fields of tuberculosis, HIV and sarcoidosis. He has contributed towards understanding of pathogenesis of TB, HLA linked susceptibility to the development of TB, early recognition of acute lung injury in TB, clinical and immunogenetic risk factors for the development of hepatotoxicity during antituberculosis treatment, reintroduction of anti-TB drugs following recovery from drug-induced hepaptotoxicity, utility of ADA and IFN-gamma in the diagnosis of TB pleural effusion and ascites and molecular genetic analysis of MDR-TB strains. He has also done systematic studies of drug interactions between antiretroviral drugs and anti-TB drugs during treatment of HIV-TB co-infection. Additionally, he has made significant contribution in the field of interstitial lung disease especially sarcoidosis - a disease which was hitherto not that well recognized in India.

Pharmaceutical Sciences

Dr. Ahmed Kamal
Scientist F (Deputy Director)
Biotransformation Laboratory
Division of Organic Chemistry I
Indian Institute of Chemical Technology
Hyderabad 500 007

Dr. Ahmed Kamal has been selected for the award in the field of Pharmaceutical Sciences for his innovative contributions in designing the new molecules based on the receptor-fit approach, particularly, for DNA minor groove binding and DNA topoisomerase II inhibition involving multi-disciplinary facets of pharmaceutical chemistry. Some of the molecules designed and synthesized on this basis are undergoing preclinical studies for treating cancer. Dr. Kamal's group has also demonstrated the development of several new synthetic and enzymatic methodologies for the preparation of chiral pharmaceutical intermediates. He has shown insight and skill in developing combinatorial synthetic strategies towards the preparation of library of compounds based on a variety of heterocyclic scaffolds. Thus, Dr. Kamal's research has set the stage to explore the lead molecules for treating genetic based diseases including cancers.

RANBAXY RESEARCH AWARD 2006

Medical Sciences - Basic Research

Professor Ashok R. Venkitaraman
The Ursula Zoellner Professor of Cancer Research,
University of Cambridge; and Director,
The Medical Research Council Cancer Cell Unit &
The Cambridge Molecular Therapeutics Programme
Hutchison/MRC Research Centre
Cambridge

Ashok Venkitaraman's award is based on his contributions to the molecular basis of antigen recognition by the humoral immune system, and for his work to elucidate the role played by the instability of chromosome structure and number in cancer predisposition, pathogenesis, and treatment.

Between 1991-98, he defined the molecular components of the B lymphocyte's surface receptor for antigen, and described how extracellular signalling through a cytokine receptor can modify the diversity of the repertoire for humoral immune recognition, by regulating the rearrangement of immunoglobulin genes.

Since 1998, Ashok's work has been instrumental in elucidating the biological functions of BRCA2 (a tumor suppressor mutated in families with a high predisposition to epithelial malignancies), in identifying the steps that lead to cancer in humans who inherit mutant BRCA2, and in translating this molecular information into new avenues for treatment.

Dr. Amitabha Chattopadhyay
Deputy Director
Centre for Cellular and Molecular Biology
Uppal Road, Hyderabad 500 007
India

Dr. Amitabha Chattopadhyay has been selected for the award in Basic Research in Medical Sciences for his pioneering contribution on the role of membrane lipids in the organization and function of G-protein coupled receptors, and its implications in health and disease. His group was the first to demonstrate the vital requirement of membrane cholesterol on the organization and function of the serotonin$_{1A}$ (5-HT$_{1A}$) receptor by making intelligent use of biochemical, biophysical and cell biological approaches. His recent work has shown that the function of this important neurotransmitter receptor (the serotonin$_{1A}$ receptor) is impaired in diseases such as the Smith-Lemli-Opitz Syndrome (SLOS) in which cholesterol biosynthesis is defective. Interestingly, Dr. Chattopadhyay's group was the first to show that host membrane cholesterol plays an important role in the process of infection caused by the parasite *Leishmania donovani* which results in leishmaniasis.

Medical Sciences - Medical Research

Gautam Chaudhuri
Professor of Molecular and Medical Pharmacology and
Professor and Executive Chair
Dept. of Obstetrics and Gynecology,
David Geffen School of Medicine at UCLA,

10833 Le Conte Avenue,
Los Angeles, CA 90095-1740

Prof. Gautam Chaudhuri has been selected for the award in the field of Medical Research in Medical Sciences for his critical contributions in the pharmacological identification of Endothelium Derived Relaxing Factor as Nitric Oxide. Dr. Lois J. Ignarro confirmed it chemically and this led to a joint publication between the two groups. His group described the role of Nitric Oxide in hypertension, its role in modulating blood flow in the fetal-placental circulation and as to how some of the actions of estrogens are modulated by increasing the synthesis of Nitric Oxide. Earlier, he had also demonstrated the role of prostaglandins in the functioning of the intra-uterine contraceptive device and which may explain many of its effects and that some of the side effects of the intra-uterine contraceptive can be reduced by the administration of non-steroidal anti-inflammatory drugs which act by inhibiting prostaglandin synthesis, leading to its greater acceptance.

Medical Sciences - Clinical Research

Dr. Subrat K. Acharya
Professor & Head
Department of Gastroenterology & HNU
All India Institute of Medical Sciences
New Delhi-110029, India

Prof. Subrat K. Acharya has been selected for the award in the field of Clinical Research in Medical Sciences for his contributions in advancing the field of identifying the etiology, natural course, prognostic markers and causes of death in patients with liver failure in India. Subsequent therapeutic approach based on his finding has improved survival in such patients and International Association for Study of Liver, recommended new nomenclature and definitions of various liver failures. His work on seroepidemiology of hepatitis A virus revealed that by 5 yrs. 80% Indian children are protected for HAV and therefore HAV mass vaccination is not cost effective. Their group developed indigenous HCV RNA quantitation method, which helped to treat CH-C patients. He also identified hepatitis E virus as major super infecting agent causing high mortality among compensated patients with chronic liver diseases. His group detected occult HBV as a cause of ALF and chronic liver diseases.

Pharmaceutical Sciences

Dr. Rakesh Kumar
John G. and Marie Stella Kenedy Memorial Foundation Chair
Professor of Molecular and Cellular Oncology
Professor of Biochemistry and Molecular Biology
The University of Texas Health Science Center
The University of Texas M.D. Anderson Cancer Center
Houston, Texas 77030, USA

Prof. Rakesh Kumar has been selected for the award in Pharmaceutical Sciences for his contributions in advancing the field of phenotypic signaling, defining how and why cancer cells move, and identifying novel therapeutic targets. His laboratory was the first to show the overexpression of PAK1 kinase in human cancer, demonstrated causative role in

mouse breast cancer, discovered physiologic targets of PAK1, and established new functions of PAK1 in cancer cells. He discovered nuclear localization and functions of PAK1 which was previously thought to be a cytoplasmic kinase. He made a conceptual advancement to the notion that signaling-dependent phosphorylation is sufficient to modulate the transcription outcome from corepressor complexes, and that transcription, splicing and translation can be regulated by a single coregulator in a PAK1-signaling-dependent manner. Thus, Kumar's discoveries have put PAK on the scientific map, opened new research directions in biomedical research, and identified PAK1 as a cancer therapeutic target.

RANBAXY RESEARCH AWARD 2007

Medical Sciences - Basic Research

Prof. Bhanu P. Jena, Ph.D., D.Sc., (dr. h.c. mult.)
George E. Palade University Professor,
Distinguished Professor; Department of Physiology,
Wayne State University School of Medicine
540 E. Canfield, 5245 Gordon Scott Hall
Detroit, MI 48201-1928, USA

Professor Dr. Bhanu P. Jena has been selected for the award in the field of Basic Research in Medical Sciences for his pioneering discovery of a new cellular structure -the **"porosome"**, the universal secretory machinery in cells, and for his elucidation of the general molecular mechanism underlying cell secretion and membrane fusion. Secretion is a fundamental cellular process as old as life, and occurs in all living organisms from the simple yeast, to cells in humans. Secretion is responsible for numerous physiological activities in living organisms, such as neurotransmission, and the release of hormones and digestive enzymes. Secretory defects in cells are responsible for a host of debilitating diseases, and therefore this field has been the subject of intense study for almost a century. Professor Jena's discoveries have resulted in a paradigm shift in our understanding of the secretory process in cells, profoundly impacting human health and medicine.

