

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

45th Science Camp Entitled:

“Learning Science”

March 24 - 28, 2015

At JB Centre of Excellence for Student – Scientists



Jagadis Bose National Science Talent Search,
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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 :

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 (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.

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.



“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 Coordinators:

Mr. Dipankar Sarkar, Library-in-charge, JBNSTS
Mr. Joydip Das, Asst. Director (Admin), JBNSTS

Mentors

Dr. L S Shashidhara

Professor and Head, Biology Department &
Dean of Research & Faculty
Indian Institute of Science Education and Research, Pune

Dr. Bimalendu Bhusan Bhattacharya

INAE Distinguished Professor
S.N. Bose National Centre for Basic Sciences
Salt Lake, Kolkata

Dr. Avijit Lahiri

Associate Professor
Department of Physics
Vidyasagar Evening College, Kolkata

Dr. Samita Basu

Professor, Chemical Science Division
Saha Institute of Nuclear Physics
Salt Lake, Kolkata

Dr. Subhamoy Maitra

Professor, Applied Statistics Unit,
Indian Statistical Institute, Kolkata

Mr. Partha Pratim Roy

Physics Teacher
South Point High School, Kolkata

Dr. Soumitra SenGupta

Senior Professor, Department of Theoretical Physics
Indian Association for the Cultivation of Sciences Jadavpur, Kolkata



Dr. Pallab Dasgupta

Professor
Department of Computer Science & Engineering
Indian Institute of Technology, Kharagpur

Dr. Santanu Bose

Assistant Professor, Department of Geology
University of Calcutta, Kolkata

Dr. Subhankar Chowdhury

Professor & Head
Dept. of Endocrinology & Metabolism
Inst. of Post-graduate Medical Education & Research and
SSKM Hospital, Kolkata

Dr. Paromita Roy

Deputy Director
JBNSTS, Kolkata

Dr. Partha P Majumder

Professor & Director
National Institute of Biomedical Genomics, Kalyani, Nadia

Dr. Subhrangsu Aditya

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

Dr. Abhijit Kar

Scientific Officer, JBNSTS, Kolkata

Dr. Smarajit Manna

Student Advisor, JBNSTS, Kolkata



CAMP RULES

Welcome to the 45th 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 28th March, 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, Registration Form endorsed by your Principle/HM and filled-in STUDENT'S INFORMATION SHEET during lunch break on **24th March, 2015.**
- All students of the Science Camp will receive a library membership of British Council Library (BCL) (with 1 year validity). During that period you will be able to borrow book(s) from BCL and search/ read books online. You will be given a 'BCL Membership Form' (**24th March, 2015**) for the library membership which you need to fill up and submit to us on **25th March, 2015 during lunch break.**

TRAVEL BILL :

Residential Students: Travel bills (bus, auto and / or train fare only) are to be submitted along with relevant documents (tickets etc.) on **25th March, 2015 during 01.00 p.m. to 02.00 p.m.**

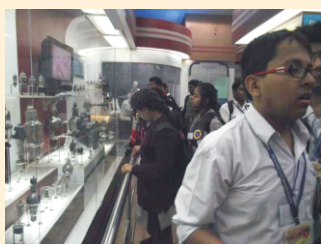
Non-residential Students: Travel bills (bus, auto and / or train fare only) are to be submitted on **27th March, 2015** during morning registration.

- You are required to fill up the FEED BACK SHEET and submit it on **28th March, 2015 during 01.00 p.m. to 02.00 p.m.**

Reimbursements:

- Reimbursement for Travel expenses and BCL membership card distribution (school wise) will be made on **28th March, 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. 28th March, 2015 you will receive the Participation Certificate.



BRIEF INTRODUCTION TO THE EXPERTS

DR. L S SHASHIDHARA

Dr. L S Shashidhara is presently a Professor & Head of Biology Department and Dean of Research & Faculty at Indian Institute of Science Education and Research (IISER), Pune. He did M.Sc. from University of Agricultural Sciences, Dharwad in 1987 and Ph.D. from Cambridge, UK in 1991. His academic career includes several distinguished positions such as Post Doctoral fellow at Cambridge, UK; Visiting Fellow at NCBS, Bangalore, Scientist (Group Leader) at CCMB, Hyderabad and Honorary faculty member at JNCASR, Bangalore. Dr. Shashidhara is an Associate Editor of *Journal of Genetic & Current Science* and Member of the Editorial Board of *Scientific Reports* (Nature publication group). Among many distinguished awards and honors, he has received very prestigious SS Bhatnagar Prize in Biological Sciences, JC Bose National Fellowship and DAE-SRC Outstanding Research Investigator Award. His research interest lies in evolution of appendage forms, mechanism of homeotic selector (Hox) gene function etc. Dr. Shashidhara has published several research papers in peer reviewed national and international journals.

