

# DST-INSPIRE INTERNSHIP SCIENCE CAMP - 2014



Department of Science & Technology  
Govt. of India

*In association with*



Jagadis Bose National Science Talent Search  
Govt. of West Bengal

**41<sup>st</sup> Science Camp Entitled:**

**“বিজ্ঞান ও আমরা”**

**April 22 - 26, 2014**

**At JB Centre of Excellence for Student – Scientists**



**Jagadis Bose National Science Talent Search,**

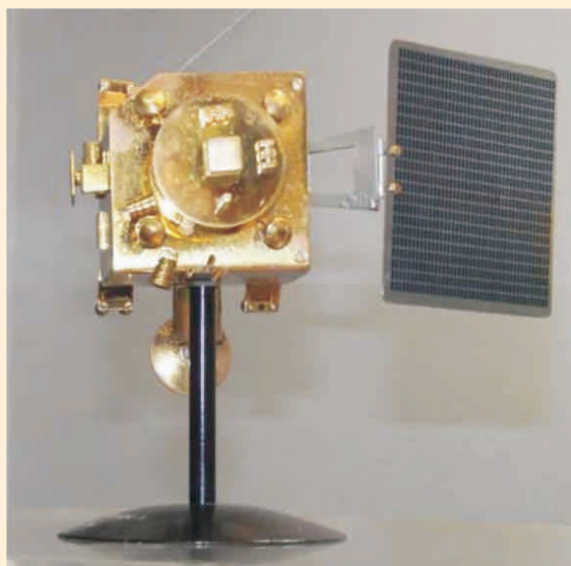
1300, Rajdanga Main Road, Kasba, Kolkata – 700 107

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

E-mail: [jbnsts@vsnl.com](mailto:jbnsts@vsnl.com); Website : <http://www.jbnsts.org>

## 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)<sup>1</sup> 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:**

**A. 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.

**B. 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 (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.

**C. 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.) Papiya Nandy, Hony. Director, JBNSTS  
Dr. Paromita Roy, Dy. Director, JBNSTS  
Dr. Abhijit Kar, Scientific Officer, JBNSTS  
Dr. Smarajit Manna, Student Advisor, JBNSTS

### **Camp Coordinators:**

Shri Joydip Das, Asst. Director (Admin), JBNSTS  
Ms. Sucharita Kundu

### **Mentors**

#### **Prof. Rattan Lal Hungloo**

Vice Chancellor  
Kalyani University, Nadia

#### **Dr. Subhrangsu Aditya**

School of Bio Science & Engineering  
and School of Cognitive Science  
Jadavpur University, Kolkata

#### **Dr. D. P. Duari**

Director, Research & Academics  
M. P. Birla Planetarium  
Kolkata

#### **Prof. Kalyan Kumar Mukherjee**

Former Professor  
Division of Plant Biology, Bose Institute, Kolkata

#### **Dr. Gaurab Gangopadhyay**

Associate Professor,  
Division of Plant Biology, Bose Institute, Kolkata

#### **Prof. Partha Deb Ghosh**

Senior Professor  
Department of Botany, Kalyani University, Nadia

#### **Dr. Anjan Ghosh**

Vice President  
Total Quality Management  
Exide Industries Ltd, Kolkata



#### **Prof. Biman Bagchi**

Amrut Mody Professor  
Solid State Chemistry Unit  
Indian Institute of Sciences  
Bangalore

#### **Dr. Arindam Rana**

Associate Professor  
Dept. of Chemistry, City College, Kolkata

#### **Dr. Parthasarathi Mukhopadhyay**

Associate Professor  
Department of Mathematics  
Ramkrishna Mission Residential College,  
Narendrapur, Kolkata

#### **Shri Samar Bagchi**

President  
Kishore Bharati Development Society, Kolkata

#### **Dr. Mrinal Pal**

Principal Scientist, CSIR-CMERI  
Center For Advanced Materials Processing Dept.  
Central Mechanical Engineering Research Institute  
Durgapur, Burdwan

#### **Prof. Abhijit Chakrabarti**

Vice Chancellor  
Jadavpur University, Kolkata

#### **Dr. Paromita Roy**

Deputy Director  
JBNSTS, Kolkata

## CAMP RULES

### Welcome to the Science Camp “বিজ্ঞান ও আমরা”

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.

#### Please note the following points carefully :

1. The camp hours are from 09:00 a.m. to 6:00 p.m. In order to get Participation Certificate, you are required to attend all the sessions. You are to come in your school uniform.
2. You are required to submit an attested copy of your X<sup>th</sup> Standard Board Examination Mark Sheet, held in 2013 during the morning registration on 23<sup>rd</sup> April, 2014 at registration desk.

