

DST-INSPIRE INTERNSHIP SCIENCE CAMP - 2015



ORGANIZED BY
JAGADIS BOSE NATIONAL SCIENCE TALENT SEARCH,
GOVT. OF WEST BENGAL

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

46th Science Camp Entitled:

“বিজ্ঞান ভাবনা”

June 02 - 06, 2015

At JB Centre of Excellence for Student – Scientists

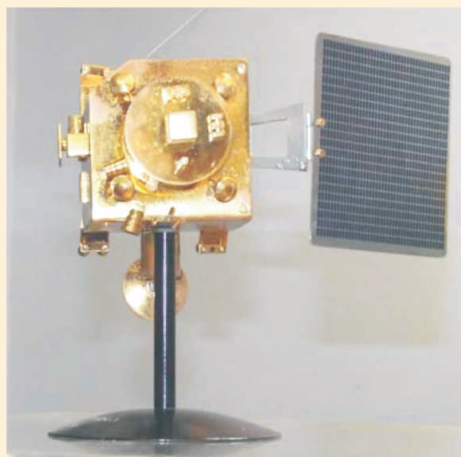


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“বিজ্ঞান ভাবনা”

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)¹ 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:

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.

1. 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.

2. 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.

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:

- 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.
- 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.
- 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 (KV PY), 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.

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.

1. 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.

2. 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.



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 Coordinators:

Mr. Dipankar Sarkar, Library Assistant, JBNSTS
Mr. Joydip Das, Asst. Director (Admin), JBNSTS

Mentors

Dr. Maitree Bhattacharyya

Professor & Director
Jagadis Bose National Science Talent Search, Kolkata

Dr. Tapas Kr. Kundu

Professor, Molecular Biology & Genetics
Jawaharlal Nehru Centre for Advanced Scientific Research,
Bangalore

Dr. Sujay Ghosh

Associate Professor
Department of Endocrinology & Metabolism
Institute of Post Graduate Medical Education and Research, Kolkata

Dr. Sanghamitra Sengupta

Assistant Professor, Department of Biochemistry
University of Calcutta, Kolkata

Dr. Somak Raychaudhury

Professor and Head, Department of Physics
& Dean of Faculty of Natural and Mathematical Sciences
Presidency University, Kolkata

Dr. Siddhartha Roy

Senior Professor and Dean of Studies
& J C Bose National Fellow
Bose Institute, Kolkata



Dr. Aniruddha Mukhopadhyay

Associate Professor and Head
Department of Environmental Science
University of Calcutta, Kolkata

Dr. Bhupati Chakrabarti

Former Associate Professor, Department of Physics
City College (Main), Kolkata

Dr. Arnab Chakraborty

Assistant Professor, Applied Statistics Unit (ASU)
Indian Statistical Institute, Kolkata

Dr. Sanatan Chattopadhyay

Associate Professor
Department of Electronic Science
University of Calcutta, Kolkata

Dr. Abhrajyoti Ghosh

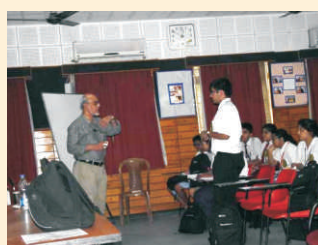
Ramanujan Fellow, Department of Biochemistry
Bose Institute, Kolkata

Dr. Abhijit Kar

Scientific Officer, JBNSTS, Kolkata

Dr. Smarajit Manna

Student Advisor, JBNSTS, Kolkata



CAMP RULES

Welcome to the 46th Science Camp of JBNSTS entitled “বিজ্ঞান ভাবনা”

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 on the last day. 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:

- All the participants are required to submit an attested copy of your 10th Standard Board Examination Mark Sheet, Registration Form endorsed by your Headmaster/ Headmistress on **1st June, 2015** at the time of arrival.
- Filled-in Student’s Information Sheet has to be submitted by the participants during morning registration on **3rd June, 2015**.
- 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, on **3rd June, 2015** during morning registration.
- **TRAVEL BILL** : Travel bill (School wise) has to be submitted along with relevant documents (tickets etc.) on **3rd June, 2015** during morning registration.
- All the participants are required to fill up the FEED BACK SHEET and submit it on **6th June, 2015** during lunch break.

