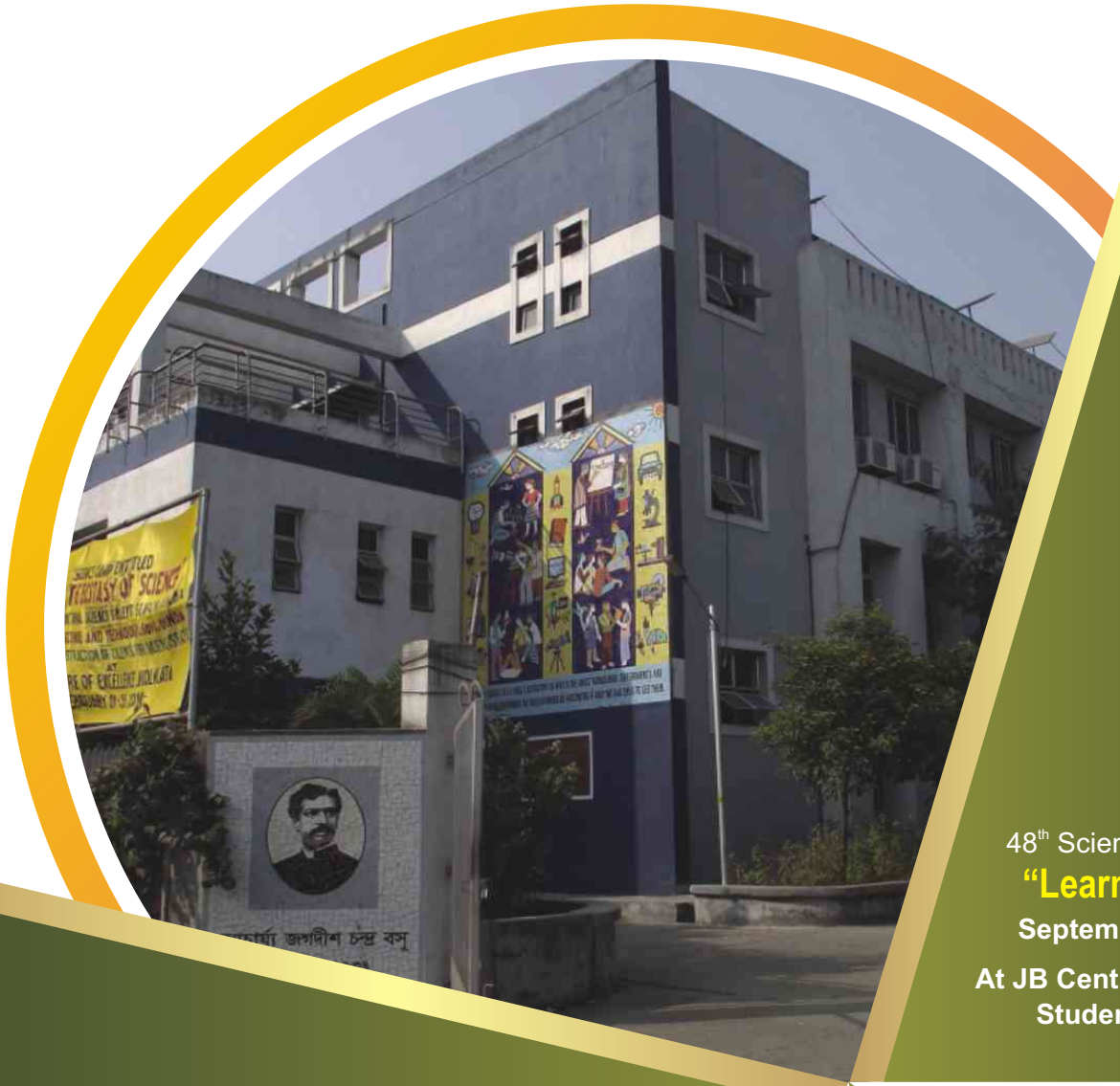
inspire

DST-INSPIRE INTERNSHIP SCIENCE CAMP - 2015

Organized By

JAGADIS BOSE NATIONAL SCIENCE TALENT SEARCH, GOVERNMENT OF WEST BENGAL

UNDER INSPIRE INTERNSHIP PROGRAM
OF
DEPARTMENT OF SCIENCE AND TECHNOLOGY, GOVERNMENT OF INDIA



48th Science Camp Entitled:

