

DST-INSPIRE INTERNSHIP SCIENCE CAMP - 2013



Department of Science & Technology
Govt. of India

In association with



Jagadis Bose National Science Talent Search
Govt. of West Bengal

Science Camp Entitled:

‘বিজ্ঞানের নবদিগন্ত’

September 3 - 7, 2013

At JB Centre of Excellence for Student – Scientists



Jagadis Bose National Science Talent Search,

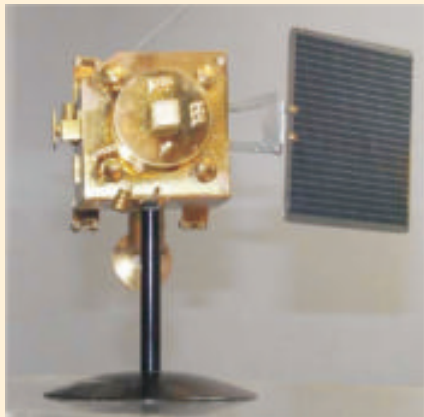
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About JBNSTS

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.



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. Bimal K Roy

Director
Indian Statistical Institute, Kolkata

Shri Samar Bagchi

President
Kishore Bharati Development Society, Kolkata

Dr. Anjan Ghosh

Vice President
Total Quality Management
Exide Industries Ltd, Kolkata

Dr. Parthasarathi Mukhopadhyay

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

Dr. Sumitra Purkayastha

Associate Professor, Applied Statistics Unit
Indian Statistical Institute, Kolkata

Prof. Samita Basu

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

Dr. Subhrangsu Aditya

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



Dr. Bhupati Chakrabarti

Former Associate Professor
Department of Physics
City College, Kolkata

Prof. Hironmay Saha

Centre of Excellence for Green Energy and
Sensor Systems (CEGESS)
Bengal Engineering and Science University
Shibpur, Howrah

Prof. Sanjib Bagchi

Emeritus Professor
Department of Chemistry
Presidency University, Kolkata

Prof. Partha Deb Ghosh

Senior Professor
Department of Botany, Kalyani University, Nadia

Dr. Subodh Mahanti

Scientist G
Division Head: Publication
Vigyan Prasara, Noida, U.P.

Dr. D. P. Duari

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

Dr. Paromita Roy

Deputy Director
JBNSTS, Kolkata

CAMP RULES

Welcome to the Science Camp ‘বিজ্ঞানের নবদিগন্ত’

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 Xth Standard Board Examination Mark Sheet, held in 2013 during the morning registration on **4th September, 2013** at registration desk.

You are required to fill up the STUDENT'S INFORMATION SHEET & one Passport Size Photograph and submit it on **5th September, 2013** during morning registration at registration desk. You are also required to fill up the FEED BACK SHEET & submit it on **7th September, 2013 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 **2nd September, 2013** by the escorting teachers. Your reimbursement will be made on **7th September, 2013**. 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 **6th September, 2013** during morning registration at registration desk. Your reimbursement will be made on **7th September, 2013 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 **4th September, 2013**. Your reimbursement will be made on **6th September, 2013 between 01.00 p.m. to 02.00 p.m.**

Non-residential Students: Book bill(s), authorized by respective Headmaster/ Headmistress, are to be submitted on **6th September, 2013** during morning registration at registration desk. Your reimbursement will be made on **7th September, 2013 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. **7th September, 2013** you will receive the Participation Certificate.

Name of the participating schools:

- Bolpur High School, Birbhum
- Bahiri Braja Sundari Higher Secondary School, Birbhum
- Matiari Rampada Sen Memorial High School, Nadia
- Nabadwip Tarasundari Girls' High School, Nadia
- Mahes Sri Ramkrishna Ashram Vidyalaya, Hooghly
- Nabagram Vidyapith, Hooghly
- Sekendarpur Rai K. P. Bahadur Institution, Hooghly
- Howrah Zilla School, Howrah
- Baruipur High School, South 24 Parganas
- Rashmoni Girls' High School, South 24 Parganas
- Dum Dum Kishor Bharati, Kolkata
- Narendrapur R. K. Mission Vidyalaya, Kolkata
- Kamala Girls' High School, Kolkata
- Hare School, Kolkata