DR. BIMALENDU BHUSAN BHATTACHARYA

Dr. Bimalendu Bhusan Bhattacharya did his B.Sc. in Physics and M.Sc. in Geophysics from Banaras Hindu University and Ph.D. in Physico-Mathematical Sciences from Leningrad State University, USSR (Presently St. Petersburg University, Russia). His major research interests include Geoelectromagnetism, Mining Geophysics, Engineering Geophysics, Environmental Geophysics and Interpretation of Geophysical Data using Nonlinear Inversion, Computer Simulation and Modeling. He has done pioneering work during Indian Antarctica Expedition as leader. He has worked as Scientist in National Geophysical Research Institute (NGRI), Hyderabad and Director in Indian School of Mines (ISM), Dhanbad. Currently he is Emeritus Professor (CSIR Emeritus Scientist) and INAE Distinguished Professor in S. N. Bose National Centre for Basic Sciences, Kolkata. He has worked different parts of the globe and held distinguished positions such as Visiting Professor, Department of Physics in University of Alberta Edmonton, Canada, Leader, Fourth Scientific Indian Antarctica Expedition, Government of India; Visiting Professor (Fulbright) Department of Geology & Geophysics in University of Wisconsin, Madison Wisconsin, USA and Guest Faculty in Bengal Engineering and Science University, Shibpur, Howrah, W.B. Among many distinguished awards, he has got National Mineral Award, Dept. of Mines, Govt. of India, Distinguished Service Award Indian School of Mines, Dr. Coggin Brown Gold Medal on Earth Sciences, MGMI; Decennial Award, Association of Exploration Geophysicists, etc. He is a member of the editorial committee of The Journal of Geological Society of India, recipient of distinguished professor's chair by Indian National Academy of Engineering (INAE).

DR. AVIJIT LAHIRI

Dr. Avijit Lahiri is presently the Associate Professor at the Dept. of Physics of Vidyasagar Evening College, Kolkata. He did M.Sc. in Physics from Calcutta University in 1968 and Ph.D. in Theoretical Physics from the same University in 1975. He taught at post-graduate and M. Phil levels at various Universities and Institutions. Dr. Lahiri has published numerous research papers in several areas of theoretical physics in peer reviewed national and international journals. He has also authored a number of books, including books on general physics, basic concepts of physics, a book on equilibrium statistical mechanics, a book on optics and currently planning for a book on non-equilibrium statistical mechanics. Dr. Lahiri is interested in philosophy of mathematics, and the philosophy and sociology of science.

DR. SAMITA BASU

Dr. Samita Basu is a Professor at the Chemical Sciences Division, Saha Institute of Nuclear Physics, Kolkata. She did her Ph. D. from Indian Association for the Cultivation of Science under supervision of Prof. Mihir Chowdhury in 1989. Her current research interests are photochemistry in homogeneous (solvent) and heterogeneous (micelles, reverse micelles, vesicles) media, Electron Transfer & Hydrogen abstraction, Interaction between small drug-like molecules with protein and DNA.

DR. SUBHAMOY MAITRA

Dr. Subhamoy Maitra received his Bachelor of Electronics and Telecommunication Engineering degree in the year 1992 from Jadavpur University, Calcutta and Master of Technology in Computer Science in the year 1996 from Indian Statistical Institute, Calcutta. He has completed Ph.D. from Indian Statistical Institute in 2001. Currently he is a Professor at Indian Statistical Institute. His research interest is in Cryptology.

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.