"Learning Science"

September 15 - 19, 2015

At JB Centre of Excellence for Student — Scientists

Jagadis Bose National Science Talent Search

1300, Rajdanga Main Road, Kasba, Kolkata – 700 107

Phone : 2441 7542, 2442 8270 Fax : (033) 2442 8267

E-mail: jbnsts@jbnsts.org; Website : http://www.jbnsts.org

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"Learning Science"

About JBNSTS

Jagadis Bose National Science Talent Search (JBNSTS), Kolkata was conceptualized in 1958 by visionaries such as Dr. B C Roy, Sir J J Ghandy and others to commemorate the Birth Centenary Celebration of India's first modern scientist, Acharya J C Bose. The program was inaugurated by Pandit Jawaharlal Nehru. JBNSTS is an autonomous institute promoted by the Department of Higher Education, Government of West Bengal. It is administered by a Governing Body with representatives from the State Government, academia and industry. Since 1961, JBNSTS is awarding the prestigious Jagadis Bose Scholarships to selected group of undergraduate students of science, engineering and medicine. In the last five decades, JBNSTS has grown to become a premiere institute of non-formal science education in the eastern and northeastern States of India with the objective towards pursuit of excellence through motivation, identification and nurture of young talented science students. It helps students to realize the importance of excellence in the scientific world and try to cultivate this in their own lives as students of science. JBNSTS also encourages students towards the learning of basic sciences and inculcates scientific spirit in the minds of young high school and undergraduate students. Focus has been given on unconventional and dynamic methods of non-formal accelerated learning through "out-of-class" activities, which have led to the recognition of intellectually sensitive and inquisitive minds. Since 2004, JBNSTS has launched an innovative middle school science Teachers Training Program which has brought into its ambit motivated teachers from the districts of West Bengal. JBNSTS has developed science kits and distributed to the teachers for demonstrating scientific principles to the middle school students in the classroom. The financial support for most of the activities of JBNSTS is provided by the Department of Higher Education & Department of Science & Technology, Government of West Bengal. In addition, Council of Scientific & Industrial Research (CSIR), Department of Science & Technology (DST), Government of India & Industries also collaborates with JBNSTS activities.

About DST-INSPIRE Program

Innovation in Science Pursuit for Inspired Research (INSPIRE)" is one of the innovative programs developed by the Department of Science & Technology for attraction of talent to Science. The basic objective of INSPIRE is to attract talent to the study of science at an early age and thus build the required critical human resource pool for strengthening and expanding the Science & Technology system and Research & Development base. It is a program with a long term foresight. A striking feature of the program is that it does not believe in conducting competitive exams for identification of talent at any level. It believes in and relies on the efficacy of the existing educational structure for identification of talent.

INSPIRE Program has three schemes :

I. **Scheme for Early Attraction of Talent for Science:** It aims to attract talented youth to study science by providing INSPIRE award of Rs.5,000/- to one million young learners in the age group 10-15 years for a duration of five years and arrange summer and winter camps for youth in various locations for top 1% in Class X board examinations with global leaders in science to experience the joy of innovations on an annual basis through INSPIRE internship.

a) INSPIRE Award

In order to seed and experience the joy of innovation, every year two lakh school children in the age-group of 10 to 15 years i.e., 6th to 10th standards are being identified for the INSPIRE Award. Each INSPIRE Award envisions an investment of Rs.5,000/- per child. The scheme plans to reach at least two students per secondary school during the next five years.

b) INSPIRE Internship

"Motivating talented youth to take-up research as a personal undertaking" by rubbing shoulders with global icons of science including Nobel Prize Winners, is the objective of INSPIRE Internship. This component of the program aims at

working as a life-long catalyzing experience for the 11th graders in science stream.