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, Gottingen, Germany. Later she was Associate Professor of Physics in University of Ulm, Germany. She joined Physics department in Jadavpur University and besides teaching for more than 30 years in the Science and Engineering faculties, she was and still is in charge of several research projects. Her field of research encompasses membrane biophysics. She has more than hundred research publications in peer reviewed journals and 3 patent awards. She has guided more than 12 Ph.D. Thesis and 20 Masters Thesis. She is currently the Emeritus Fellow of Jadavpur University and 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. BIMAL K. ROY

Professor Bimal K. Roy is presently the Director, Indian Statistical Institute, Kolkata. He did his Bachelor of Statistics & Master of Statistics from Indian Statistical Institute, Kolkata and Ph.D. in Combinatorics from University of Waterloo, Canada. During his academic career, Dr. Roy occupied several distinguished positions such as assistant professor and associate professor at Department of Computer Science, SUNY at Utica, lecturer, associate professor at Computer Science Unit and professor at Applied Statistics Unit, Indian Statistical Institute, Kolkata. He is associate editor of Journal of Ad Hoc & Sensor Wireless Networks, Journal of Wireless Sensor Networks and member of UNESCO Technical Advisory Committee for Asia-Pacific region, Program advisory committee for Mathematical Sciences, Department of Science and Technology (DST), India, Technical Advisory committee for surveys, Reserve Bank of India and Board for Security and Assurance, National Association of Software and Service Companies (NASSCOM). Prof. Roy is the Founder-Secretary, Cryptology Research Society of India. His research interest involves all aspects of Statistics and its applications including Combinatory and application of Statistics in Cryptology and Design of Experiments. He is a recipient of many awards and honors such as India - Reliance Platinum Jubilee Award for innovation in Physical Sciences, National Academy of Science, 2007 and IBM Faculty Award 2007 for research, teaching and initiative in Cryptology and Security.

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. 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. PARTHASARATHI MUKHOPADHYAY

Dr. 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 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.

DR. SUMITRA PURKAYASTHA

Dr. Sumitra Purkayastha, currently a member of the faculty of Indian Statistical Institute (ISI), at its Kolkata centre, received his training in Statistics and Mathematics from ISI. He received the degrees B.Stat. (Hons.), M.Stat. and Ph.D. (in Statistics) from ISI. He was a post-doctoral fellow at Department of Statistics, University of Toronto. During 1994--1997, he was a member of the faculty of Department of Mathematics, Indian Institute of Technology, Bombay. He has also taught at Department of Biostatistics, University of Michigan, Ann Arbor, USA and has visited several other places in North America and Europe, including McGill University, Montreal, Canada and GSF-National Research Centre for Environment and Health, Institute of Biomathematics & Biometry, Neuherberg, Germany. The earlier research interests of Dr. Purkayastha include Statistics of Directional Data, Asymptotic Theory, Multivariate Analysis and other Inferential problems. His later interests include Bayesian analysis and applied, interdisciplinary research, including brain mapping. Cognitive Science is a very recent interest of him. Since 2012, Dr. Purkayastha is one of the Joint Co-ordinators, Regional Mathematical Olympiad, West Bengal. Besides Statistics, Mathematics revolving around the topics covered in Mathematical Olympiads is one of his passions. He enjoys spending time in solving Math Olympiad type problems and also in obtaining simpler and intuitive proofs of standard results. He also enjoys sharing the joy of doing Mathematics with students, especially of high school.

DR. SAMITA BASU

Professor Samita Basu is associated with 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. SUBHRANGSU ADITYA

Subhrangsu Aditya, M.B.B.S., senior JBNSTS scholar (1995) is currently pursuing his research at School of Bio Science & Engineering, Jadavpur University. Besides, he is associated with School of Cognitive Science (formerly Center of Cognitive Science), Jadavpur University as a research assistant and guest faculty for the M. Phil. course in Cognitive Science. He is also associated with various workshops, seminars and other activities conducted by Center for Counseling and Studies in Self-Development Skills, Jadavpur University (CCSSS-JU). He is an associate member of SAMIKSHANI Centre for Psychoanalytical Studies and Mental Therapy (since 2009). He has publications in various international journals (such as International Journal of Artificial Intelligence and Soft Computing, 2012; International Journal of Computational Vision and Robotics, 2009) and conference proceedings (such as 2010 IEEE Students' Technology Symposium; International Joint Conference on Artificial Intelligence: IJCAI – 07, 2007; International Workshop on Spatial Issues in Language and Vision: SLIV - 05, 2005) and book chapters (such as “Ethical Issues in Mental Health Services from Consumers' Perspective” published in the book Ethical Issues in Mental Health Services, 2009; “Determinants of Perception: A Neurophysiological Perspective” published in the book Determinants of Perception, 2009). He participated as a resource person in the UGC Sponsored Refresher Course “Art and Science of Mechatronics and its Application in Robotics” held at Electrical Engineering Department, Jadavpur University. He was invited to present a paper entitled “Protecting Children in Cyberspace” presented at the Institute of Engineers (India), West Bengal State Centre, on the World Telecommunication and Information Society Day, May 17, 2009. His current areas of interest are Cognitive Neuroscience, Artificial Intelligence, Bio signal processing, Psychological Counselling, Stress Management, Cyber-relationship, Jealousy etc.