MR. PARTHA PRATIM ROY

Mr. Partha Pratim Roy is the Head of Physics Department at South Point High School, Kolkata. He is also an activist in spreading the concept of discovery learning among teachers of science in general, and physics in particular. He has founded the Center for Physics Education Research, Kolkata (cper.pbworks.com) in 2012, involving some of the faculty members of the Physics Education Research Group of University of Maryland, College Park, and Peabody College, Vanderbilt University, and the teachers of different schools of West Bengal. He is a member of the School Education Expert Committee, Govt. of West Bengal, and takes active part in the implementation of the National Curriculum Framework, and the Right to Education Act in the state. In 2011, Partha Pratim Roy was a Fulbright Teaching Fellow at the Physics Education Research Group, University of Maryland, College Park, USA. He is a life member of the American Association of Physics Teachers, and the Indian Physical Society. He had also mentored students to win Awards at the Intel International Science and Engineering Fair, in 2009, 2010 and in 2011. Partha Pratim Roy has been actively involved in PHYSWARE, a hands-on Physics learning initiative of the Abdus Salam International Center for Theoretical Physics, Trieste, Italy, in 2012 and 2015.

DR. SOUMITRA SEN GUPTA

Dr. Soumitra Sengupta is presently a Senior Professor at the Department of Theoretical Physics of Indian Association for the Cultivation of Science (IACS), Kolkata. He did his B.Sc. from Presidency College, M.Sc. from Calcutta University and Ph.D. from Saha Institute of Nuclear Physics, Kolkata. His academic career includes several distinguished positions such as Sr. Lecturer at the Department of Physics, Presidency College, Kolkata; Sr. Lecturer & Reader at the Department of Physics of Jadavpur University; Reader, Professor and Sr. Professor at Department of Theoretical Physics, IACS, Kolkata. He is a fellow of The National Academy of Sciences, India. His current research interest includes String Theory, Supersymmetry, Supergravity, Braneworld Phenomenology, Cosmology and Black holes. Dr. Sengupta has several research publications in national and international peer reviewed journals.

DR. PALLAB DASGUPTA

Dr Pallab Dasgupta is a computer scientist known for his work on design automation of electronic circuits and systems. He is currently a professor with the department of Computer Science and Engineering at IIT Kharagpur, which gives him the license to teach some of the great young minds of India, collaborate with many companies who come to him with very tough problems, and provide research guidance to some students who are very determined to get their PhD degrees. He plays, though not very well, an Indian instrument called sitar. He has recently started collaborating with musicians, computer scientists, signal processing engineers and psychologists to discover the SANDHI of technology and music. He is a Fellow of the Indian Academy of Engineering and a Fellow of the Indian Academy of Sciences, but he is particularly proud of being a 1986 batch JBNSTS Scholar. Other irrelevant information about him can be found in his website: <http://cse.iitkgp.ac.in/~pallab>

DR. SANTANU BOSE

Dr. Santanu Bose is presently the Assistant Professor at the Department of Geology of Calcutta University. He did his Ph.D. from Jadavpur University, Kolkata in the year 2000 and Postdoctoral Research at the University of Lisbon, Portugal during 2002 – 2005. Along with other awards and honors, he is the recipient of Endeavour Fellowship, 2015 from Ministry of Education, Australia and also FCT, Portugal Earth Sciences Postdoctoral Research Fellowship in 2002. Dr. Bose is also the Secretary, Structural Geology and Tectonics Study Group of India and Jt. Secretary, The Geological, Mining and Metallurgical Society of India. His research interest includes Orogenic Deformation, Analogue Modelling and Himalayan Geology. Dr. Bose has several publications in peer-reviewed national and international journals.

DR. SUBHANKAR CHOWDHURY

Dr. Subhankar Chowdhury; DTM & H, MD in General Medicine, DM Endocrinology, MRCP (UK) is presently Head of the Department of Endocrinology, IPGME&R and SSKM Hospital, Kolkata. He is also a PhD guide & evaluator, an examiner in Endocrinology in DM and DNB courses, a regular invited speaker at National Conferences on Diabetes and Endocrinology for more than 20 years and Principal Investigator in several International Registration Clinical Trials over last 15 years. He regularly participates in health awareness programs, especially in the fields of Diabetes and Thyroid disorders, in different parts of West Bengal and also in the print and electronic media. Dr. Chowdhury is a member of Subject Expert Committee, Central Drug Standard Control Organization, Govt. of India; Annual Meeting Steering Committee, International Congress of Endocrinology jointly with Annual Scientific Conference of Endocrine Society of USA, 2014 and National Advisory Board, Indian Journal of Endocrinology and Metabolism. He is also holding some important positions such as President of Endocrine Society of Bengal; Secretary, Research Society for Study of Diabetes in India, West Bengal Chapter; Founder Patron, South Asian Federation of Endocrine Societies. He is also the former President, Endocrine Society of India. Very recently, Dr. Chowdhury act as Judge at Presidential Poster Competition, ENDO US 2015 at San Diego, USA. He has published 108 papers in peer-reviewed national and international journals.