Prof. Namita Surolia
Professor
Molecular Biology and Genetics Unit
Jawaharlal Nehru Centre for Advanced Scientific Research
Jakkur, Bangalore-560064

Prof. Namita Surolia has been selected for the award in the field of Basic Research in Medical Sciences The uniqueness of her scientific achievements is the '**Discovery-driven**' innovative research and consistent performance over the last two decades. Her contributions towards understanding parasite biology are unparallel and outstanding, as she is the discoverer of protein, heme and fatty acid biosynthesis pathways in Plasmodium falciparum. These discoveries were made by her in the '**pre-genomic**' era, that too against the beliefs in the literature that the parasite lacks the ability to synthesize heme as well as fatty acids de novo. These discoveries have brought paradigm-shift in antimalarial drug development and both the pathways are now validated targets

for developing antimalarials.
Prof.Surolia also elucidated the mode of action of widely used antimalarial chloroquine (CQ) by demonstrating that the antimalarial exerts its effect by sequestering heme resulting into parasite death.

Medical Sciences - Medical Research

Prof. Sampath Parthasarathy
Ph.D., M.B.A., F.A.H.A.
Klassen Chair and Professor of Surgery
Professor of Internal Medicine and Professor of Human Nutrition,
The Ohio State University Medicial Center,
Columbus Ohio 43210,
U.S.A.

Prof. Sampath Parthasarathy has been selected for the award in the field of Medical Research in Medical Sciences for his contributions in advancing our knowledge in the field of Cardiovascular Sciences. He has been credited with the discovery of oxidized low density lipoprotein. The scheme of events that are involved in early atherosclerosis as outlined in his articles on the role of oxidized LDL on foam cell-fatty streak lesion formation and monocyte chemotaxis has led to the recognition of oxidation of LDL as a key step in the development of the atherosclerosis. His studies also led to the recognition of HDL as a major regulator of the oxidative modification process. His studies continue to have a major impact on a large population that now consumes antioxidants as a deterrent of cardiovascular diseases. His current research focus is on understanding the antioxidant paradox between experimental atherosclerotic disease and human atherosclerosis.

Dr. Ajit Varki
Distinguished Professor of Medicine and Cellular & Molecular
Medicine;
Co-Director, Glycobiology Research and Training Center
Co-Director, UCSD/Salk Center for Academic Research and,
Training in Anthropogeny (CARTA); and
Associate Dean for Physician-Scientist Training
Department of Cellular and Molecular Medicine,
9500 Gilman Drive, MC 0687
La Jolla, CA, 92093-0687,

Ajit Varki is a pioneer and leader in the fields of Glycobiology and Human Evolution. He has made seminal contributions towards understanding the chemistry, biochemistry, biology, evolution and biomedical relevance of Sialic Acids and Sialic Acid-recognizing proteins, and their diverse roles in processes such as immunity, infectious diseases and cancer metastasis. In recent years he has made many novel discoveries about the relationships of sialic acid biology to the genetic underpinnings of human evolution. He continues to play a prominent role in genomic and biological comparisons of humans and great apes, and the implications for evolution and disease susceptibility.

Medical Sciences - Clinical Research

Dr Lalit Kumar

Professor of Medical Oncology
Institute Rotary Cancer Hospital
All India Institute of Medical Sciences
New Delhi-110029, India

Dr Lalit Kumar has been selected for the award in the category of Clinical Research in Medical Sciences for his contributions in the field of Medical oncology and stem cell transplantation. Dr Kumar has not only established a cost effective and sustained BMT/Stem cell Transplantation Program but has also developed cryopreservation facilities required for freezing of stem cells prior to autologous stem cell transplantation. During the past 10 years his team has performed more than 300 stem cell transplants (both allogeneic and autologous) with results comparable to international standards. His series on auto-transplants for myeloma is the largest in the country. He is also involved in the collaborative research for newer applications of stem cells in the areas cardiac repairs, pediatric malformations and ocular disorders. His group was among the first ones to demonstrate use of chemotherapy in advanced cervical cancer- a common cancer among women in India.

Pharmaceutical Sciences

Dr. Anil Gulati
Professor and Associate Dean for Research
Midwestern University Chicago College of Pharmacy
555 31st Street
Downers Grove, IL 60515
USA

Dr. Anil Gulati has been selected for the award in the field of Pharmaceutical Sciences for his contributions in advancing the field of endothelin (ET). Prof. Gulati developed the concept of using a selective ETB receptor agonist to selectively increase anticancer drug delivery to the solid tumor while sparing healthy tissues. This concept of tumor drug delivery does not require any chemical modification of the drugs and can also be used for tumor imaging applications. Phase I, open label, ascending dose study of the ETB agonist in patients with recurrent or progressive carcinoma is in progress. He has also discovered that ET receptor antagonists can be useful for the treatment of tolerance to opiates, Alzheimer's disease, and in hypothermic neuroprotection. Professor Gulati's research has set the stage to explore novel uses of ET agonists and antagonists to treat various diseases.

Dr. Arabinda Chaudhuri
Scientist E-II and Project Leader
Division of Lipid Science and Technology
Indian Institute of Chemical Technology
Uppal Road, Hyderabad-500 607
INDIA

Dr. Arabinda Chaudhuri has been selected for the 2007 Ranbaxy Research Award in the field of Pharmaceutical Sciences for his contributions in advancing the area of lipid based transfection vectors. His research group for the first time has shown that even orientation of linker functionality can profoundly influence the gene delivery efficiencies of cationic transfection lipids. Series of in-depth structure-activity investigations from his group have convincingly demonstrated that the gene transfer efficacies of cationic amphiphiles can be

dramatically sensitive to their molecular architectures. Recently, Dr. Chaudhuri's group has succeeded in designing an a5ß1 integrin receptor selective RGDK-lipopeptide that can deliver genes to mouse tumor vasculatures and therefore holds promise for applications in antiangiogenic cancer therapy. Taken together, Dr. Chaudhuri's research has enriched the existing arsenal of efficient non-viral transfection vectors toward ensuring the clinical success of gene therapy.

RANBAXY RESEARCH AWARD 2008

Medical Sciences - Basic Research

Anindya Dutta, M.D., Ph.D.
Byrd Professor of Biochemistry & Molecular Genetics
Professor of Pathology,
Jordan Hall 1240, Box 800733
University of Virginia Health Sciences Center
Charlottesville, VA 22908

Dr. Anindya Dutta has been selected for Ranbaxy Research Award-2008 in the field of Medical Sciences-Basic Research. He has identified seven of the initiation factors involved in copying DNA and dissected the mechanisms by which they are regulated during cell division. He has identified several regulators and pathways that normally prevent cells from over-replicating their DNA and identified how these molecules are disrupted in cancers to lead to genomic instability. Every time a normal cell in our body divides to produce two daughter cells, it copies its chromosomal DNA (the software that regulates our cells) accurately and only once so as to bestow an equal complement of chromosomes to the two daughter cells. Cancer cells, however, have an unstable genome so that different portions of chromosomes are present in varying copy numbers in the cancer cells. It is this genomic instability that makes cancer a hard disease to treat because the cells rapidly change their repertoire of genes (their software) to resist any form of therapy.

Medical Sciences - Medical Research

Dr. Inder J. Chopra
Distinguished Professor of Medicine
Division of Endocrinology and Metabolism
David Geffen School of Medicine at UCLA,
900 Veteran Ave., Warren Hall rm. 24-130,
Los Angeles, California, 90095 U.S.A.

Professor, Inder Chopra has been selected for the award in the field of Medical Sciences - Medical Research for his contributions in advancing the field of thyroid research. He is internationally recognized for his work in developing and characterizing the metabolism of thyroid hormones, including the deiodination and sulfation pathways, the developmental and nonthyroid disease effects and therapeutic implications. He was the first or among the first to develop, characterize and apply to clinical practice radioimmunoassay methods for measurement of thyroid hormones. He was the first to develop

the immunoassay methods for measurement of 3,3',5' - triiodothyroinine (reverse T3) and to apply it to research and clinical practice. His direct immunoassay methods for measurement of thyroid hormones remain state of the art after more than 30 years. He has published over 285 papers, generally in the leading journals in his field. Professor Chopra is described as a master teacher and has trained many fellows, several of whom have advanced to become professors of medicine and leaders in the field of endocrinology.

Medical Sciences - Clinical Research

Dr. Narmada P. Gupta
Professor & Chairman
Department of Urology
All India Institute of Medical Sciences
Ansari Nagar, New Delhi - 110 029
narmadagupta@gmail.com

Prof. Narmada P Gupta has been selected for the award in the field of "Medical Sciences - Clinical Research" for his contribution in advancing the clinical research related to the management of various Urologic diseases like Carcinoma bladder, Urinary stone disease, Benign enlargement of Prostate, Stricture Urethra, Cancer Prostate and Genito-Urinary tuberculosis. The focus of his studies have been on early diagnosis of these diseases and evolving methodologies of their effective management and prevention of renal failure. In recent years, there have been significant advances in enchanced surgical skills and technologies in the field of Urology like Endoscopic surgery, Endo-urology, Laparoscopic surgery, holmium lasers, and robotic surgery. Dr. Gupta has mastered and evaluated these technologies in his research studies to make treatment cost effective in the Indian set up with minimal morbidity.