DR. BHUPATI CHAKRABARTI

Dr. Bhupati Chakrabarti was an NSTS scholar and got his Ph. D from the University of Calcutta for his experimental research work done in the Indian Association for the Cultivation of Science, Kolkata in 1983. He is teaching at the UG colleges for more than thirty years. Recently he has retired as an Associate Professor from the Department of Physics, City College, Kolkata. He served as the Head of the Departments of Physics in Chakdaha College, Nadia (from 1981 to 1987) and in City College (from 2003 to 2011). He is actively associated with the training and selection of the students for International Physics Olympiad (IPhO) and Asian Physics Olympiad (APhO). He was the part of the Indian delegation to 36th IPhO in 2005 held at Spain and in 11th APhO in 2010 held at Taiwan. He has written more than two hundred popular science articles in Bengali and in English and has been awarded by the Department of Adult Education, Govt of India. He has also been awarded with Jogamaya Basu Smriti Purashkar of Bangiya Bijan Parishad for his writing in Bengali. He is actively involved in the programmes of Indian Association of Physics Teachers (IAPT) and has conducted number science workshops for students of different levels and the teachers. His field of current interest includes development of physics experiments, physics education related issues, science communication and of course teaching. Dr Chakrabarti has published more than forty papers in different peer-reviewed journals and conference proceedings on his fields of interest. He has presented his work in different national and international conferences in India and abroad. He has co authored a book on environment and has co-edited a collection of essays on science both in Bengali.

DR. HIRONMAY SAHA

Prof. Hiranmay Saha received his M. Tech degree in Radiophysics and Electronics from University of Calcutta in 1967 and Ph. D degree in Solar Cells and Systems from Jadavpur University in 1977. He was former Chairman of Solar Energy Division (Eastern Region), the Ministry of New and Renewable Energy, Government of India and Advisor of WBREDA (Dept. of Power and N.E.S., Govt. of West Bengal). He is associated with Jadavpur University, as Professor in the Department of Electronics and Telecommunication Engineering and was the Coordinator of the University's IC Design and Fabrication Centre. He is involved in high end Research & Development work in the field of Photovoltaic Cells, Sensors and VLSI based intelligent signal processing architectures and smart embedded systems. Currently he is the Professor-in-charge of 'the Centre of Excellence for Green Energy and Sensor Systems', Bengal Engineering and Science University, WB. He is Fellow, IEE (UK), IETE and Member IEEE, NCS (WB), Dept. of Science & Technology (WB), WBREDA. Dr. Saha is the chairman of the Board of Directors of Agni Power & Electronics Pvt. Ltd.

DR. SANJIB BAGCHI

Prof. Bagchi is presently associated with Chemistry Department, Presidency University as the Emeritus Professor. Formerly he was the Professor of Chemistry, Indian Institute of Science Education and Research (IISER), Kolkata. He obtained his M.Sc and Ph.D from University of Kolkata. Before IISER, he was Asst. Professor of Chemistry in Presidency College and Professor of Burdwan University. His research interests are Photochemistry, Experimental Spectroscopy, Solvation etc. He is also the Elected Fellow, West Bengal Academy of Science & Technology.