DR. PAROMITA ROY

Dr. Paromita Roy is a Ph.D. in Psychology from Delhi University. She is presently the Deputy Director of Jagadis Bose National Science Talent Search (JBNSTS), Kolkata, the first science talent search institute in India. She has more than twenty years of experience in working with talented students and has been responsible for developing programs for them. She is also actively involved in teacher development through workshops and training programs. Her major areas of focus are educational psychology, psycho-social development and pedagogical issues related to talented and gifted minds. She is actively involved in guidance and counseling of students and their parents, curriculum planning and strategy development. Her rich experience in working “on field” with high ability and talented students from the ages of 14 -21 years has made her one of the key people who has a direct inter-phase with India’s population of talented students. Earlier in 2014, she was the main organizer of the First International Conference on Research in Education and Curriculum Planning for Gifted Minds, held in New Delhi and Kolkata wherein she planned and put together an event with 18 eminent international and as many national experts as speakers. She has also been the editor in chief of the "Conference Book of Abstracts" which is a rich compilation of article abstracts in the field of global giftedness research and practice.

DR. PARTHA P MAJUMDER

Dr. Partha Pratim Majumder is presently a Professor and Director of National Institute of Biomedical Genomics, Kalyani. He was associated with Indian Statistical Institute (ISI) as Professor & Head of Human Genetics Unit and also with Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore as Honorary Professor. He did his Ph.D. from Indian Statistical Institute, Kolkata in 1982. Dr. Majumder has made many important contributions to the development of genetic epidemiology and population genetics. He is a Fellow of the several prestigious national scientific bodies such as Indian National Science Academy, Indian Academy of Sciences and West Bengal Academy of Science & Technology. He is also a member of several national and international societies such as Human Genome Organization, International Genetic Epidemiology Society, Asia-Pacific Society of Human Genetics, Indian Society of Human Genetics and so on. Dr. Majumder has rendered service to the Office of the Principal Scientific Adviser to the Government of India, Indian National Science Academy, various agencies of the Government of India, particularly Department of Biotechnology, Department of Science & Technology, Indian Council of Medical Research, and Council of Scientific & Industrial Research and to various Universities and Institutes, as member of Task Forces, Monitoring Committees and Review Boards, Scientific Advisory Committees, and Committees for the promotion of international co-operation in science. He is the member of the editorial boards of several national and international journals. Dr. Majumder act as an Expert on UNESCO's Drafting Group of the International Declaration on Human Genetic Data in 2002-2003. He has won many awards, including the New Millennium Science Gold Medal in the year 2000.

DR. SUBHRANGSU ADITYA

Dr. Subhrangsu Aditya an M.B.B.S. from NRS Medical College (2000), a 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.

“Learning Science”

Day to Day Program

Day 1 : Tuesday, March 24, 2015

- 09:00 a.m. – 10:00 a.m. Registration
- 10:00 a.m. – 11:30 a.m. **Welcome Address by the Director, JBNSTS and Orientation of the participants**
“Evolution of Human Cognition”
Dr. L S Shashidhara, Professor & Head, Biology Department and Dean of Research & Faculty
Indian Institute of Science Education and Research, Pune
- 01:00 p.m. – 02:00 p.m. Lunch & Interaction
- 02:00 p.m. – 03:30 p.m. **“Exploration Antarctica: Adventure and Science”**
Dr. Bimalendu Bhusan Bhattacharya, INAE Distinguished Professor,
S.N. Bose National Centre for Basic Sciences, Salt Lake, Kolkata
- 03:30 p.m. – 05:00 p.m. **“Logic in Mathematics and the Sciences”**
Dr. Avijit Lahiri, Associate Professor, Dept. of Physics, Vidyasagar Evening College, Kolkata
- 05:00 p.m. – 06:00 p.m. **BCL Forum**



Day 2 : Wednesday, March 25, 2015

- 09:00 a.m. – 10:00 a.m. Registration
- 10:00 a.m. – 11:30 a.m. **“Spectroscopy: an interaction of light with matter”**
Dr. Samita Basu, Professor, Chemical Science Division, Saha Institute of Nuclear Physics, Kolkata
- 11:30 a.m. – 01:00 p.m. **“A brief introduction to some famous (but easily explainable) problems in Cryptology”**
Dr. Subhamoy Maitra, Professor, Applied Statistics Unit, Indian Statistical Institute, 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, JBNSTS & **Dr. Smarajit Manna**, Student Advisor, JBNSTS, Kolkata