II. Scholarship for Higher Education: Scholarship for Higher Education (SHE) aims at attracting talented youth into undertaking higher education in science intensive programs, by providing scholarships and mentoring through 'summer attachment' to performing researchers. The scheme offers 10,000 scholarships every year @ Rs 0.80 lakh per year to talented youth in the age group 17-22 years, for undertaking Bachelor and Masters level education in Natural and Basic Sciences. However, the 18 Science subject such as (1) Physics, (2) Chemistry, (3) Mathematics, (4) Biology, (5) Statistics, (6) Geology, (7) Astrophysics, (8) Astronomy, (9) Electronics, (10) Botany, (11) Zoology, (12) Bio-chemistry, (13) Anthropology, (14) Microbiology, (15) Geophysics, (16) Geochemistry, (17) Atmospheric Sciences and (18) Oceanic Sciences, either as major/honors or their combination in BSc/Integrated MSc/Integrated MS course will be under the scope of INSPIRE Scholarship. The main feature of the scheme is mentorship support being planned for every scholar through INSPIRE scholarship.

This scheme offers 10,000 scholarships every year @ Rs.80,000/- each for undertaking Bachelor and Masters level education in the Natural & Basic sciences, possessing any of the following criteria:

a. Students who happen to be among the top 1% in 12th standard at their respective Board Examinations and are pursuing courses in Natural and Basic sciences at the B.Sc. or Integrated M.Sc. levels. Courses are not included other than Natural and Basic sciences in the current scheme in view of the focus on research in Basic sciences.

b. Students who have secured in the Joint Entrance Examination of JEE-Advance top 10,000 ranks, JEE-Main (top 10,000 ranks) plus those clearing NEET (top 10,000 ranks), and who also opt to study Natural and Basic sciences in any academic institute or university leading to graduate and post-graduate degree, would be eligible for scholarship.

c. Students admitted to Indian Institute of Science Education and Research (IISER), National Institute of Science Education and Research (NISER), Department of Atomic Energy Centre for Basic Sciences (DAE-CBS) at the University of Mumbai or happen to be Kishore Vaigyanik Protsahan Yojana (KVPY), National Talent Search Examination (NTSE), Jagadis Bose National Science Talent Search (JBNSTS) scholars and Science Olympiad Medalists, opting to undertake courses in the Natural & Basic sciences leading to B.Sc. and M.Sc. degrees are eligible for "SHE" scholarship.

III. Assured Opportunity for Research Careers: Assured Opportunity for Research Careers (AORC) aims at attracting, attaching, retaining and nourishing talented young scientific Human Resource to strengthened the R&D foundation and base by offering doctoral INSPIRE Fellowship in the age group 22-27 years, in both Basic and Applied sciences (including engineering and medicine). It also aims at assuring opportunities for post-doctoral researchers through a scheme (similar to the New Blood program of the Royal Society of UK) through contractual and tenure track positions for five years in both Basic and Applied sciences areas through an INSPIRE Faculty Scheme.

a) INSPIRE Fellowship

INSPIRE fellowship aims at enhancing research fellowships for doctoral studies and opening up partnerships with private sector for topping the Government's efforts in nurturing talents for scientific research. This scheme is applicable to Basic and Applied sciences as well as Medicine, Agriculture etc. with provision of multiple entries. The fellowship will be offered to (1) University 1st Ranker in a particular subject at PG level examination in Basic and Applied Science courses as well as (2) INSPIRE scholar, who have secured aggregate marks of 65 % or above at the 2 year MSc or 5 year Integrated MSc/MS.

b) INSPIRE Faculty Scheme

INSPIRE Faculty Scheme opens up an 'Assured Opportunity for Research Career (AORC)' for young researchers in the age group of 27-32 years. It is expected to augment high quality scientific manpower in scientific and educational institutions. It provides attractive opportunities to young achievers for developing independent scientific profiles and intends helping them emerge as S&T leaders in the long term. The Scheme offers contractual research positions. It provides career opportunities, but it is not a guarantee for tenure positions after 5 years.




“Learning Science”

Organizing Committee

Academic Committee:

Prof. (Dr.) Maitree Bhattacharyya, Director, JBNSTS
Dr. Paromita Roy, Dy. Director, JBNSTS
Dr. Abhijit Kar, Scientific Officer, JBNSTS
Dr. Smarajit Manna, Student Advisor, JBNSTS

Camp Coordinator:

Mr. Dipankar Sarkar, JBNSTS

Mentors

Dr. Maitree Bhattacharyya
Professor & Director
Jagadis Bose National Science Talent Search, Kolkata

Dr. Dhurabajyoti Chattopadhyay
Vice Chancellor
Amity University, Newtown, Kolkata

Dr. Sanghamitra Sengupta
Assistant Professor, Department of Biochemistry
University of Calcutta, Kolkata