DR. PARTHA DEB GHOSH

Dr. Partha Deb Ghosh is 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. Dr. 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). Dr. 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. SUBODH MAHANTI

Dr. Subodh Mahanti, a well-known science communicator, did his B.Sc (Honours) from Burdwan University (1976) and MSc from Banaras Hindu University (1978). He was awarded National Scholarship and BHU Gold Medal for standing first in M.Sc. He did his Ph.D in Organic Chemistry (1982) and subsequently worked in Molecular Biology. For the last 20 years he has been working in the field of science popularization. He was the Honorary Director of Vigyan Prasar, an autonomous organization set up by the Department of Science & Technology, Government of India, for taking up large-scale science popularization tasks and has co-ordinated a number of nationwide programmes undertaken by Vigyan Prasar. Presently he is the Division Head: Publication of Vigyan Prasar, Noida. Dr. Mahanti has received a numbers of awards for his contributions in the field of science popularization including NCSTC National Award for Best Science and Technology coverage in Mass Media for the year 2003. Among other awards received by Dr. Mahanti include FIE Foundation National Award (2000), Delhi Hindi Academy Award (2006), Dr. Meghnad Saha Award (2005), and Atma Ram Purashkar of the Kendriya Hindi Sansthan, Agra Ministry of HRD, Government of India (2007). Dr. Mahanti writes both in Hindi and English. Besides his research papers, he has written more than 300 popular science articles and edited/authored/co-authored more than 20 books .

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. 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, September 3, 2013

- 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. **Motivational Lecture**
Prof. Bimal K Roy, Director, Indian Statistical Institute, Kolkata
 01:00 p.m. – 02:00 p.m. Lunch & Interaction
 02:00 p.m. – 05:00 p.m. **“Demonstration of Science Experiments”**
Shri Samar Bagchi, President, Kishore Bharati Development Society, Kolkata
 05:00 p.m. – 06:00 p.m. **Summing up Session**

Day 2 : Wednesday, September 4, 2013

- 09:00 a.m. – 10:00 a.m. Registration
 10:00 a.m. – 11.30 a.m. **“Team Work”**
Dr. Anjan Ghosh, Vice President, Total Quality Management, Exide Industries Ltd, Kolkata
 11:30 a.m. – 01.00 p.m. **“Story of Calculus”**
Dr. Parthasarathi Mukhopadhyay, 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. **“Doing Combinatorics, Solving Functional Equations”**
Dr. Sumitra Purkayastha, Applied Statistics Unit, Indian Statistical Institute, Kolkata
 05:00 p.m. – 06:00 p.m. **Summing up Session**

Day 3 : Thursday, September 5, 2013

- 09:00 a.m. – 10:00 a.m. Registration
 10:00 a.m. – 11:30 a.m. **“Basic Principles of LASER”**
Prof. Samita Basu, Chemical Science Division, Saha Institute of Nuclear Physics, Kolkata
 11:30 a.m. – 01:00 p.m. **“How to choose your career?”**
Dr. Subhrangshu Aditya, School of Biosc. & Eng. and School of Cognitive Sc., Jadavpur University
 01:00 p.m. – 02:00 p.m. Lunch & Interaction
 02:00 p.m. – 05:00 p.m. **“Studying Oscillations to Explore Physics”**
Dr. Bhupati Chakrabarti, Former Associate Professor, Dept. of Physics, City College, Kolkata
 05:00 p.m. – 06:00 p.m. **Summing up Session**

Day 4 : Friday, September 6, 2013

- 09:00 a.m. – 10:00 a.m. Registration
 10:00 a.m. – 11:30 p.m. **“Solar Electricity: Why and How?”**
Prof. Hironmay Saha, CEGESS, Bengal Engineering and Sc. University, Howrah
 11:30 a.m. – 01:00 p.m. **“Atoms, Molecules and Quanta”**
Prof. Sanjib Bagchi, Emeritus Professor, Dept. of Chemistry, Presidency University, Kolkata
 01:00 p.m. – 02:00 p.m. Lunch & Interaction
 02:00 p.m. – 05:00 p.m. **“DNA and Biotechnology”**
Prof. Partha Deb Ghosh, Department of Botany, Kalyani University, Nadia
 05:00 p.m. – 06:00 p.m. **Summing up Session**

Day 5 : Saturday, September 7, 2013

- 09:00 a.m. – 10:00 a.m. Registration
 10:00 a.m. – 11:30 a.m. **“Many reasons to be a Scientist”**
Dr. Subodh Mahanti, Scientist G, Division Head: Publication, Vigyan Prasara, Noida, UP
 11:30 a.m. – 01:00 p.m. **“Recent Concepts in Astronomy and Astrophysics”**
Dr. D. P. Duari, Director, Research & Academics, M.P. Birla Planetarium, Kolkata
 01:00 p.m. – 02:00 p.m. Lunch & Interaction
 02:00 p.m. – 05:00 p.m. **Visit to ‘Innovation Hub’ at BITM, Kolkata**
 02:00 p.m. – 05:00 p.m. **“Parents’ Counseling”**
Dr. Paromita Roy, Deputy Director, JBNSTS, Kolkata
 05:00 p.m. – 06:00 p.m. **Summing up Session**