Dr Amod Gupta
Professor of Ophthalmology
Advanced Eye Centre
Post Graduate Institute of Medical Education and Research
Chandigarh-160012 India

Professor Amod Gupta has been selected in the field of Clinical Research in Medical Sciences for his contributions that have brought about a paradigm shift in the management of several blinding diseases. His work on the use of atorvastatin in the management of diabetic maculopathy is extensively cited in the contemporary literature and provided initial evidence for recommending statins in patients with diabetic retinopathy. Moreover, his work has prompted basic researchers to look at the molecular mechanisms in the pathophysiology of diabetic retinopathy. Previously he pioneered the use of molecular techniques to diagnose and characterize intraocular tuberculosis. He described a new disease entity, "Tubercular Serpiginouslike Choroiditis' a very common blinding disease in India and also recognized world over that can now be successfully managed. He discovered contaminated dextrose infusions in the rural settings as previously unknown and new risk factor for developing fungal endophthalmitis in otherwise healthy young individuals.

Pharmaceutical Sciences

Dr. G. V. Madhava Sharma
Scientist F (Deputy Director),
Head ,
Organic Chemistry Division III
Indian Institute of Chemical Technology,
Hyderabad 500 007, India
Email: esmvee@iict.res.in

Dr. G. V. Madhava Sharma has been selected for the award in the field of Pharmaceutical Sciences for his exceptional contributions in the field of New Drug Discovery using synthetic organic chemistry. His group has developed new routes for lead molecules, wherein, he used abundantly available, replanishable carbohydrates as chiral starting materials, besides process routes. Dr. Sharma's group has developed novel methodologies with a special thrust on "Green routes" (catalytic, solvent free and multicomponent coupling reactions) and synthesized New Chemical Entities as anti-asthma (PDE-4, ICAM-1 inhibitors), anti-HIV (NNRT inhibitors) and Proton Pump inhibitors. Overall, Dr. Sharma's contributions in the field of Synthetic Organic Chemistry has direct relavance to the Human Health Care.

Prof. Prasad V. Bharatam
Professor
Department of Medicinal Chemistry
National Institute of Pharmaceutical Education and Research
NIPER, Sector 67
SAS Nagar (Mohali) - 160 062
Punjab India

Prof. Prasad V. Bharatam has been selected for the award in the field of Pharmaceutical Sciences for his outstanding contributions in Pharmacoinformatics and Medicinal Chemistry. The research from his group is involved in innovatively amalgamating all the in silico methods -- chemoinformatics, bioinformatics, toxicoinformatics, computational metabolism studies, virtual screening and molecular modeling techniques -- to design new anti-diabetic and anti-malarial leads. Several new concepts related to "Additivity of molecular fields' and "Electrostatic potential analysis of drugs' have been recognized and their importance in designing new leads has been demonstrated. A novel electronic structure involving $+N(\leftarrow L_2)_2$ systems was first time identified in anti-diabetic and anti-malarial biguanide derivatives and was employed effectively in rationally designing new leads. His group is also carrying out synthesis of the computationally designed molecules for biochemical evaluation and thus they are involved in establishing proofs of concept emerging from pharmacoinformatic analysis.

RANBAXY RESEARCH AWARD 2009

Medical Sciences - Basic Research

Professor Sharad Kumar MSc,Ph.D.
Co-Director, Centre for Cancer Biology
National Health and Medical Research Council
(NHMRC) - Senior Principal Research Fellow
Head, Molecular Regulation Laboratory
Affiliate Professor of Medicine, University of Adelaide
Department of Haematology, SA Pathology
Frome Road, Adelaide, SA 5000
Australia

Professor Sharad Kumar has been selected for the award in the field of Basic Research in Medical Sciences for his seminal contributions to the understanding of programmed cell death and the regulation of protein function by ubiquitination. He discovered Nedd genes/proteins, which included Nedd2 (caspase-2), one of the first mammalian caspases; Nedd4, the prototypic member of a family of ubiquitin ligases; Nedd5, one of the first mammalian septins; Nedd8, a ubiquitin-like protein involved in a protein-modification system, now known as Neddylation; Nedd1, an essential centrosomal protein required for the nucleation of microtubules; and Nedd9, a protein implicated in cell spreading and tumour metastasis. His group discovered a significant part of the apoptotic machinery in a model organism and made key contributions to the fundamental understanding of developmental cell death, caspase function and cancer biology. The work from his laboratory on Nedd4 family of ubiquitin ligases and apoptosis has led to many seminal discoveries impacting on the understanding of human diseases.

Medical Sciences - Medical Research

Dr. Vijay K. Kuchroo, D.V.M., Ph.D.
Samuel L. Wasserstrom Professor of Neurology
Center for Neurologic Diseases
Harvard Medical School
77 Avenue Louis Pasteur
Boston MA 02115 (USA)

Professor, Inder Chopra has been selected for the award in the field of Medical Sciences - Medical Research for his contributions in advancing the field of thyroid research. He is internationally recognized for his work in developing and characterizing the metabolism of thyroid hormones, including the deiodination and sulfation pathways, the developmental and nonthyroid disease effects and therapeutic implications. He was the first or among the first to develop, characterize and apply to clinical practice radioimmunoassay methods for measurement of thyroid hormones. He was the first to develop the immunoassay methods for measurement of 3,3',5' - triiodothyroinine (reverse T3) and to apply it to research and clinical practice. His direct immunoassay methods for measurement of thyroid hormones remain state of the art after more than 30 years. He has published over 285 papers, generally in the leading journals in his field. Professor Chopra is described as a master teacher and has trained many fellows, several of whom have advanced to become professors

of medicine and leaders in the field of endocrinology.

Medical Sciences - Clinical Research

Dr. S. Chandrasekhar, FNASc
Scientist G
Organic Chemistry Division I
Indian Institute of Chemical Technology
Hyderabad - 500 007, India

Dr. Srivari Chandrasekhar has been selected for award in the field of Pharmaceutical Sciences based on his significant contributions in diverse areas of organic synthesis with relevance to medicinal chemistry especially in chiral chemistry and total synthesis of biologically active natural products (marine natural products with architectural complexity). The design of new molecular entities, hybrid natural products, peptides involving unusual amino acids as defined foldamers is well received globally. The development of PEG as novel solvent medium created a totally different platform for practitioners of Green chemistry. The collaborative projects in applied areas of pharmaceutical research for both process development and drug discovery have resulted in development of economically viable processes and also several lead compounds for further optimization. To his credit he has 190 publications and two patents with over 2900 citations. 24 students have already obtained their Ph.D. award under his able guidance and 29 students are currently pursuing their research work with Dr. S. Chandrasekhar towards the Ph. D. programme Dr. Srivari obtained his Bachelors, Masters and Ph. D. degree from Osmania University while the work for Ph. D. was carried out in IICT on total synthesis of Cyclosporin.

RANBAXY RESEARCH AWARD 2010

Medical Sciences - Basic Research

Professor Utpal S. Tatu
Department of Biochemistry
Indian Institute of Science
Bangalore 560012, India

Professor Utpal S. Tatu has been selected for the award in the field of Basic Research in Medical Sciences for his pioneering studies on chaperone biology of neglected disease causing protozoan parasites such as Giardia lamblia, Plasmodium falciparum and Trypanosoma evansi. His studies shed light on involvement of heat shock protein 90 in the acclimatization of these parasites in their mammalian hosts. In addition to understanding gene expression, localization, complexes and functions of heat shock protein 90 from these organisms his studies also highlight the potential of this chaperone to serve as a target for the development of novel drugs against giardiasis, malaria and trypanosomiasis. Prof. Tatu's study has introduced a new paradigm in the development of anti-infectives against human and animal diseases prevailing in the under developed and the developing nations.

Medical Sciences - Basic Research

Dr. Chandrima Shaha
JC Bose National Fellow
Deputy Director
National Institute of Immunology
Aruna Asaf Ali Marg
New Delhi 110067, India

Dr. Chandrima Shaha has been selected for the award in the field of Basic Research in Medical Sciences. Dr. Shaha's research has made major contributions towards the understanding of cell death pathways and cellular defense processes in unicellular and multicellular model systems. Her most important contribution to the field of cell death has been the demonstration of the ability of the protozoal parasites to execute death phenotypes similar to metazoans, which pinpoints the origin of death pathways to 2 billion years prior to the onset of multicellularity. This work has also indicated selection of the mitochondrial death pathway much before the metazoan origin. While the information generated a great interest in unicellular cell death in the scientific community, it has also introduced the concept of manipulating death pathways in medically important pathogens like kinetoplastid parasites as a means to control diseases caused by them, profoundly influencing the possibilities of disease intervention.