Dr. Amitava Raychaudhuri
Palit Professor, Department of Physics,
Calcutta University, Kolkata

Dr. Samir Kumar Pal
Professor, Department of Chemical,
Biological & Macromolecular Sciences,
S. N. Bose National Centre for Basic Sciences, Kolkata

Dr. Swagata Das Gupta
Professor, Department of Chemistry
IIT, Kharagpur, Midnapore (W)

Dr. Arupratan Dutta
Chief-Nephrologist
Fortis Hospital & Kidney Institute
Rash Behari Avenue, Kolkata

Dr. Narayan Pradhan
Associate Professor
Department of Materials Science
Indian Association for the Cultivation of Science, Kolkata

Dr. Arnab Chakraborty
Assistant Professor, Applied Statistics Unit (ASU)
Indian Statistical Institute, Kolkata

Dr. D. P. Duari
Director, Research & Academics
M.P. Birla Institute of Fundamental Research,
M.P Birla Planetarium, Kolkata

Dr. Abhijit Kar
Scientific Officer, JBNSTS, Kolkata

Dr. Smarajit Manna
Student Advisor, JBNSTS, Kolkata

Dr. Arnab Pramanik
Research Associate, Department of Biochemistry,
Calcutta University, Kolkata

Dr. Pijush Basak
Research Associate, Department of Biochemistry,
Calcutta University, Kolkata

Dr. Satabdi Banerjee
Research Associate, Department of Biochemistry
Calcutta University, Kolkata

CAMP RULES

Welcome to the 48th Science Camp of JBNSTS entitled 'Learning Science'

Here you will have a unique experience of learning science through active interaction with great scientists and be encouraged to share your ideas with others. No test/grade – only learning science in a different way.

General Instructions:

- The camp hours are from 09:00 a.m. to 6:00 p.m. You are to attend all the sessions in your school uniform. MOBILE PHONES MUST BE KEPT IN SWITCHED OFF MODE DURING ALL ACADEMIC SESSIONS.
- Each participant has to make registration daily.
- All the participants will be divided into groups. There will be a group leader for each group selected by group members of each group. Each group has to prepare a project based on the 'hands-on activity' at the laboratory and present the same (PowerPoint / Chalk & talk) during project presentation session (02:00 p.m. – 06:00 p.m. on 19th September, 2015). Each group will get 10 minutes for presentation/ demonstration and 5 minutes for discussions.
- You will not be given any home work, but you are expected to interact freely with the experts, your group members and other groups.
- SUBMISSION OF ALL DOCUMENTS AND REIMBURSEMENT WILL BE MADE AT REGISTRATION DESK ONLY..

Submission of important documents:

- You are required to submit an attested copy of your 10th Standard Board Examination Mark Sheet, INSPIRE Registration Form endorsed by your Principle/HM and filled-in STUDENT'S INFORMATION SHEET during lunch break on 15th September, 2015.

BOOK BILL :

- All the participants will receive a Book Grant of Rs.1,500/-. For that all the participants has to submit the original bills for the book(s), already purchased, during lunch break (01.00 p.m. to 02.00 p.m.) on 16th September, 2015.

TRAVEL BILL :

Residential Students: Travel bills (bus, auto and / or train fare only) are to be submitted along with relevant documents (tickets etc.) on 16th September, 2015 during 01.00 p.m. to 02.00 p.m.

Non-residential Students: Travel bills (bus, auto and / or train fare only) are to be submitted on 18th September, 2015 during morning registration (09.00 a.m. to 10.00 a.m.).

- You are required to fill up the FEED BACK SHEET and submit it on 19th September, 2015 during 01.00 p.m. to 02.00 p.m.

Reimbursements:

- Reimbursement for Travel expenses and Book Grant (school wise) will be made on 19th September, 2015 during 01.00 p.m. to 02.00 p.m. In case, any payment related assistance / clarifications are needed, you may contact our accounts section.

On the last day i.e. 19th September, 2015 you will receive the Participation Certificate.