A DST-JBNSTS Science Camp

‘বিজ্ঞানের নবদিগন্ত’

(3rd – 7th September, 2013)
JB Centre of Excellence for Student-Scientists,
1300, Rajdanga Main Road, Kasba, Kolkata 700 107

Paste
Stamp-size
Photograph
here

Student's information sheet

Name of the student (in block letters):

Permanent address with contact number and e-mail Id(mandatory):

School's name (in block letters) & Address with pin code & phone no.:

Percentage of marks obtained in the 10th standard Board examination held in 2011:

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?

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What is your expectation from a science camp? Have you heard about JBNSTS before the camp? How?

Signature of Student

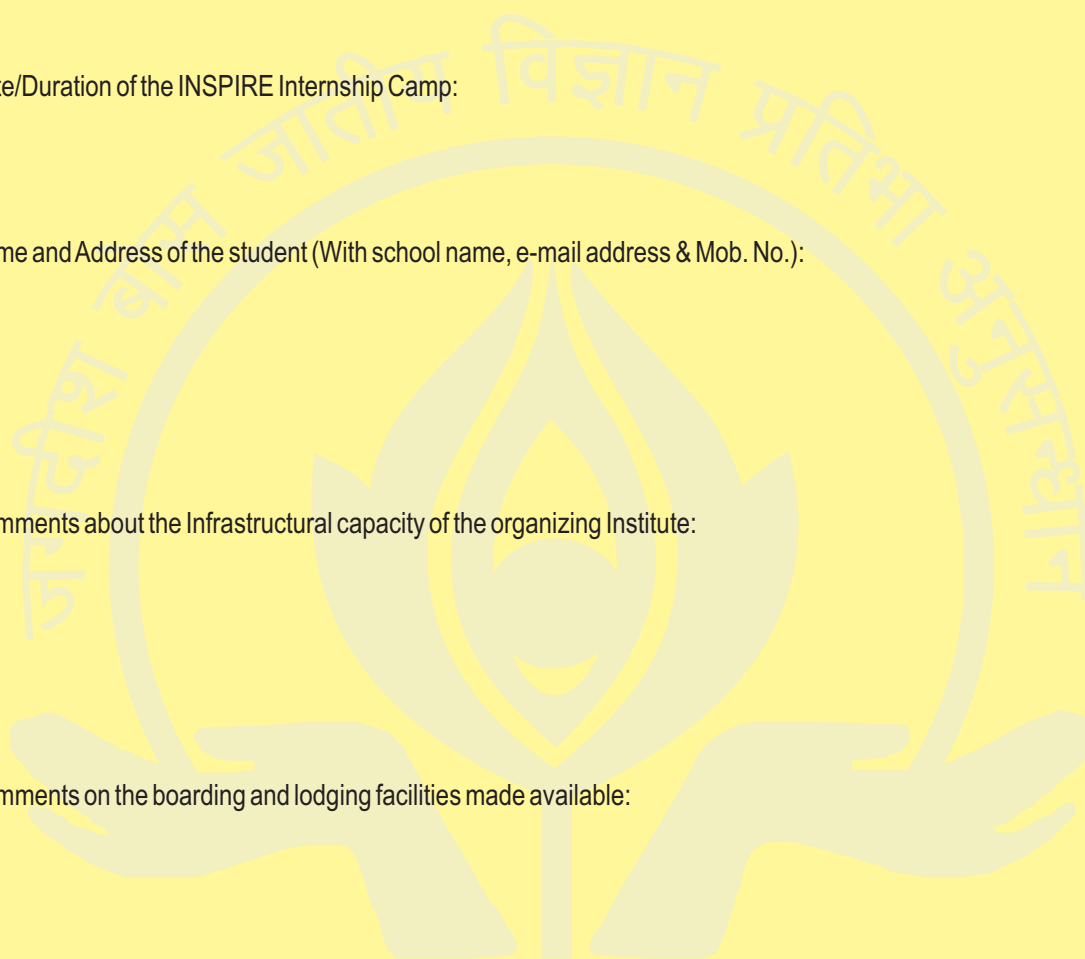
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INSPIRE INTERN'S FEED BACK FORM

1. Name and Address of the Host Institute:
2. Date/Duration of the INSPIRE Internship Camp:
3. Name and Address of the student (With 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:



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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)