Medical Sciences - Medical Research

Dr. Utpal Bhadra
Senior Principal Scientist
Wellcome Trust Fellow
HFSP Young Investigator
Aruna Asaf Ali Marg Adjunct Faculty, ICRESAT
Centre for Cellular and Molecular Biology
Uppal Road, Hyderabad 500007, India

Dr. Utpal Bhadra has been selected for Ranbaxy Research Award in the field of Medical Research in Medical Sciences for unraveling the new role of RNA interference in heterochromatin formation in higher eukaryotes especially in Drosophila which is indispensible for chromosome segregation during cell proliferation and cell cycle control. He elucidated how RNAi controls centric heterochromatin and higher order chromatin packaging. The loss of RNAi factors reduces the accumulation of heterochromatin components including proteins HP1, HP2 and histone H3 lysine 9 methyltransferase, therefore functional defect in heterochromatin leads to a major clue in cell cycle related diseases. The discovery of Dr Bhadra has resulted in a paradigm shipped to our conventional understanding in rapid cell division, which profoundly impact on different cell regulated mechanisms related to human health and medicine. Dr Bhadra has been recognized for his pioneer contributions in gene-silencing and RNAi, which have applications in understanding the genetic make-up of humans, animals and plants.

Pharmaceutical Sciences

Dr. Gangadhar. J. Sanjayan
Senior Scientist
Division of Organic Chemistry
National Chemical Laboratory (CSIR)
Pune 411008, India

Dr. Gangadhar. J. Sanjayan, Senior Scientist, National Chemical Laboratory (CSIR), Pune, has been selected for the award in the field of pharmaceutical sciences, in recognition of his for his pioneering work in the development of diverse classes of synthetic protein scaffolds. Dr. Sanjayan leads a research group engrossed in the design and development of diversely functionalized synthetic protein structures. Artificial protein mimetics, adopting specific compact conformations mimicking the native peptides / proteins, have a wide range of potential applications in the area of biomedical science. Such molecules are of fundamental interest - from the perspective of molecular recognition, and practical interest - from the perspective of medicine, since they may be useful for specific protein-protein interactions, which are frequently associated with human diseases. Furthermore, conformationally ordered synthetic oligomers can provide tight-binding ligands for a large protein recognition site, unachievable by the traditional "small molecule" approaches.

Pharmaceutical Sciences

Dr. Krishnan Ravikumar
Chief Scientist
Laboratory of X-ray Crystallography
CSIR-Indian Institute of Chemical Technology
Uppal Road, Tarnaka
Hyderabad 500607, Andhra Pradesh, India India

Dr Krishnan Ravikumar has been selected for the award in the field of Pharmaceutical Sciences, as he is well recognized for his knowledge and skills in devising Analytical Experimental Methods using X-Ray Diffraction, which is contributing to furthering drug research and development. This allows pharmaceutical companies to gain further insights from the patent databases, helping to correlate the polymorphic crystalline forms and solvate forms. Several of his crystal structure analysis on drug molecules and their solvates has aided knowledge and understanding about the stability of the drug and its formulations. His structural studies are improving the chemists understanding, helping to make generalizations, predict and design new molecules with proper stereochemistry, visualise the unusual cyclization or develop new mechanism for the reaction pathways. Dr. Ravikumar’s X-Ray crystallographic research work is helping considerably in gleaning better understanding of molecules towards structure activity relationship in the field of drug design and development, adding significant value in pharmaceutical research.

Ranbaxy Research Awardees - 2011

Medical Sciences - Basic Research

Prof. Tapas Kumar Kundu, FNASc., FASc., FNA
Sir J.C.Bose National Fellow
Transcription and Disease Laboratory
Molecular Biology and Genetics Unit
JNCASR, Jakkur P.O., Bangalore-560064, INDIA

Professor Tapas Kumar Kundu has been selected for the award in the field of Basic Research in Medical Sciences for his significant contributions in the area of Epigenetics and gene regulation with special emphasis on disease. His work, for the first time, established the causal relationship of histone and non-histone protein hyperacetylation in the manifestation of oral cancer and Bovine mastitis. He has also developed a nano device to induce acetylation of histones in the mice brain which could be highly useful for the treatment of neurodegenerative diseases.

Medical Sciences - Medical Research

Dr. Satish Kumar Gupta
Deputy Director
Chief, Reproductive Cell Biology Laboratory
National Institute of Immunology
Aruna Asaf Ali Marg, New Delhi-110067, INDIA

Dr. Satish Kumar Gupta has been selected for the award in the field of Medical Research in Medical Sciences for his outstanding contributions to our understanding of the molecular basis of mammalian fertilization, which is an important attribute of all sexually reproducing organisms that provides plasticity to a species by enhancing crucial recombination events thus ensuring its survival through evolution. He proposed novel functional significance of the respective zona pellucida glycoproteins and their glycosylation during human sperm-egg binding and induction of the acrosome reaction in the capacitated human sperm. Further, down stream signalling molecules associated with zona pellucida glycoproteins mediated acrosome reaction has been delineated. Due to their critical role in the fertilization, tissue specificity and accessibility to systemic antibodies, zona pellucida glycoproteins have emerged as potential candidates for regulation of fertility through immunological intervention. His studies have provided critical insights to the zona pellucida based **contraceptive** vaccine and their potential application with special reference to wildlife population management.

Medical Sciences - Clinical Research

Prof. Arun J Sanyal M.D.
Charles Caravati Professor of Medicine
Virginia Commonwealth University School of Medicine
Richmond, VA

Dr. Arun Sanyal has been selected for the Ranbaxy Clinical Research Award for his pioneering work in the areas of nonalcoholic fatty liver disease (NAFLD) and cirrhosis. NAFLD affects over a third of the population and independently increases the risk of cirrhosis, diabetes and cardiovascular disease. Dr. Sanyal established the relationship of NAFLD with obesity and insulin resistance, clarified the molecular mechanisms driving disease progression to cirrhosis and then translated these to establish the current standard of care for the treatment of this condition. Cirrhosis is the final result of many forms of chronic liver disease and is a leading cause of

death globally. Dr. Sanyal has performed pioneering studies that have led to improvements in the treatment of variceal hemorrhage, refractory ascites, hepatic encephalopathy and hepatorenal syndrome the major complications of cirrhosis that cause death. His work has thus impacted the health of many millions of individuals worldwide.

Pharmaceutical Sciences

Dr. Navin Khanna
Senior Scientist and Group Leader
Mammalian Biology Division
Recombinant Gene Products Group
International Centre for Genetic Engineering & Biotechnology
New Delhi 110067, INDIA

Dr. Navin Khanna has been selected for the award in the field of Pharmaceutical Sciences for his primary contribution in the development of novel recombinant designer proteins as inexpensive, highly sensitive and specific diagnostic intermediates for viral infections. Diagnostic kits, based on these tailor-made proteins, have been successfully commercialized, and are being sold in several countries. The availability of recombinant clones for production of high quality diagnostic intermediates from his laboratory has reduced production costs of Dengue, HIV, HCV and HBV diagnostic kits significantly. Recently, Dr. Khanna successfully transferred the indigenously developed technology on the combined Dengue antigen and IgM/IgG antibody detection to an Indian Diagnostic company. Since then, more than 500,000 Dengue tests were utilized by the laboratories in India to diagnose and detect dengue infection even on the first day of fever, thereby saving precious lives by timely interventions. His research efforts continue to make significant impact on public health.

Ranbaxy Research Awardees - 2012

Medical Sciences - Basic Research

Prof. Umesh Varshney
Professor
Department of Microbiology and Cell Biology
Indian Institute of Science
Bangalore

Professor Umesh Varshney has been selected for the award in the field of Basic Research in Medical Sciences for his pioneering discoveries in the areas of protein synthesis and DNA repair. He exploits heterologous systems and molecular genetics approaches, and uses Escherichia coli and mycobacteria as model organisms. His studies on the structure-function and evolutionary relationships of various tRNAs, translation factors and ribosomes and evolutionary relationships of various tRNAs, translation factors and ribosomes have advanced our understanding of the mechanism of protein synthesis, fundamental to development of novel strategies in broader areas of biotechnology and medicine. The other aspect of his research focuses on the major DNA repair pathways in mycobacteria. In the host macrophages, mycobacteria are exposed to reactive oxygen species and reactive nitrogen intermediates that damage DNA. His studies are making a major contribution to the overall

endeavor of developing newer drug targets and attenuated strains to control mycobacterial infections such as tuberculosis, a global human health problem.