BRIEF INTRODUCTION TO THE EXPERTS

DR. MAITREE BHATTACHARYYA

Dr. Maitree Bhattacharyya is presently a Professor and Director of Jagadis Bose National Science Talent Search. She graduated from Presidency College with Honours in Physics and obtained M.Sc. degree from Calcutta University. Started research career in Department of Biophysics and Molecular Biology, Calcutta University with a Ph.D. degree in 1991. She pursued research with Research associateship from CSIR and joined Calcutta University as an Assistant Professor in 1994 to start with independent research laboratory. Later on, she was awarded DBT Overseas fellowship and worked as Visiting Scientist in UCSD, USA. Now she is the Professor, Department of Biochemistry, University of Calcutta (On lien). Ten students have already been awarded Ph.D. degree under her supervision and now she is leading a group of ten research scholars which comprises of Ph.D. and post doctoral students. She has published several research articles and chapters in books of International repute. Her research interests include (i) Study of microbial diversity in coastal and estuarine water and soil sediment in the world heritage site, Sundarbans. Exploration of dynamic correlations among physical, chemical and biological domains of this estuarine ecosystem. Inventorisation of microbial diversity along Indian coast; (ii) Identification of risk factors and biomarkers in the disease dynamics of diabetes associated cardiovascular disease and dyslipidemia; (iii) Application of green chemistry in bioremediation and biotransformation of heavy metal toxicity in industrial effluent, green synthesis of nanoparticles and (iv) Protein structure- function and interactions with special interest to heme proteins, bio molecular interaction.

Apart from academic research and teaching, she aims,

- To develop Scientific and Technological sphere of India especially the human resource to the level of highest possible International Standard.
- To develop Science and Technology of modern India so as to make India self-reliant to the extent possible in all spheres including Agriculture, Industry and Medicine.
- To inculcate scientific and rational temper within the younger section of the population towards developing a modern India based on logical foundation, objective and realistic state of mind and against all kinds of superstition, obscurantism and illogical thinking and actions.

DR. DHRUBAJYOTI CHATTOPADHYAY

Dr. Chattopadhyay is presently the Vice Chancellor of Amity University, Kolkata. He is formerly Pro Vice-Chancellor (Academic), University of Calcutta and Director of Centre for Research in Nanoscience and Nanotechnology. He is an eminent academician and researcher in his area of study. He has received a number of awards and recognition of his research work like Young Scientist Award, Membership of Guha Research Conference, Professor Umakant Sinha Memorial Award, Fellowship of National Academy of Science, Fellowship of Indian Academy of Sciences, Fellowship of West Bengal Academy of Science and Technology etc. Presently he is the President of West Bengal Academy of Science and Technology and Society of Biological Chemists (India). His area of research is Regulation of gene expression of negative stranded RNA viruses, the structure-function studies of different regulatory proteins, Oxidative damage of different macromolecules in the cell and its mechanism, microbial diversity study, culture dependent and independent, Metagenomics, industrial enzymes etc. He is the life member of different organizations like Society of Biological Chemists, Indian Science Congress Association, Indian Virological Society, Indian Biophysical Society, Asiatic Society, Biotechnological Society of India etc.

DR. SANGHAMITRA SENGUPTA

Dr. Sanghamitra Sengupta received the M.Sc. and Ph.D. degrees in 1991 and 1998, respectively, from the Department of Biochemistry, University of Calcutta. After obtaining postdoctoral training in the Department of Genetics of Case Western Reserve University and Stanford University, USA, she joined the Human Genetics Unit of the Indian Statistical Institute as a research scientist. She has been a faculty member in the Department of Biochemistry, University of Calcutta, since 2005. She is a member of the Indian Society of Human Genetics, Society of Biological Chemists and Indian Association of Cancer Research. Her main research interests include host genetics of infectious disease and cancer genomics. Besides, she bears an active interest in the environmental and human metagenomics. Her work has resulted in 30 research publications in peer-reviewed journals.

DR. AMITAVA RAYCHAUDHURI

Dr. Amitava Raychaudhuri, educated at Presidency College, Kolkata and Delhi University, obtained his Ph.D. in particle physics from the University of Maryland, USA. He has held faculty positions at the University of Calcutta for more than thirty years and is the Sir Tarak Nath Palit Professor of Physics since 1996. From 2005-2011 he was the Director of the Harish-Chandra Research Institute, Allahabad under the Department of Atomic Energy, India. Professor Raychaudhuri's research contributions span many areas of particle physics, including the Higgs boson. He is a recipient of several honours and distinctions among which are the Shanti Swarup Bhatnagar Award in 1997 and the International Alumnus of the Year 2005 of the University of Maryland.