You are required to fill up the STUDENT'S INFORMATION SHEET & one Passport Size Photograph and submit it on 24<sup>th</sup> April, 2014 during morning registration at registration desk. You are also required to fill up the FEED BACK SHEET & submit it on 26<sup>th</sup> April, 2014 between 01.00 p.m. to 02.00 p.m.

#### 3. TRAVEL BILL :

**Residential Students & Accompanying Teachers:** Travel bills (bus, auto and / or train fare only) are to be submitted along with relevant documents (tickets) on 22<sup>nd</sup> April, 2014 by the escorting teachers. Your reimbursement will be made on 26<sup>th</sup> April, 2014. In case, any assistance / clarification are needed, you may contact our accounts section.

**Non-residential Students:** Travel bills (bus, auto and / or train fare only) are to be submitted on 25<sup>th</sup> April, 2014 during morning registration at registration desk. Your reimbursement will be made on 26<sup>th</sup> April, 2014 between 01.00 p.m. to 02.00 p.m.

4. **BOOKGRANT :** You will get a book grant of Rs. 1,500/-. For that you have to purchase books and submit the original bills at JBNSTS office : -

**Residential Students:** Book bill(s), authorized by respective Headmaster/ Headmistress, are to be submitted on 22<sup>nd</sup> April, 2014. Your reimbursement will be made on 26<sup>th</sup> April, 2014.

**Non-residential Students:** Book bill(s), authorized by respective Headmaster/ Headmistress, are to be submitted on 25<sup>th</sup> April, 2014 during morning registration at registration desk. Your reimbursement will be made on 26<sup>th</sup> April, 2014 between 01.00 p.m. to 02.00 p.m.

5. All the participants will be divided into teams. There will be a team leader for each team selected by team members of each team.
6. You will not be given any home work, but you are expected to interact freely with the experts, your team members and other teams.

On the last day i.e. 26<sup>th</sup> April, 2014 you will receive the Participation Certificate.

#### **Name of the participating schools:**

- Krishnanagar Collegiate School, Nadia
- Barrackpore Govt. High School, N 24 pgs
- Sodepur High School, N 24 pgs
- Barasat P C S Govt. High School, N 24 pgs
- Bidhannagar Govt. High School, Kolkata
- Dum Dum Ananda Ashram Sarada Vidyapith, Kolkata
- Bethune Collegiate School, Kolkata
- Dr. Shyamaparasad Mukherjee Institution, Kolkata
- Binodini Girls' High School, Kolkata
- Jadavpur N. K. Paul Adarsha Shikshaniketan, Kolkata
- Holy Child Girl's High School, Nadia
- Kabi Bijoylal H.S. Institute, Nadia



## **BRIEF INTRODUCTION TO THE EXPERTS**

### **DR. PAPIYA NANDY**

Prof. Papiya Nandy received her Masters degrees in Physics from University of Calcutta and University of California at Santa Barbara and Ph.D. on Liquid Crystals from Kent State University, USA. Her post-doctoral work was in Experimental Biophysics from Max Planck Institute, Göttingen, Germany. Later she was Associate Professor of Physics in University of Ulm, Germany. After coming back to India, she joined Physics department in Jadavpur University. Her field of research encompasses membrane biophysics. She is currently the Hony. Director of JBNSTS, of which she is a scholar from the first batch in 1960. Here her objective is to make JBNSTS a vibrant and dynamic institute and to motivate, identify and nurture young talented science students and establish the base of scientific enquiry and culture of tomorrow.

### **DR. RATTAN LAL HUNGLOO**

Prof Rattan Lal Hangloo is the Vice-Chancellor of the Kalyani University, West Bengal. Prof Hangloo obtained his M.Phil and Ph.D from the Jawaharlal Nehru University, New Delhi. He is a specialist on Indian and Central Asia History, Politics and Culture. Previously he has been associated with Department of History, Central University, Hyderabad as a professor. He has been awarded several prestigious fellowships, including Senior Fulbright Fellowship by the United States of America, DAAD Fellowship by Germany; visiting fellowship (twice) by Maison des Sciences del homme of Paris. He was also visiting professor at Various Universities which includes: University of Delaware (USA), University of Michigan (USA), Heidelberg University of Germany, Bamberg University of Germany, Berlin University of Germany, Ashkabad University of Turkmenistan, Tbilisi State University of Georgia and several other institutions and Universities. He has published over 100 papers in national and international journals and more than half a dozen books. Professor Hangloo has been invited to various national and international seminars and conferences all over the world. He is member of many national and international organizations, both government and non-government in India. He has guided more than a dozen candidates for PhD and 30 M.Phil scholars.