Day 3 : Thursday, March 26, 2015

- 09:00 a.m. – 10:00 a.m. Registration
- 10:00 a.m. – 01:00 p.m. **“Learning Physics by self - investigation: An example using LED”**
Mr. Partha Pratim Roy, Physics Teacher, South Point High School, 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, JBNSTS & **Dr. Smarajit Manna**, Student Advisor, JBNSTS, Kolkata



Day 4 : Friday, March 27, 2015

- 09:00 a.m. – 10:00 a.m. Registration
- 10:00 a.m. – 11:30 a.m. **“From Quarks to Cosmos – an unending quest”**
Dr. Soumitra SenGupta, Senior Professor, Department of Theoretical Physics
Indian Association for the Cultivation of Sciences, Kolkata
- 11:30 a.m. – 01:00 p.m. **“The Amazing World of Cyber-Physical Systems”**
Dr. Pallab Dasgupta, Professor, Department of Computer Science and Engineering
Indian Institute of Technology, Kharagpur
- 01:00 p.m. – 02:00 p.m. Lunch & Interaction
- 02:00 p.m. – 03:30 p.m. **“Plate tectonics and Earthquake”**
Dr. Santanu Bose, Asstt. Professor, Dept. of Geology, University of Calcutta
- 03:30 p.m. – 05:00 p.m. **“Medical Practice and Medical Research – any contradiction?”**
Dr. Subhankar Chowdhury, Professor & Head, Dept. of Endocrinology & Metabolism,
Institute of Post-graduate Medical Education & Research and SSKM Hospital, Kolkata
- 05:00 p.m. – 06:00 p.m. Summing up Session



Day 5 : Saturday, March 28, 2015

- 09:00 a.m. – 10:00 a.m. Registration
- 10:00 a.m. – 11:30 a.m. **“Science and Creativity”**
Dr. Paromita Roy, Deputy Director, JBNSTS, Kolkata
- 11:30 a.m. – 01:00 p.m. **“In Search of the Drivers”**
Dr. Partha P Majumder, Professor & Director, National Inst. of Biomedical Genomics, Kalyani
- 01:00 p.m. – 02:00 p.m. Lunch & Interaction
- 02:00 p.m. – 06:00 p.m. **Project Presentation by the Participants**
Interactive session with Parents (Parallel Session)
Dr. Subhrangshu Aditya, School of Bio-Science & Engineering and School of Cognitive Science,
Jadavpur University, Kolkata





(24th – 28th March, 2015)

45th DST-JBNSTS INSPIRE Science Camp

“Learning Science”



Venue: JB Centre of Excellence for Student-Scientists,
1300, Rajdanga Main Road, Kasba, Kolkata 700 107

“Learning Science”

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here

Student's information sheet

Name of the student (in block letters): _____

Permanent address: _____

Contact Number: Landline - _____ Mobile - _____

E-mail (mandatory): _____

School's name (in block letters) & Address with pin code, phone no & email-id: _____

Percentage of marks obtained in the 10th standard Board examination held in 2014: _____

Percentage of marks obtained in science subjects: _____

Favorite subject: _____

Who is your role model in science? _____

Would you like to pursue a career in science? _____

What is your expectation from a science camp? _____

Have you heard about JBNSTS before the camp? How? _____

Signature of Student



45th DST-JBNSTS INSPIRE Science Camp
“Learning Science”
(24th – 28th March, 2015)



INSPIRE INTERN'S FEED BACK FORM

1. Name and Address of the Host Institute: _____

2. Date/Duration of the INSPIRE Internship Camp: _____

3. Name and Address of the student: (With their school name, e-mail address & Mob. No.) _____

4. Comments about the Infrastructural capacity of the organizing Institute: _____

5. Comments on the boarding and lodging facilities made available: _____

6. Comments about the Payment of Traveling cost to the participating students: _____

7. Comments on the interactive talks delivered by the Mentors: _____

8. Comments on the practical demonstrations/hands on experience: _____

9. Students views on the INSPIRE Internship Camp: _____

10. Comments about the scientific discussions with the Mentors: _____

11. Suggestions to further improve the INSPIRE Internship camps: _____

12. Overall impact of the INSPIRE Internship Camp: _____

(Signature of the Student)