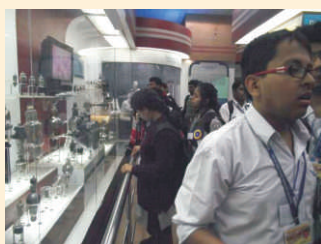
Reimbursements:

- Reimbursement for Travel Expenses and Book Grant (school wise) will be made on **5th June, 2015** during **5.00 p.m. – 6.00 p.m.** In case, any payment related assistance / clarifications are needed, you may contact our accounts section.

On the last day i.e. 6th June, 2015 you will receive the Participation Certificate.

List of Participating Schools

- | | |
|---|---|
| <ul style="list-style-type: none"> ● Ramakrishna Mission Vidyapith, Purulia ● Purulia Govt. Girls’ High School, Purulia ● Bankura Girls’ High School, Bankura ● Kenduadihi High School, Bankura ● Bankura Barjora High School, Bankura | <ul style="list-style-type: none"> ● Patrasayer B. G. Institution, Bankura ● Krishnagar Collegiate School, Nadia ● Krishnagar Govt. Girl’s High School, Nadia ● Kamarhati Chittaranjan High School, Nadia |
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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 and 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. TAPAS KR. KUNDU

Tapas K. Kundu was awarded his PhD from the Indian Institute of Science, Bangalore, in the year 1995. Following his PhD, he had a short stint as a visiting foreign research associate in the National Institute of Genetics, Mishima, Japan, followed by a post-doctoral fellowship at the Rockefeller University, USA (1996-99). He joined JNCASR as in 1999. Prof. Kundu has made outstanding contributions in the area of regulation of gene expression and its link to disease and therapeutics. He is not only elucidating the mechanisms of transcription regulation through the epigenetic modifications, but also targeting them to design new generation diagnostics, as well as therapeutics. Over the years, he has published several research papers in many international journals. Several patent applications from the laboratory have been granted and some are under process, which includes several academically important research reagents with potential commercial values, some of which have already been commercialized by renowned companies. He is the recipient of several awards, noteworthy among which are: the Shanti Swarup Bhatnagar prize from CSIR (2005), the National Academy of Science, India- Reliance Industries Platinum Jubilee Award (2008), the Sir JC Bose National Fellowship from DST (2010), the GD Birla award for scientific research (2011) and more recently “The Ranbaxy Research Award 2011 in the field of Medical Sciences – Basic Research” and “India Innovation Award 2012” given by Merck Millipore 2012 (First place). He is the fellow of three major national academies of India and an editorial board member of the Journal of Biological Chemistry (JBC). Besides fundamental research, Prof. Kundu is also involved in teaching and organizing science outreach programs. His popular lectures on ‘Genes, Disease and Therapeutics’ have benefitted high school and college students greatly.

DR. SUJAY GHOSH

Dr. Sujoy Ghosh has recently returned to India and is currently working as Associate Professor of Endocrinology at Institute of Post Graduate Medical Education & Research Calcutta. He was working as a Clinical Teacher & Clinical Research Fellow at Ayr Hospital, Scotland, U.K., under University of Glasgow. He undertook his undergraduate, post-graduate and post-doctoral training from University of Calcutta, India. He has won several awards (including University Gold medal) during his undergraduate, post-graduate & post-doctoral training. He stood first in the University both at the post-graduate & post-doctorate level University examinations. He won University awards & Association of Physicians of India award for his academic excellence during his training at the University of Calcutta. He also won national award for research for his post-graduate dissertation. He moved to the United Kingdom in 2005 and obtained his M.R.C.P & M.R.C.P.S in 2007 and has been awarded FRCP in 2012 and FACE in 2013. He also achieved Specialty Certificate in Endocrinology & Diabetes (U.K.) in 2009. Dr. Ghosh has played a significant role in delivery of both undergraduate & post-graduate education at University of Glasgow. He has been actively involved in research. His main areas of interest has been parathyroid disorders, metabolic syndrome & wound healing in diabetes. In recent times he has won several awards for his research in the field of Diabetes & Endocrinology. These include the best research paper award in bone metabolism at the European Endocrine Society meeting 2009, best research paper at the triennial conference of the Royal college of Physicians & Surgeons Glasgow 2008, best research poster award at the Royal Medico-Chirurgical society of Glasgow 2007 & runners up award for research in Diabetes (Eli-lily award) 2010. He has published over 250 articles and has contributed to chapters in books and is co-author of 5 books.