### **DR. SUBHRANGSU ADITYA**

Subhrangsu Aditya, M.B.B.S. from NRS Medical College (2000), senior JBNSTS scholar (1995) is currently pursuing his research at School of Bio Science & Engineering, Jadavpur University and he is a guest faculty for the M. Phil. Course in Cognitive Science in the School of Cognitive Science, Jadavpur University. He is also a guest faculty for the Advanced Diploma Course in Stress Management in the Center for Counseling Services and Studies in Self-Development, Jadavpur University (CCSSS-JU). He is an associate member of SAMIKSHANI Centre for Psychoanalytical Studies and Mental Therapy. He has publications in various international journals, conference proceedings and book chapters. His current areas of interest are Cognitive Neuroscience, Biosignal Processing, Artificial Intelligence, Psychological Counselling, Stress Management, Cyber-relationship etc.

### **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. KALYAN KUMAR MUKHERJEE**

Prof. Kalyan K. Mukherjee was the Senior Professor at Department of Botany, Bose Institute, Kolkata. He has received his Ph.D from University of Calcutta. His field of research encompasses resource survey analysis of wild gene pool for isolation and characterization of novel chemical compounds and / or useful traits for subsequent introgression into the existing cultigen either through conventional breeding or biotechnological approach. Understanding species relationship & the mode of speciation and evolution of chenopodiaceous plants was his another field of research. He has received various prestigious awards and has more than fifty research publications in peer reviewed journals.

### **DR. GAURAB GANGOPADHYAY**

Dr. Gangopadhyay, presently Associate Professor, Division of Plant Biology, Bose Institute, Kolkata is in the field of research for last 24 years. After graduating from Presidency College, Kolkata and post graduation in Botany (University of Calcutta) he did his doctoral work from Bose Institute. He has a Post Doctoral Research experience of twelve years. Dr. Gangopadhyay has over 50 research publications, 48 NCBI GenBank submissions and 1 patent till date. He acts as reviewer for a number of national and international peer-reviewed scientific journals and also evaluator of Ph.D. thesis and research projects. Dr. Gangopadhyay's present area of research interest is Plant Genetics, Marker Assisted Breeding, Plant Biotechnology and Molecular Biology.

### **DR. PARTHA DEB GHOSH**

Prof. Partha Deb Ghosh is the Senior Professor of Botany at the Department of Botany, University of Kalyani, West Bengal and worked in the field of plant genetics and Biotechnology. He has done extensive work on in vitro culture, genetic transformation of plants, molecular markers and supervised research of Masters and Doctoral students. He has published 3 books/ manuals on plant genetics and biotechnological aspects and published more than 270 research papers in different national and international journals. Prof. Ghosh has availed fellowship offered by UGC Indo-Uk exchange programme (1977-78), DST young scientist awards(1984), DBT training programme. He is fellow of Linnean Society (London), Association of Plant Tissue Culture and Biotechnology (India). Prof. Ghosh has been awarded the INSA gold medal for outstanding contribution of plant tissue culture and mutation research, life time achievement Award by DST and honoured by different universities.

#### DR. ANJAN GHOSH

Dr. Anjan Ghosh, a JBNSTS Scholar of 1970, got the Senior Cambridge degree from Calcutta Boys' School in 1969. He did his B.Sc. with Physics honors and B.Tech. in Instrumentation and Electronics Engineering from Jadavpur University and M.B.A. from Indian Institute of Social Welfare and Business Management. Then he turned into science journalism. He was the author of the science column of the Sunday Miscellany supplement of The Statesman. He is presently the Vice President, Total Quality Management, Exide Industries Limited, Kolkata.

#### DR. BIMAN BAGCHI

Prof. Biman Bagchi, PhD (Brown), FNA, FASc, FNASc is the Amrut Mody Professor at Solid State Chemistry Unit, Indian Institute of Science, Bangalore. His current research interests cover a wide range of problems in the area of Condensed Matter Physical Chemistry and Chemical Physics like Protein-DNA interaction, Enzyme kinetics, Dynamics of protein folding and energy landscape, Dynamics of water molecules in biological systems, Relaxation in liquid crystals, Polymer dynamics, Förster energy transfer in dyes and nano metal particles, Relaxation in supercooled liquids and binary mixtures, Phase transition and nucleation phenomena, Ultra-fast chemical reactions, and Electrical conductivity and viscosity of electrolyte solutions. He has received various prestigious awards and honors. He has several publications in various national and international journals.