DR. SAMIR KUMAR PAL

Dr. Samir Kumar Pal is a Professor at the Dept. of Chemical, Biological & Macromolecular Sciences of S. N. Bose National Centre for Basic Sciences, Kolkata. He did M.Sc. in Physics in 1994 and Ph. D. in 2000 on Laser Spectroscopy (picosecond). During the year 2000 – 2003, he worked as a Post-Doctoral Fellow at California Institute of Technology (CALTECH), U.S.A. under Prof. A. H. Zewail, Nobel Laureate in Chemistry in 1999. He is a Regular Visiting Professor of CALTECH, USA; TU Brunswig, Germany; University Aarhus, Denmark; Durham University, UK; University Leiden, Netherlands etc. His research interests include Ultrafast Spectroscopy of Molecules and Nanomaterials, Solar Devices and Biomedical Instrumentation. 14 students have already obtained their Ph.D. degree (all settled in abroad) and 12 scholars are working for the same under the able guidance of Dr. Pal. He has 170 research publications in international Peer-referred Journals, 5 Books and 14 Patents (including one has been approved). Dr. Pal was awarded with UKERI in 2007 for his work in the field of Nano-science. He is one of the editors of EPJ techniques and Instrumentation (Springer, London), Advances in Physical Chemistry (Hindawi, USA). He has been refereed in nos. of journals such as Nature, Angew. Chem., Journal of the American Chemical Society, Journal of Physical Chemistry, Journal of Chemical Physics, Biochemistry etc.

DR. SWAGATA DAS GUPTA

Dr. Swagata Dasgupta is currently Professor, Department of Chemistry, IIT, Kharagpur. She did her M.Sc. from IIT, Kanpur in 1987 and Ph.D. from Rensselaer Polytechnic Institute, USA in 1994. Her research area includes Protein Chemistry, Protein ligand binding, Protein Structure Analysis. She has published more than 100 research papers in national and international peer reviewed journals. Under her guidance, 16 students have already obtained their Ph.D. degree and 12 students are working for the same. She is an Elected Member, National Academy of Sciences, Allahabad and an editorial board member of Protein and Peptide Letters.

DR. ARUP RATAN DUTTA

Dr. Arup Ratan Dutta is a renowned physician in the field of Nephrology, Dialysis and Transplantation. He has more than 20years of experience and is currently the Chief Nephrologist at Fortis Hospitals, Kolkata. He has been responsible for the growth and maintenance of Haemodialysis programme and has been deeply involved in setting up facilities of HLA typing and Cyclosporine assay in Bellevue Clinic. He has played a key role in popularizing CAPD in India & is one of the founder members of the Peritoneal Dialysis Society of India (PDSI). Dr. Dutta performed Continuous Renal Replacement Therapy techniques (CAVH, CAVHD,CVVHD) & Plasmapheresis for the first time in Kolkata.

DR. NARAYAN PRADHAN

Dr. Narayan Pradhan, passed his M.Sc. in Chemistry from Ravanshaw University, Cuttack and did his PhD from IIT Kharagpur. Then, he performed his post-doctoral research at Ben-Gurion University, Israel and University of Arkansas, USA. In 2007, he joined at the Materials Science Department of Indian Association for the Cultivation of Science, Kolkata. He has received LNJ Bhilwara Research Fellow award for his outstanding research in Nanoscience in 2008 and obtained Swarnajayanti Fellowship from DST, Govt. of India in 2011. Dr. Pradhan works on understanding the chemistry and physics of semiconducting nanomaterials and he has published more than 60 international publications in his area of research.

DR. ARNAB CHAKRABORTY

Dr. Arnab Chakraborty is presently the Assistant Professor at Applied Statistics Unit, Indian Statistical Institute, Kolkata. He did B. Stat and M. Stat from Indian Statistical Institute, Kolkata and Ph.D. from Stanford University, USA. He loves to motivate students to learn mathematics by exploring new ideas. A thorough hater of the routine way adopted in most schools and textbooks to teach mathematics.