Medical Sciences - Medical Research

Prof. Kanjaksha Ghosh
Director
National Institute of Immunohaematology
13th floor, KEM Hospital Campus,
Parel, Mumbai

Prof. Kanjaksha Ghosh has been selected for the award in the field of Medical Research in Medical Sciences for his significant contribution on Congenital Bleeding Disorders spanning a period of more than 30 years. Through more than 150 publications on the subject he showed that almost all severe congenital bleeding disorders can become clinically milder on co-inheritance of prothrombotic genes. Using this clinical finding, a firm in USA has already developed an aptamer against antithrombin molecule and showed that it reduces severity of haemophilia in experimental animals. He advanced a unique laboratory classification of severe haemophilia based on thromboelastography and this has an important application in the management of haemophilia. He also showed that antifibrinolytics interferes with the inhibitors in haemophilia and improve blood coagulation. In addition, his seminal work showed that major surgeries in severe haemophilia can be achieved with 20% of the amount of factor concentrate as is used in Western countries. This has an important implication in reducing the cost of therapy. Work of Prof. Ghosh has improved our understanding of genomic interaction in haemophilia and its implication in future management.

Medical Sciences - Medical Research

Prof. Saumitra Das
Professor
Department of Microbiology & Cell Biology
Indian Institute of Science
Sir C.V. Raman Avenue, Bangalore

Prof. Saumitra Das has been selected for the award in the field of Medical Research in Medical Sciences for his outstanding contributions to understanding of Hepatitis C virus (HCV) Biology with special emphasis on HCV RNA translation. He has demonstrated that the interaction between ribosome and HCV RNA is unique and can be selectively targeted to develop novel antiviral agents. His work, for the first time, revealed an intriguing mechanism for the translation-replication switch in HCV RNA which is also exploited to develop effective antiviral agents. He has identified specific peptides, small-RNAs and also pure compounds targeting the viral processes to efficiently inhibit hepatitis C virus proliferation. These novel approaches provide a new dimension in the field of antiviral drug discovery and could be used in combination for effective antiviral therapeutics against hepatitis C virus.

Medical Sciences - Clinical Research

Prof. Parmjeet Randhawa
Division of Transplant Pathology,

Department of Pathology,
Thomas starzl Transplantation Institute,
University of Pittsburgh,
Pittsburgh, PA, USA.

Prof. Parmjeet Randhawa has been selected for the award in the field of Medical Sciences Clinical Research as he was the first to recognize BK virus nephropathy masquerading as rejection in the era of modern immunosuppression. BK virus quantitative polymerase chain reaction initially developed for research is now a routine diagnostic and screening tool. Another major clinical need, the development of effective drugs against BK virus, is now being addressed as part of a multidisciplinary drug discovery program, which uses medicinal chemistry, high throughput screening and computational biology. He has demonstrated the anti-BKV activity of several compounds currently under clinical trial, including CMX001, Leflunomide, pooled human immunoglobulin and kinase inhibitors. He has characterized the human immune response to polyomavirus with the ultimate goal of developing vaccines against BK virus. Most recently, his laboratory has become the reference center for an International Quality Control Trial for BKV immunohistochemistry. To date he has secured NIH funding comprising one R21, three RO-1, and two NO- 1 awards totaling 4.5 million dollars in total costs.

Pharmaceutical Sciences

Prof. Sandeep Verma
Shri Deva Raj Chair Professor
Department of Chemistry
Thematic Unit of Excellence on Soft Nanofabrication
Indian Institute of Technology Kanpur
Kanpur

Prof. Sandeep Verma has been selected for Ranbaxy Research Award in the field of Pharmaceutical Sciences for his outstanding contributions in creating novel, self-assembling peptide scaffolds to mimic aggregation of amyloidogenic proteins, such as prion protein, insulin and Aâ peptide. These model peptides and their conjugates also serve as viable screens for the discovery of potential inhibitors of protein aggregation processes. In addition, his group has also significantly contributed to the discovery of enzyme processable, stimuli-responsive, peptide-based soft materials for drug delivery applications.

Ranbaxy Research Awardees - 2013

Medical Sciences - Basic Research

Dr. Amit Sharma
Group Leader and Staff Scientist
Structural and Computational Biology Group
International Centre for Genetic Engineering and Biotechnology, New Delhi

Dr. Amit Sharma has been selected for the award in the field of Medical Sciences under Basic Research category. Dr. Sharma has made pivotal contributions to the understanding of structural principles that underlie molecular function of malaria parasite proteins. Over the past decade, Dr. Sharma's

laboratory has studied parasite proteins involved in various crucial processes including protein translation. These proteins have been studied using multi-disciplinary approaches including bioinformatics, structural biology, biological assays, parasite biology and inhibitor development. These studies together provide specific targets for structurebased design of inhibitors against malaria and some of the projects are poised for collaboration with pharmaceutical partners. Besides structural biology, Dr. Sharma has interests in evolutionary biology, science education and the protection of environment. He has produced a documentary on Global Warming that has been widely distributed.

Medical Sciences - Medical Research

Prof. (Dr.) Balram Bhargava
Department of Cardiology
Cardiothoracic Science Centre
All India Institute of Medical Sciences, New Delhi

Dr. Balram Bhargava has been selected for the award for developing the indigenous Platinum Iridium coronary stent and has been instrumental in clinically evaluating Indian stents. These low cost indigenous stents have benefitted several thousand patients. He set up the Centre for Excellence for Stem Cell Studies, which has initiated treatment of patients with dilated cardiomyopathy for the first time in the world. This has benefitted number of no-option patients waiting on the cardiac transplant list. He has for the first time demonstrated the adverse cardiac effects of chewing tobacco. He has also promoted the India-Stanford Biodesignprogramme, a unique interdisciplinary programme to foster innovation, design in low cost implants/devices. This fellowship on Biomedical Technology Innovation has led to over thirty patents on low cost medical devices. He is currently developing the Chest Compression Device for Sudden Cardiac Death patients; funded by the Wellcome Trust. He is providing leadership for creative disease prevention, early detection and transport system for sick cardiac patients.

Medical Sciences - Medical Research

Prof. (Dr.) Gagandeep Kang
Professor and Head
The Wellcome Trust Research Laboratory
Division of Gastrointestinal Sciences, Christian Medical College, Vellore

Dr. Gagandeep Kang has been selected for the award for her outstanding and comprehensive research on diarrhoeal disease that led to important advances in Indian public health. Focusing on vaccines, enteric infections and nutrition in young children in disadvantaged communities, she has combined field epidemiology with intensive laboratory investigations to create a body of work that has informed both the science of infectious diseases and policy in India. Dr. Kang is a teacher and a research mentor for undergraduate, post-graduate and post-doctoral researchers and for young faculty. Mentoring fellows and trainees within and outside the institution has been a key component of her group's strategy to build capacity and sustainable research in inter-disciplinary fields in India. Using a unique blend of epidemiologic and laboratory based research, Dr. Kang has taken on formidable challenges to create an outstanding public health research programme that is

delivering relevant and scalable interventions focused on the needs of India's children.

Medical Sciences - Clinical Research

Dr. V. Mohan
President and Chief of Diabetes Research
Madras Diabetes Research Foundation and
Chairman & Chief Diabetologist,
Dr. Mohan's Diabetes Specialities Centre, Chennai

Dr. V. Mohan has been selected for the award in the field of Clinical Research for his research work on Fibrocalculous Pancreatic Diabetes (FCPD) that led to development of "Mohan's criteria" for FCPD and he also described its natural history He later characterized the "Asian Indian Phenotype" which helped to explain the increased susceptibility of Indians to diabetes. He was involved in onGenome-Wide Association Studies (GWAS) which identified six novel type 2 diabetes genes in South Asians.His team identified novel mutations inNeonatal Diabeteswhich occurs below six months of age. He alsoshowed that physical inactivity and intake of refined grains (white rice) contribute greatly to the diabetes epidemic in India. He and his colleagues have innovated a High Fibre White Ricewhich has 5 times higher fibre content and lower glycemic index. Dr. Mohan has developed 'The Chunampet Rural Diabetes Prevention Project (CRDPP)' using telemedicine. He has also developed the Indian Diabetes Risk Score (IDRS) to identify those at risk of future diabetes.

Pharmaceutical Sciences

Prof. (Dr.) Santanu Bhattacharya
Chairman
Department of Organic Chemistry
Indian Institute of Science, Bangalore

Dr. Santanu Bhattacharya has been selected for the award for his original research work involving the development of new liposome based delivery systems with improved cellular transfection efficiency, remarkable serum stability and gene knockdown capability. These findings have useful implications towards the practical implementation of gene therapy. Further, Prof. Bhattacharya has developed a wide range of novel lipid analogues including the gemini forms of lipids and several other synthetic molecular probes for specific biological and bio-analytical applications.