#### DR. ARINDAM RANA

Dr. Arindam Rana is presently Associate Professor of Chemistry at City College, Kolkata. He did his M.Sc from Calcutta University, Ph.D. research at IACS, Kolkata and received Ph. D degree from Jadavpur University. He went to Univ. of Notre Dame, Indiana, USA for post doctoral research. He has 6 papers in International journals. In his academic career he occupied several positions such as honorary guest faculty in chemistry at the HS section of St. Lawrence High School & Mahadevi Birla Sisu Vihar. Dr. Rana is actively engaged in science outreach programmes of Ratnasagar Pvt. Ltd. He has recognized by TIFR as one of the most inspiring teachers on the occasion of the birth centenary of Homi J. Bhabha in 2009.

#### DR. PARTHASARATHI MUKHOPADHYAY

Dr. Parthasarathi Mukhopadhyay is the Associate Professor of Mathematics in Ramkrishna Mission Residential College, Narendrapur. He is also a guest faculty (Post Graduate) at Ramkrishna Mission Vidyamandir, Belur Math. Dr. Mukhopadhyay is M.Sc. in Pure Mathematics and also has completed M.Phil & Ph.D in Mathematics from C.U in the year 1991 & 2000 respectively. He published lot of papers in National & International Journals. He also published books for undergraduate level and school level. He attended many conferences & seminars at National & International level. He is a life time member of the Calcutta Mathematical Society.

#### SHRI SAMAR BAGCHI

Shri Bagchi is presently the President of Kishore Bharati Development Society. He is the former Director of Birla Industrial & Technological Museum and at that time another 5 science museums in eastern India were under his jurisdiction. He is connected with science popularization and is a board member of several educational institutions. Shri Bagchi has organized the popular science quiz program "Quest" in Doordarshan from 1983 – 88. In 1992, he has got National Award for his contribution in Science Popularization through Mass Medium. He is a member of the Advisory Committee in NCERT and Council of Science & Technology, Govt. of W. Bengal. He is also an environmental & social activist.

#### DR. MRINAL PAL

Dr. Mrinal Pal has received his Ph.D from the IACS (Jadavpur University) and Master from Calcutta University. He has been short term postdoctoral fellow at University of Roma, Italy and successfully completed two years postdoctoral fellowship at Japan. He visited Kotelnikov Institute of Radio-engineering and Electronics, Fryazino, Moscow, for one week under the framework of an Indo-Russian project. He joined in the Department of Physics, University of Burdwan in 2002 as a Lecturer. He joined as Scientist E11 in the CAMP division at CMERI Durgapur in 2010. Dr. Pal is the recipient of the CSIR fellowship (JRF) of Govt. of India and JISTEC fellowship (STA) of Govt. of Japan. He has more than 45 publication in standard International and National journals. Dr. Pal is currently involved in preparation and characterization of different types of Nano-crystalline materials and executing several projects as Principal Investigator.

#### DR. ABHIJIT CHAKRABARTI

Prof. Chakrabarti presently is the Vice Chancellor of Jadavpur University, Kolkata. He was the Senior Professor and HOD of Dept. of Electrical Engineering at Bengal Engineering and Science University, Shibpur, Howrah. He has received various prestigious awards and has more than hundred research publications in national and international journals.

#### DR. PAROMITA ROY

Dr. Paromita Roy did her Bachelors in Psychology (with special paper in family counseling), as well as in Masters in Industrial Psychology and Organizational Behavior from Delhi University. She received her PhD from Delhi University in Clinical Psychology and worked in the field of cognitive deficits in schizophrenia from Delhi University. Dr. Roy has extensive field experience in the area of clinical psychology. Her expertise is in educational psychology, soft skill training, human resource development, curriculum planning, strategy development, pedagogy, teacher training and student counseling. She has been with JBNSTS since 1993. Her focus is on educational paradigms with a socio-holistic view. With her long experience with creative science students and teachers, she has been instrumental in designing tailor made science enrichment programs.