DR. DEBIPRASAD DUARI

Dr. D P Duari is presently the Director, Research & Academic of M. P. Birla Institute of Fundamental Research, M. P. Birla Planetarium, Kolkata and Honorary Faculty, Physics Department, Presidency University. He did his B.Sc. & M.Sc. in Physics from Jadavpur University and Ph.D. from Inter University Centre for Astronomy & Astrophysics, Pune. He was a Post Doctoral Fellow of Tata Institute of Fundamental Research. He was associated with a number of distinguished academic institutions including Institute for Advanced Studies, Iran, University of Cambridge, U. K., and Manchester Institute of Science & Technology, U. K. He is a fellow of Royal Astronomical Society and a member of International Astronomical Union.

DR. ABHIJIT KAR

Dr. Abhijit Kar received his Bachelors and Masters in Chemistry. He did his PhD in Science (Chemistry) from Jadavpur University. Dr. Kar has carried out his postdoctoral research in different parts of the world and developed very high aptitude towards cutting edge research. He did his Post Doctoral research at Sungkyunkwan University, South Korea. He has worked at Swiss Federal Laboratory at Zürich, Switzerland. He has also worked as visiting scientist at Interdisciplinary Centre for Advanced Materials Simulation (ICAMS), Rühr Universität, Germany. His current research interest comprises of Application of Nanotechnology for Advanced Materials He has worked on Thermodynamic Modeling using Thermocalc, DICTRA and Phase Field Modeling using MICRESS. He has developed expertise on Different Materials Characterization Techniques e.g: SEM, TEM, XRD, EPMA & Mechanical Property Evaluation of Materials. Dr. Kar has published 33 research papers in SCI Journals and contributed in book chapter on Electron Microscopy and serves as reviewer of many International Peer Reviewed Journals. He is also recipient of National Scholarship and CSIR-SRF. He is currently working as Scientific Officer of JBNSTS and looking after different academic and research activities of JBNSTS and Laboratory set up of JBNSTS. His current research interests include Chemistry of Nanostructured materials and application of nanotechnology in microelectronics.

DR. SMARAJIT MANNA

Dr. Smarajit Manna did his B.Sc. and M.Sc. in Physics. Worked as Junior Research Fellow and Senior Research Fellow at Jadavpur University and Delhi University South Campus respectively and received his Ph.D. degree from Jadavpur University Currently working as Student Advisor at JBNSTS, Kolkata. His research interest includes conduction mechanism through biological membranes and the underlying dynamics. His research interests are Statistical analysis of dynamical systems and Bio-informatics. Dr. Manna has 8 research publications in national and international journals and he is one of the authors of the book chapter "Electrical noise in cells, membranes and neurons in: Understanding Complex Systems", Springer Berlin/ Heidelberg. He is working as Student Advisor of JBNSTS and apart from guiding students he is carrying out different academic and research work. His current research interests include statistical analysis of dynamical systems and Bio-informatics.

DR. ARNAB PRAMANIK

Dr. Arnab Pramanik is presently working as a Research Associate at the Department of Biochemistry, University of Calcutta. He completed Ph.D. in microbiology from Jadavpur University Calcutta. He also did B.Sc. and M.Sc. in microbiology from Vidyasagar University. His areas of expertise are Microbial ecology, Environmental microbiology, Marine biotechnology and Metagenomics. Dr. Pramanik has published many research articles in reputed International journals. He also published book chapters to his credit.

Dr. SATABDI BANERJEE

Dr. Satabdi Banerjee is presently working as a Research Associate at the Department of Biochemistry, Calcutta University. She had completed her B.Sc. in Zoology from Calcutta University and M.Sc. in Environmental Science from Kalyani University. She has obtained Ph.D. degree from University of Kalyani in Environmental Science. Her areas of expertise are Environmental microbiology, Environmental toxicology and Environmental biotechnology. Dr. Banerjee has published many research articles in reputed International Journals during her Ph.D. and Post doctoral studies.

DR. PIJUSH BASAK

Dr. Pijush Basak is presently working as a Research Associate at the Department of Biochemistry, University of Calcutta. He completed Ph.D. in Biochemistry from Calcutta University. He also did B.Sc. and M.Sc. in Microbiology from Calcutta University. His areas of expertise are Protein chemistry and Metagenomics. Dr. Basak has published many research articles in reputed International journals.