Sun Pharma Research Awardees - 2014

Medical Sciences - Basic Research

Dr. Rajesh S. Gokhale
Staff Scientist VII
National Institute of Immunology
Aruna Asaf Ali Marg, New Delhi 110067 India

Dr. Rajesh S. Gokhale has been selected for the Sun Pharma Research Awards-2014 in the field of Medical Sciences-Basic Research for his pioneering discovery of "Polyketide Quinones" in Mycobacterium tuberculosis (Mtb), the causative agent of Tuberculosis (TB) in humans. Mtb in humans is

known for its latent prolonged persistence and the adaptation to hypoxia is considered to be the key factor. Dr Gokhale's studies identify polyktide quinones as the crucial mediator in maintaining cellular bioenergetics in oxygen-deficient niches. This discovery provides a paradigm shift in our understanding of Mtb survival and the future drug targeting of this novel pathway could have profound impact on limiting latent TB conditions in humans.

Medical Sciences - Medical Research

Prof. (Dr) Akhil C Banerjea
Staff-Scientist VII, Professor
Laboratory of Virology
National Institute of Immunology, New Delhi-110067 India

Professor (Dr) Akhil C Banerjea has been selected for the Sun Pharma Research Award-2014 in the field of Medical Sciences-Medical Research for his numerous pioneering discoveries in the field of HIV/AIDS and other viruses. The role of HIV-1-Rev mediated RNA-interference and identification of arginine rich motif sufficient to confer RNA-i-suppressive effect in HIV-1 and Dengue virus; Micro-RNA34a in enhancing the HIV-1 replication by targeting PNUTS- a phosphatase that negatively regulates HIV-1 transcriptional complex formation; ability of HIV-1 accessory gene Vpr alone to cause inhibition of cellular ubiquitination and redirecting this function for degradation of HIV-1 specific cellular restriction factors, together adds a new dimension to the relationship of HIV-1 and host relationship. Finally, mechanistic details of the regulation of HIV-1 Tat and Rev involving NQO1 offers new opportunities to effectively interfere with HIV-1 replication. These discoveries unearth novel roles of both viral and host genes that can be exploited for controlling virus replication specifically and effectively.

Medical Sciences - Clinical Research

Dr. Patrick S. Kamath
Professor of Medicine
Division of Gastroenterology and Hepatology
Mayo Clinic College of Medicine
200 First Street SW, Rochester MN 55905 USA

Dr. Patrick S. Kamath has been selected for the Sun Pharma Research Award-2014 in the field of Medical Sciences-Clinical Research. He is best known for developing the Model for End-Stage Liver Disease (MELD) score. Although initially developed to predict outcomes in cirrhotic patients undergoing the TIPS procedure, the MELD score has been shown to be a valuable tool in predicting survival in a wide variety of liver diseases including cirrhosis, alcoholic hepatitis, and acute liver failure. A true example of translational research, the MELD score is now being used to prioritize cadaveric organ allocation for liver transplantation in most countries around the world. The MELD score is also used to stratify patients according to mortality risk in investigational protocols, and to counsel patients and their families regarding disease outcomes.

Pharmaceutical Sciences

Dr. Ram Vishwakarma
Director

CSIR - Indian Institute of Integrative Medicine
(Council of Scientific and Industrial Research)
Canal Road, Jammu 180 001 India

Dr. Ram Vishwakarma has been selected for the Sun Pharma Research Award-2014 in the field of Pharmaceutical Sciences for his notable contributions in chemical biology of GPI anchors and new drug discovery. The GPI (glycosylphosphatidylinositol) molecules provide alternative mode of anchoring specialized proteins/glycans to the plasma-membrane, playing key role in membrane-organization and trans-membrane signaling. He made significant contributions in chemical synthesis, biosynthesis and cell biology of Lipophosphoglycan and protein GPI anchors. He then extended this work towards new drug discovery in the area of cancer (PI-3K/Akt/mTOR, CDK, IGFR1), diabetes (GPR40 and DGAT1) and infection (ATP synthase and PGP modulators) and addressed key biological questions. Recently, he established a very productive research program on natural products driven drug discovery at IIIM Jammu leading to the discovery of number of drug candidates for cancer and tuberculosis. In early part of his career, he played a major role in development of antimalarial drug arteether

Sun Pharma Research Awardees - 2015

Medical Sciences - Basic Research

Prof. Subrata Sinha
(MD PhD, FAMS, FNA, FASc, FNASc)
J C Bose Fellow
Director
National Brain Research Centre, Manesar, Gurgaon, Haryana 122051 India

Professor Subrata Sinha has been selected for the award in the field of Basic Research in Medical Sciences for his pioneering research on glioma biology, particularly in the area of functional genomics and the molecular basis of the tumour heterogeneity. His work provides an insight into why apparently similar tumours within the same histological grade may differ in terms of behaviour and therapeutic response. His initial work identified a molecular locus that segregates with high grade gliomas that show increased proliferation. Subsequently, he and his collaborators, have been able to identify markers of adverse phenotype, including poor survival, in high grade glioma. This work also identifies novel mediators of the hypoxic response, including the FAT1 gene, which links hypoxia and inflammation. His research shows how molecular differences between tumours of similar histology can be used to identify distinct subgroups and to develop targeted therapeutics, including the abrogation of hypoxia induced chemo-resistance.

Medical Sciences - Medical Research

Prof. Debabrata Dash
(MD, PhD, DSc, DNB, FNA, FASc, FAMS)
Professor
Department of Biochemistry
Institute of Medical Sciences
Banaras Hindu University

Varanasi-221005 India

Prof. Debabrata Dash has been selected for the award in the field of Medical Sciences Medical Research. The contributions of Prof. Dash over past three decades have carved him a niche in areas of translational nanomedicine, platelet biology and thrombosis research. He is credited with design of a novel theranostic platform that combines traditional thrombolytic therapy (streptokinase) with state-of-the-art photothermal therapy (gold nanorods irradiated with near-infrared laser) for effective lysis of occlusive pathological thrombi with minimal bleeding complications. He has designed a sensitive impedance-based nano-biosensor to identify/screen individuals with high thrombotic risk and developed isoform of graphene towards safe biomedical applications. He asked the intriguing question "how platelets age?' and unveiled the secret of platelet ageing with a series of incisive experiments. He identified Ubiquitin-Proteasome System and Sirtuin deacetylases as components of putative "Internal Timer" regulating platelet life span, which can be potential therapeutic targets against thrombocytopenia. Based on platelet model he validated RhoA-ROCK-MLC axis and fibrinogen as anti-Alzheimer therapeutic possibilities. Research of Prof. Dash is high on translational scale and recognized globally.

Medical Sciences - Clinical Research

Dr. Virender S Sangwan, (MS)
Dr. Paul Dubord Chair in Cornea, Tej Kohli Cornea Institute
Director, Center for Ocular Regeneration (CORE)
Director, Srujana-Center for Innovation
L V Prasad Eye Institute, KallamAnji Reddy Campus
Banjara Hills, Hyderabad - 500 034 India

Dr. Virender Singh Sangwan is being recognized for his pioneering and successful application of stem cell-based treatment, called cultivated limbal epithelial transplantation (CLET) of the damaged corneas of over 1000 people, repairing their corneas and restoring their vision in large measure, and also in developing an simpler version of this treatment (termed SLET or simple limbal epithelial transplantation), which can be practiced in situ, in vivo by any qualified corneal surgeon, without the need for a sophisticated stem cell culture laboratory. The SLET reduced the cost of surgery significantly and eliminated the need for expensive laboratory based cultivation.

Pharmaceutical Sciences

Dr. Anil Koul, Ph.D
Director
CSIR - Institute of Microbial technology (IMTECH)
Sector 39A, Chandigarh-160036 India

Dr. Anil Koul has been selected for this year's Sun Pharma Research Award in field of pharmaceutical sciences for his contribution in discovery of SIRTURO^{TM} (generically called Bedaquiline) - used for treatment of drug-resistant tuberculosis (TB). This is the first new drug to be discovered in last 45 years for treatment of drug-resistant TB. SIRTURO belongs to a new chemical family and has a novel mechanism of action i.e., blocking energy (ATP) production and thereby killing bacteria by shutting their power supply. SIRTURO has been approved in US, Europe and several other countries and in

2015 Indian Government approved SIRTURO for conditional use in patients with drug-resistant TB. Till date, several thousand drug-resistant TB patients across the world have received SIRTURO. Dr. Koul served as Senior-Director at Pharma giant Johnson and Johnson in discovery unit and is an expert in pharma drug-discovery and development research. He is member of United Nation's STOP TB program and most recently featured in NDTVs "Every Life Counts" program. Dr. Koul's contribution will profoundly impact lives of TB patients across the world.