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. SIDDHARTHA ROY

Dr Siddhartha Roy is presently the Senior Professor and Dean of Studies at the Bose Institute, Kolkata. He is the former Director of Indian Institute of Chemical Biology. He was associated with the scientific research in Structural Biology & Bio-Informatics Division of that institute. He did his Ph.D. from University of Delaware; Newark, F.N.A, F.A.Sc. In his academic career, he received several awards/fellowships like J C Bose National Fellowship, Meritorious Service Award in 1986 from Dept. of Health & Human Service USA, Human Frontier Services Fellowship in 1993 and the Santi Swarup Bhatnagar Prize in 1999. His current research interests include Macromolecular Interaction: Recognition and Engineering and Drug Development. He has numerous scientific publications in renowned journals.

DR. SOMAK RAYCHAUDHURY

Dr. Somak Raychaudhury is currently the Dean of Science and the Head of Physics at Presidency University. He graduated from Presidency College, after which he studied Physics at Trinity College, University of Oxford, and did his PhD in Astrophysics at the University of Cambridge. He then moved to Harvard University in Cambridge, Mass, where he was part of the team that built the Chandra X-Ray Observatory, now in orbit in Space. He was also a member of the faculty at the Inter-University Centre for Astronomy and Astrophysics, Pune, for several years, before moving to the School of Physics and Astronomy at the University of Birmingham, UK, where he taught for 12 years. Dr Raychaudhury has been Professor of Physics at Presidency University since 2012.

DR. ANIRUDDHA MUKHOPADHYAY

Dr. Aniruddha Mukhopadhyay is presently the Head/Incharge of Department of Environmental Science, University of Calcutta and has been teaching for more than the last two decades. After completion of his graduation and master's from University of Calcutta he was awarded the D. N. Roy Chowdhury Gold Medal for his results in post graduation. He had also completed his M. Phil. in Environmental Science from University of Calcutta. He had qualified UGC NET (Life Science) in 1986 and pursued his Doctoral Studies from University of Calcutta. He had also qualified in the Forest Service but did not join. He had carried out his post doctoral research in USA. He has published around a hundred national and international research publications and edited five books to his credit. Recently he has been elected as Fellow of West Bengal Academy of Science and Technology (FAScT). Currently he is the Chairman of the UG board of studies in Environmental Science, University of Calcutta and member of several other Board of Studies of other Universities, in state and outside. He has supervised doctoral students and been in research collaborations with research institutes and other Universities both at national and international level. He is a member of different committees instituted by the Government Agencies. His research interests include areas like environmental biotechnology, toxicology and ecology.

DR. BHUPATI CHAKRABARTI

Dr. Bhupati Chakrabarti was awarded Ph.D. in 1983 by the University of Calcutta for his work in experimental condensed matter physics done at the Indian Association for the Cultivation of Science, Kolkata. He was a National Science Talent Scholar (NSTS) and taught for nearly 32 years, first in Chakdaha College and then in City College, Kolkata. Dr. Chakrabarti served as the departmental head in both the colleges. He is a very active writer on popular science and in the areas of physics education and has published more than 35 papers and 200 articles in different scientific journals and periodicals. He is actively involved in the training and selection of the Indian students who represent the country in International and Asian Physics Olympiads. Dr Chakrabarti is the General Secretary of Indian Association of Physics Teachers an all-India body of physics teachers that works for the betterment of physics teaching and learning at all levels and has more than 7000 life members.

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. 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), Ruhr 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.