"Learning Science"

Day to Day Program

Day 1 : Tuesday, September 15, 2015

09:00 a.m. – 10:00 a.m.	Registration
10:00 a.m. – 11:30 a.m.	Orientation of the participants
11:30 a.m. – 01:00 p.m.	Motivational Lecture Dr. Dhurabajyoti Chattopadhyay, Vice Chancellor, Amity University, Kolkata
01:00 p.m. – 02:00 p.m.	Lunch & Interaction
02:00 p.m. – 06:00 p.m.	"Let's improve your research aptitude – do some active research" Dr. Abhijit Kar, Scientific Officer, Dr. Smarajit Manna, Student Advisor, JBNSTS, Kolkata Dr. Arnab Pramanik, Dr. Pijush Basak & Dr. Satabdi Banerjee; Research Associate, Dept. of Biochemistry, Calcutta University, Kolkata.

Day 2 : Wednesday, September 16, 2015

09:00 a.m. – 10:00 a.m.	Registration
10:00 a.m. – 11:30 a.m.	"Metagenomics, a paradigm shift in microbiology: Concept, Techniques and Applications" Dr. Sanghamitra Sengupta, Assistant Professor Department of Biochemistry, University of Calcutta, Kolkata
11:30 a.m. – 01:00 p.m.	"Inside the Atom: The constituents of matter and their interactions" Dr. Amitava Raychaudhuri, Palit Professor, Department of Physics, Calcutta University, Kolkata
01:00 p.m. – 02:00 p.m.	Lunch & Interaction
02:00 p.m. – 06:00 p.m.	"Let's improve your research aptitude – do some active research" Dr. Abhijit Kar, Scientific Officer, Dr. Smarajit Manna, Student Advisor, JBNSTS, Kolkata Dr. Arnab Pramanik, Dr. Pijush Basak & Dr. Satabdi Banerjee; Research Associate, Dept. of Biochemistry, Calcutta University, Kolkata

Day 3 : Thursday, September 17, 2015

09:00 a.m. – 10:00 a.m.	Registration
10:00 a.m. – 01:00 p.m.	Academic Visit to Birla Industrial and Technological Museum, Kolkata
01:00 p.m. – 02:00 p.m.	Lunch & Interaction
02:00 p.m. – 06:00 p.m.	Academic Visit to Birla Industrial and Technological Museum, Kolkata (Contd..)

Day 4 : Friday, September 18, 2015

09:00 a.m. – 10:00 a.m.	Registration
10:00 a.m. – 11:30 a.m.	"Research for our Country's Independence" Dr. Samir Kumar Pal, Professor, Dept. of Chemical, Biological & Macromolecular Sciences, S. N. Bose National Centre for Basic Sciences, Kolkata
11:30 a.m. – 01:00 p.m.	"A Glimpse into the World of Proteins" Dr. Swagata Das Gupta, Professor, Department of Chemistry, IIT, Kharagpur, Midnapore (W)
01:00 p.m. – 02:00 p.m.	Lunch & Interaction
02:00 p.m. – 03:30 p.m.	"Renal Replacement Therapy: Dialysis and Transplantation" Dr. Arupratan Dutta, Chief-Nephrologist, Fortis Hospital & Kidney Institute, Kolkata
03:30 p.m. – 05:00 p.m.	"Watching the Nanocrystals Growth in Reaction Flask" Dr. Narayan Pradhan, Associate Professor Department of Materials Science, Indian Association for the Cultivation of Science, Kolkata
05:00 p.m. – 06:00 p.m.	Summing up Session

Day 5 : Saturday, September 19, 2015

09:00 a.m. – 10:00 a.m.	Registration
10:00 a.m. – 11:30 a.m.	"Puzzles and Magic with Mathematics" Dr. Arnab Chakraborty, Assistant Professor, Applied Statistics Unit (ASU) Indian Statistical Institute, Kolkata
11:30 a.m. – 01:00 p.m.	"Astronomy and Astrophysics: Concepts and Challenges" Dr. D. P. Duari, Director, Research & Academics, M.P. Birla Inst. of Fundamental Research, M.P Birla Planetarium, Kolkata
01:00 p.m. – 02:00 p.m.	Lunch & Interaction
02:00 p.m. – 06:00 p.m.	Project Presentation by the Participants Judges : • Dr. Parimal Karmakar, Professor, Department of Life science & Bio-technology, J.U., Kolkata • Dr. Debajyoti Ghoshal, Assistant Professor, Inorg. Chem. Sec., Department of Chemistry, J. U., Kolkata