Sun Pharma Research Awardees - 2016

Medical Sciences - Basic Research

Dr. Rajan Sankaranarayanan
Chief Scientist
CSIR-Centre for Cellular and Molecular Biology
Uppal Road, Hyderabad - 500 007, India

Dr. Rajan Sankaranarayanan has been selected for the Sun Pharma Research Award-2016 in the field of Medical Sciences-Basic Research for his outstanding contributions in the area of protein biosynthesis by studying proofreading mechanisms using structural biology approaches. Notably, his work has uncovered how chirality-based checkpoints operate in excluding D-chiral amino acids from entering the translation machinery and has shown that the mechanism is conserved from bacteria to mammals. The work has implications for probing the role of such checkpoints in the neuronal context as some D-amino acids are well known neurotransmitters.

Medical Sciences - Medical Research

Dr. Vikram Mathews
Associate Director
Professor and Head
Department of Clinical Haematology
Christian Medical College
Vellore 632004, India

Dr. Vikram Mathews has been selected for the Sun Pharma Research Award-2016 in the field of Medical Sciences-Medical Research. He is a physician-scientist who is best known for his work in Acute Promyelocytic Leukemia (APL) and the use of arsenic trioxide (ATO) in the treatment of this condition. The work done by his group was instrumental in moving this well tolerated agent as front line therapy in the management of APL. Over a series of publications all aspects of treatment of APL with regards to optimizing therapy, risk stratification, minimal residual disease monitoring, toxicity profile and cost analysis with specific attention to factors that are relevant to India and other low and minimal income countries have been addressed by this group. Dr. Vikram Mathews continues to work on mechanisms of drug resistance in acute leukemia with special interest in micro-environment mediated mechanisms of drug resistance and metabolic alterations and adaptations in leukemia.

Medical Sciences - Clinical Research

Dr. Ashish Suri

Professor of Neurosurgery
Neurosciences Center
All India Institute of Medical Sciences
New Delhi, India

Dr. Ashish Suri has been selected for the Sun Pharma Research Award-2016 in the field of Medical Sciences-Clinical Research. He has pioneered research in developing innovative techniques and treatment protocols for complex skull-base and brain tumor surgery; and high-end collaborative deliverable-based translational research and development in Neuro-Engineering in Neurosurgery Simulation. Landmark achievements include structured modular simulation-based neurosurgery skills curriculum with Pan-India and Indo-German collaboration; computerized evaluation of neurosurgery task-based skills; open-source, interactive skills-based 3D/stereoscopic e-learning platform; physical, hybrid and virtual simulators and innovative instrumentation.

Pharmaceutical Sciences

Dr. D. Srinivasa Reddy
Senior Scientist
Division of Organic Chemistry
CSIR-National Chemical Laboratory
Dr. Homi Bhabha Road, Pune 411008

Dr. D. Srinivasa Reddy has been selected for the Sun Pharma Research Award- 2016 in the field of Pharmaceutical Sciences. He is best known for his work in the area of total synthesis of biologically active natural products and medicinal chemistry using . "silicon incorporation approach" towards identification of lead molecules of therapeutic potential. His research group accomplished total synthesis of more than 25 natural products with impressive biological activities. A few recent achievements from his group include identification of potential leads: (i) antibiotic compound based on hunanamycin natural product for treating food infections, (ii) anti-diabetic molecule in collaboration with an industry partner and (iii) anti-TB compound using a strategy called "repurposing of a drug scaffold". Prior to joining CSIR-NCL, Dr. Reddy spent 7 years in drug discovery pharmaceutical industry where he played a key role in discovering a Phase-II clinical candidate. He is an author of 82 publications and inventor in 35 patents.

Sun Pharma Research Awardees - 2018

Medical Sciences - Basic Research

Dr. K. Thangaraj
Chief Scientist & Group Leader
Evolutionary and Medical Genetics
CSIR-Centre for Cellular and Molecular Biology
Uppal Road, Hyderabad 500007, India

Dr. K. Thangaraj has been selected for the Sun Pharma Research Award-2018 in the field of Medical Sciences - Basic Research. He has made significant contributions towards understanding the complex origin of Indian populations. His genetic studies, for the first time, provide evidence that the contemporary Indian populations descend from two divergent groups - Ancestral South Indians, and Ancestral North Indians

- who have admixed during the past 2000 - 4000 years, and for the last 2000 years almost all populations have been practicing endogamy. Subsequently, he demonstrated that the practice of endogamy for the last two thousand years has led to high frequency of population-specific recessive disease in at least one-third of the Indian populations. Studies of Dr. Thangaraj paved a way for identification and screening for recessive variants that are prevalent in population with strong founder effects, which would be useful for community-based premarital genetic counseling and precision medicine.

Medical Sciences - Clinical Research

Dr. Usha Kant Misra
Professor
(Ex-Head of Department of Neurology)
Sanjay Gandhi Post Graduate Institute of Medical Sciences
Raebareli Road, India

Prof Usha Kant Misra has made several original contributions in the field of CNS infection. In the field of Japanese encephalitis (JE) he, for the first time highlighted the diagnostic importance of thalamic lesions in MRI; flaccid weakness in JE was attributed to anterior horn cell involvement, the spectrum and basis of movement disorders in JE. In dengue infection two polar forms, encephalitis and muscle involvement with overlapping features has also been reported. Muscle involvement in dengue is due to edema, hemorrhage and altered vascular permeability which differs from that in scrub typhus which is due to vasculitis. His group has published over 15 investigators initiated randomized controlled trials which have impacted the treatment of status epilepticus, stroke, TB meningitis, intracerebral hemorrhage and migraine. He has pioneered the concept of low cost ICU and cost effective medicine. Based on his published work during 1999-2008 he was adjudged as the most prolific and impactful author amongst Neurologists and Neurosurgeons in India.

Pharmaceutical Sciences

Prof. Gajendra P.S. Raghava, FNASc., FASc.
Sir J. C. Bose National Fellow
Head, Department of Computational Biology
Indraprastha Institute of Information Technology (IIIT)
Okhla, Phase-3, New Delhi

Professor G. P. S. Raghava has been selected for the Sun Pharma Research Award-2018 in the field of Pharmaceutical Sciences. He is a computational biologist who is best known for developing free in silico products (software, databases and webserver) in the field of biological, medical and pharmaceutical sciences. His group developed more than 250 in silico products that is highest contribution by a single group in the world. Thompson Reuters ranked him in top 1% highly cited authors. His group also established experimental lab to validated in silico predictions in wet-lab. This leads to discovery of experimentally validated novel drug delivery vehicles. These vehicles not only deliver drugs inside cell even they can be used to deliver drug via skin (topical drug delivery). His lab also demonstrate that drug delivery vehicles developed in his group can be used to handle drug resistant bacteria as it facilitates drugs to cross membrane of bacteria.

Sun Pharma Research Awardees - 2019

Medical Sciences - Basic Research

Professor M. Radhakrishna Pillai
FRCPath, PhD, FAMS, FNASc, FASc, FNA
Director, Rajiv Gandhi Centre for Biotechnology
Government of India, Department of Biotechnology
Thiruvananthapuram, India

Professor M. Radhakrishna Pillai has been awarded the Sun Pharma Award for Medical Sciences (Basic Research) for his work on cervical cancer and human papillomavirus (HPV). Professor Pillai produced vast knowledge on the complex pathology of the virus to redefine the empirical approach to HPV infection. Recognizing this, World Health Organization supported Professor Pillai to alleviate the huge economic and social burden of 3-dose vaccine against HPV in Indian women. He rationally proved the efficacy of 2-dose of vaccine and also demonstrated that one dose of vaccine has significant potential to prevent infection. The prestigious Lancet Oncology journal wrote in a commentary "The study will make a longterm contribution to understanding the role of HPV vaccines in preventing infection and disease in countries with high burdens of cervical cancer and promises to lead the way in the assessment of one-dose HPV vaccination"

Medical Sciences - Clinical Research

Dr. P Sarat Chandra
Professor and Head Unit I, Dept of Neurosurgery
Team Leader and PI
Center of Excellence for Epilepsy & MEG
All India Institute of Medical Sciences, New Delhi
India, 110029

Prof P Sarat Chandra has made several original contributions (>100) in the field of Epilepsy Surgery and Cranio-vertebral junction surgery. He is PI & Team leader for prestigious Center of Excellence for Epilepsy (COE) and Magnetoencephalography, the first of its kind for India. He contributed towards first RCT in a landmark study for Drug Resistant Epilepsy (DRE) for Children (NEJM, 2017) establishing 10-time superiority of Surgery compared to medical therapy. He has also developed minimally invasive endoscopic techniques for complex epilepsy surgeries (hemispherotomy & corpus callosotomies) which are now established as a standard across globe. His group at COE contributed several original papers to understand the connectivity and molecular basis of epilepsy. Through his vast experience in epilepsy surgery, he trained several neurosurgeons and established epilepsy surgery programs in several parts of the country and other countries (Indonesia, Morocco). Prof Chandra also made significant contribution in Spine specifically the fields of cranio-vertebral junction anomalies, vertebral haemangiomas through several original papers describing new, safer and affordable surgical techniques, and development of newer implants.