**Day to Day Program**

**Day 1 : Tuesday, April 22, 2014**

|                         |  |
|-------------------------|--|
| 09:00 a.m. – 10:00 a.m. | Registration   |
| 10:00 a.m. – 11:30 a.m. | Welcome Address by the Hony. Director, JBNSTS and Orientation  |
| 11:30 a.m. – 01:00 p.m. | <b>Motivational Lecture</b><br><b>Prof. Rattan Lal Hungloo</b> , Vice Chancellor, Kalyani University, Nadia  |
| 01:00 p.m. – 02:00 p.m. | Lunch & Interaction  |
| 02:00 p.m. – 03:30 p.m. | <b>“Recent Concepts in Astronomy and Astrophysics”</b><br><b>Dr. D. P. Duari</b> , Director, Research & Academics, M.P. Birla Planetarium, Kolkata |
| 03:30 p.m. – 05:00 p.m. | <b>“How to choose your career?”</b><br><b>Dr. Subhrangshu Aditya</b> , School of Bio-sc. & Eng. and School of Cognitive Sc., Jadavpur University   |
| 05:00 p.m. – 06:00 p.m. | <b>Summing up Session</b>  |

**Day 2 : Wednesday, April 23, 2014**

|                         |  |
|-------------------------|--|
| 09:00 a.m. – 10:00 a.m. | Registration   |
| 10:00 a.m. – 01:00 p.m. | <b>“Plant Life Processes – A Demonstrative Lecture”</b><br><b>Prof. Kalyan Kumar Mukherjee</b> , Formerly of Division of Plant Biology, Bose Institute, Kolkata<br><b>Dr. Gourab Gangopadhyay</b> , Division of Plant Biology, Bose Institute, Kolkata |
| 01:00 p.m. – 02:00 p.m. | Lunch & Interaction  |
| 02:00 p.m. – 05:00 p.m. | <b>“Cellular Division and Cell Cycle”</b><br><b>Prof. Partha Deb Ghosh</b> , Department of Botany, Kalyani University, Nadia   |
| 05:00 p.m. – 06:00 p.m. | <b>Summing up Session</b>  |

**Day 3 : Thursday, April 24, 2014**

|                         |  |
|-------------------------|--|
| 09:00 a.m. – 10:00 a.m. | Registration   |
| 10:00 a.m. – 11:30 a.m. | <b>“Creativity – Learning From Nature”</b><br><b>Dr. Anjan Ghosh</b> , Vice President, Total Quality Management, Exide Industries Ltd, Kolkata                                       |
| 11:30 a.m. – 01:00 p.m. | <b>“Voyage Through Space and Time : View of Chemical Dynamics at Small Scales”</b><br><b>Prof. Biman Bagchi</b> , Amrut Mody Professor, Solid State Chemistry Unit, IISc., Bangalore |
| 01:00 p.m. – 02:00 p.m. | Lunch & Interaction  |
| 02:00 p.m. – 05:00 p.m. | <b>“Chemistry Revealed Through Experiments”</b><br><b>Dr. Arindam Rana</b> , Dept. of Chemistry, City College, Kolkata   |
| 05:00 p.m. – 06:00 p.m. | <b>Summing up Session</b>  |

**Day 4 : Friday, April 25, 2014**

|                         |   |
|-------------------------|---|
| 09:00 a.m. – 10:00 a.m. | Registration  |
| 10:00 a.m. – 01:00 p.m. | <b>“History of Calculus” and “ZERO - The Eternal Enigma”</b><br><b>Dr. Parthasarathi Mukhopadhyay</b> , Dept of Math., R K M Res. College, Narendrapur, Kolkata |
| 01:00 p.m. – 02:00 p.m. | Lunch & Interaction   |
| 02:00 p.m. – 05:00 p.m. | <b>“Demonstration of Science Experiments”</b><br><b>Shri Samar Bagchi</b> , President, Kishore Bharati Development Society, Kolkata                             |
| 05:00 p.m. – 06:00 p.m. | <b>Summing up Session</b>   |

**Day 5 : Saturday, April 26, 2014**

|                         |   |
|-------------------------|---|
| 09:00 a.m. – 10:00 a.m. | Registration  |
| 10:00 a.m. – 11:30 a.m. | <b>“Renewable Energy for Sustainable Future”</b><br><b>Dr. Mrinal Pal</b> , Principal Scientist, CSIR-CMERI, Durgapur |
| 11:30 a.m. – 01:00 p.m. | <b>“Motivational Lecture”</b><br><b>Prof. Abhijit Chakrabarti</b> , Vice Chancellor, Jadavpur University, Kolkata     |
| 01:00 p.m. – 02:00 p.m. | Lunch & Interaction   |
| 02:00 p.m. – 05:00 p.m. | <b>Project Presentation</b>   |
| 03:00 p.m. – 05:00 p.m. | <b>“Parents’ Counseling”</b><br><b>Dr. Paromita Roy</b> , Deputy Director, JBNSTS, Kolkata                            |
| 05:00 p.m. – 06:00 p.m. | <b>Summing up Session</b>   |