Day to Day Program

Day 1 : Tuesday, June 02, 2015

- 09:00 a.m. – 10:00 a.m. Registration
10:00 a.m. – 11:00 a.m. **Welcome Address by the Director, JBNSTS and Orientation of the participants**
11:00 a.m. – 12:30 p.m. **“Epigenetics and Cancer: Genes, habit and disease”**
Dr. Tapas Kr. Kundu, Professor, Molecular Biology & Genetics
Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore
12:30 p.m. – 01:30 p.m. Lunch & Interaction
01:30 p.m. – 06:00 p.m. **“Let’s improve your research aptitude – do some active research”**
Dr. Abhijit Kar, Scientific Officer, JBNSTS & **Dr. Smarajit Manna**, Student Advisor, JBNSTS, Kolkata

Day 2 : Wednesday, June 03, 2015

- 09:00 a.m. – 10:00 a.m. Registration
10:00 a.m. – 11:30 a.m. **“Curiosity- A miracle that survives formal education!”**
Dr. Sujay Ghosh, Associate Professor, Department of Endocrinology & Metabolism
Institute of Post Graduate Medical Education and Research, Kolkata
11:30 a.m. – 01:00 p.m. **“The New Science of Metagenomics: Concept, Techniques and Applications”**
Dr. Sanghamitra Sengupta, Assistant Professor, Department of Biochemistry University of Calcutta, Kolkata
01:00 p.m. – 02:00 p.m. Lunch & Interaction
02:00 p.m. – 03:00 p.m. **“How to Find Black Holes”**
Dr. Somak Raychaudhury, Professor & Head, Department of Physics
& Dean of Faculty of Natural and Mathematical Sciences, Presidency University, Kolkata
03:00 p.m. – 06:00 p.m. **“Let’s improve your research aptitude – do some active research”**
Dr. Abhijit Kar, Scientific Officer, JBNSTS & **Dr. Smarajit Manna**, Student Advisor, JBNSTS, Kolkata

Day 3 : Thursday, June 04, 2015

- 09:00 a.m. – 10:00 a.m. Registration
10:00 a.m. – 11:30 a.m. **Motivational Lecture**
Dr. Siddhartha Roy, Senior Professor and Dean of Studies, Bose Institute, Kolkata
11:30 a.m. – 01:00 p.m. **“Achieving Green Environment for a Sustainable Future”**
Dr. Aniruddha Mukhopadhyay, Associate Professor and Head
Department of Environmental Science, University of Calcutta, Kolkata
01:00 p.m. – 02:00 p.m. Lunch & Interaction
02:00 p.m. – 06:00 p.m. **“Understanding the Physics of Oscillations through Hands-on Experiments” &**
“Non Destructive Testing: An Introduction to Mechanical Black Boxes”
Dr. Bhupati Chakrabarti, Former Associate Professor, Department of Physics, City College (Main), Kolkata

Day 4 : Friday, June 05, 2015

- 09:00 a.m. – 10:00 a.m. Registration
10:00 a.m. – 01:00 p.m. **Educational visit to Birla Industrial & Technological Museum, Kolkata**
01:00 p.m. – 02:00 p.m. Lunch & Interaction
02:00 p.m. – 06:00 p.m. **Educational visit (continued) at Birla Industrial & Technological Museum, Kolkata**

Day 5 : Saturday, June 06, 2015

- 09:00 a.m. – 10:00 a.m. Registration
10:00 a.m. – 11:30 a.m. **“Puzzles and magics using mathematics”**
Dr. Arnab Chakraborty, Assistant Professor, Applied Statistics Unit (ASU)
Indian Statistical Institute, Kolkata
11:30 a.m. – 01:00 p.m. **Project Presentation by the Participants**
Judges Panel:
· **Dr. Sanatan Chattopadhyay**, Associate Professor, Dept. of Electronic Science, Calcutta Univ.
· **Dr. Abhrajyoti Ghosh**, Ramanujan Fellow, Department of Biochemistry, Bose Institute, Kolkata
01:00 p.m. – 02:00 p.m. Lunch & Interaction
02:00 p.m. – 06:00 p.m. **Project Presentation by the Participants (Continuation of the previous session)**