Medical Sciences - Clinical Research

Ravi Salgia, MD, PhD
Arthur & Rosalie Kaplan Chair in Medical Oncology

Professor and Chair, Department of Medical Oncology & Therapeutics Research
Associate Director for Clinical Sciences
City of Hope National Medical Center
Duarte, CA, 91010, USA

Dr. Ravi Salgia is a distinguished clinician-scientist who has dedicated his career to cancer care and research. As a scientist, his groundbreaking research into receptor tyrosine kinases and their role in thoracic cancers has paved the way for the development of innovative targeted therapies that have transformed treatment of the disease. As a clinician, he leads an active clinical practice and remains committed to ensuring the very best care for his patients. Dr. Salgia has been honored with numerous awards, including being named numerous times as one of the Top Doctors in America. He is a member of the editorial board for several top-tier journals, and has authored or coauthored >300 peerreviewed publications and book chapters. He is also the sole editor of two recently published books on targeted therapies and personalized medicine. Prior to City of Hope, Dr. Salgia was tenured professor and vice chair at University of Chicago School of Medicine. Dr. Salgia began his academic career as a faculty member at the Dana-Farber Cancer Institute and Harvard Medical School following his postgraduate training in internal medicine at The Johns Hopkins University School of Medicine in Baltimore, MD.

Pharmaceutical Sciences

Prof. Arun K. Shukla, Ph.D.
Joy Gill Chair Professor
Department of Biological Sciences and Bioengineering
Indian Institute of Technology
Kanpur 208016, India

Prof. Arun K. Shukla is selected for the Sun Pharma Research Award, 2019 in Pharmaceutical Sciences. Dr. Shukla has made seminal contributions in the area of activation, signaling and regulation of G protein-coupled receptors (GPCRs). These receptors represent the largest class of drug targets in the human genome, and Dr. Shukla's research has direct implications for designing novel therapeutics targeting GPCRs with minimized side effects. In addition, Dr. Shukla's research program has also established the country on the international arena in the area of membrane protein structural biology.

Sun Pharma Research Awardees - 2020

Medical Sciences - Basic Research

Professor Yamuna Krishnan
Professor of Chemistry,
The University of Chicago
Chicago, IL 60637
USA

Professor Yamuna Krishnan has been awarded the Sun Pharma Award for Medical Sciences (Basic Research) for the development of DNA-based fluorescent reporters and quantitative imaging of the chemical composition of organelles in live cells from human patients and in genetic model

organisms, with applications in precision medicine and disease biology

Medical Sciences - Clinical Research

Dr. Anurag Agrawal
Director, CSIR Institute of Genomics and Integrative Biology
Delhi, 110007

Dr Anurag Agrawal has made several original contributions in the field of Respiratory Diseases. He is Director of the CSIR Institute of Genomics and Integrative Biology and has led multifaceted research programs spanning respiratory physiology, molecular biology and data science. His group's work led to new understanding of targeting mitochondria to prevent or treat lung diseases, as well as the discovery of mesenchymal stem cells as effective mitochondrial donors. He has directly contributed to novel physiological methods of measuring lung function, portable oscillometry devices for highly sensitive diagnosis of respiratory diseases, and digital health systems with artificial intelligence enabled workflows. His collaborative efforts have also been important in quantifying the magnitude of respiratory diseases burden in India and understanding its causes.

Pharmaceutical Sciences

Prof. Srivatsan Seergazhi Gopalan
Department of Chemistry
Indian Institute of Science Education and Research (IISER) Pune
Dr. Homi Bhabha Road, Pune 411008, India

Prof. S. G. Srivatsan is selected for the Sun Pharma Research Award, 2020 in Pharmaceutical Sciences. Srivatsan has made impactful and original contributions in the field of nucleic acid diagnosis and therapeutics by developing innovative probe design approaches and chemical labeling technologies. The platforms developed by his group have provided greater insights into the structure and drug binding abilities of therapeutically very important nucleic acid targets such as bacterial ribosomal decoding site RNA and disease-causing G-quadruplex-forming DNA and RNA sequences. His nucleic acid labeling technologies offer simplified solutions to visualize cellular nucleic acids and enable site-directed display of small molecule probes on target genes, which can profoundly advance the utility of CRISPR tools in diagnosis and therapeutics.

Pharmaceutical Sciences

Prof. DULAL PANDA
JC Bose National Fellow
Professor
Department of Biosciences and Bioengineering
Indian Institute of Technology Bombay,
Mumbai 400076, India.

Prof. Dulal Panda has been selected for the Sun Pharma Research Award, 2020 in Pharmaceutical Sciences. Prof. Panda has made immense contributions to the discovery of tubulin targeting anticancer agents and understanding their

mechanisms of action. He has also developed several nanotechnology-based targeted anticancer drug delivery systems. Notably, he has elucidated the role of microtubule dynamics in the regulation of cell cycle, cell migration, and apoptosis. Further, Prof. Panda has contributed extensively in understanding the formation and functioning of the Z-ring that engineers bacterial cell division. He has shown that several accessory proteins regulate the assembly and stability of the bacterial cell division protein FtsZ. His work has greatly aided in establishing FtsZ as a new antibacterial drug target. He has discovered several antibacterial agents that target the cell division machinery of bacteria.

Sun Pharma Research Awardees - 2021

Medical Sciences - Basic Research

Dr Suvendra Nath Bhattacharyya
Senior Principal Scientist and Head,
Molecular Genetics Division
CSIR-Indian Institute of Chemical biology
Kolkata, India

Dr Suvendra Nath Bhattacharyya has been awarded The Sun Pharma Science Foundation Research Award in Medical Sciences (Basic Research) for his seminal contribution in establishing the role of a special class of small regulatory RNAs, the microRNAs, in varieties of cellular events and pathways in mammalian cells including the host-pathogen interaction and infection processes. Dr Bhattacharyya has investigated the mechanism of exchange of microRNAs between mammalian cells via the Extracellular Vesicles (EV) and has shown importance of EV-associated miRNA exchange in neurodegeneration, inflammation, and cancer. He has recently explored the EV-associated microRNAs as immunomodulators to regulate the infection process of the host cells by the invading pathogen Leishmania donovani, the causative agent of visceral leishmaniasis. His research also promises development of microRNA and EV-based therapeutics against other deadly diseases.

Medical Sciences - Basic Research

Professor Bushra Ateeq
Department of Biological Sciences and Bioengineering
Indian Institute of Technology Kanpur
Kanpur, 208016, U.P., India

Professor Bushra Ateeq has been awarded The Sun Pharma Science Foundation Research Award in Medical Sciences (Basic Research) for molecular characterization of prostate cancer with application in diagnostics and precision medicine, discovery of new drug targets and development of alternative therapeutic strategies for the treatment of advanced-stage and drug-resistant cancer.

Medical Sciences - Clinical Research

Dr Giriraj Ratan Chandak
Chief Scientist & Group Leader
CSIR-Centre for Cellular and Molecular Biology
Hyderabad - 500007, India

Dr Giriraj Ratan Chandak, a physician-scientist has made significant contributions in the field of genetic disorders. A former director of the Centre for DNA Fingerprinting and Diagnostics, he has led multiple cohort-based studies of non-communicable diseases. He has discovered novel genes for chronic pancreatitis demonstrating genetic heterogeneity with Europeans. He lead his team to identify a novel microRNA that regulates Type 2 diabetes risk genes through vitamin B12, proving that genetic susceptibility to Type 2 diabetes and associated intermediate traits like obesity and insulin resistance may be epigenetically regulated. In contrast to the global role of folate deficiency, he has established maternal B12 deficiency as a risk factor for neural tube defects in their children. These findings have immense translational value. As Director of CSIR-Sickle Cell Anaemia Mission, he is passionately involved in creating awareness and reducing the disease burden through population screening, prenatal diagnosis, and clinical, social and genetic counseling.

Pharmaceutical Sciences

Prof. Debabrata Maiti
Department of Chemistry
Indian Institute of Technology Bombay
Powai, Mumbai 400076, India

Prof. Debabrata Maiti has been selected as the recipient of The Sun Pharma Science Foundation Research Award 2021 in Pharmaceutical Sciences. He has established himself as one of the world's leading scientists in the field of C-H activation by designing innovative catalytic methods for transforming organic molecules into several bio-active natural products as well as drug molecules and materials in step and atom-economic fashion. These conceptual developments have witnessed significant impact on materials research, agrochemicals and pharmaceuticals industry. At the same time, he has successfully developed various bio-inspired approaches by employing "eco-friendly" metals. In recent times, his group is pursuing research in the field of artificial metallo-enzymatic chemistry, which has seen tremendous growth with significant value in agrochemical and pharmaceutical industries.

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