

DST-INSPIRE INTERNSHIP SCIENCE CAMP - 2016



Department of
Science & Technology
Government of India



Jagadis Bose
National Science Talent Search
Government of West Bengal

54th Science Camp "Learning Science"

December 20—24, 2016

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. In the last five and half decades, JBNSTS has grown to become a premiere institute of non-formal science education in India with the objective towards pursuit of excellence through motivation, identification and nurture of young talented science students. Since 1961, JBNSTS has been conducting Senior Scholarship program in West Bengal for undergraduate students of science, engineering and medicine. This organization is considered as the oldest and first talent search institute of India and this prestigious scholarship is very well recognized across the globe. Since 2015, JBNSTS has also initiated a Junior Talent Search Test – a scholarship program for the students who are studying science in class XI. This program has been started to motivate and nurture the students from a younger age.



JBNSTS 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. It also encourages students towards the learning of basic sciences and inculcates scientific spirit in the minds of 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.

JBNSTS is also conducting Teachers Training Program by involving middle school science teachers from different districts of West Bengal. Hands-on activity based science teaching has given the main emphasis throughout this program and accordingly science kits have been developed and distributed amongst the participating teachers for demonstrating scientific principles in front of the 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 & some other Industries also collaborates with JBNSTS in such 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, Govt. of India for attraction of talent to Science and had been launched in December 2008. The basic objective of INSPIRE is to attract talented youth, ranked within top 1% in Class X board examinations and presently studying Science in +2 levels, to study science and motivate them to take up research career and inculcate scientific thought processes in all walks of their life and thus build the required critical human resource pool for strengthening and expanding the Science & Technology system and Research & Development base. It also aims to excite the interns by rubbing shoulders with global leaders in science including Nobel Prize Winners to experience the joy of innovations.

INSPIRE Program has three schemes :

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

a) **INSPIRE Award**

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

b) **INSPIRE Internship**

“Motivating talented youth to take-up research as a personal undertaking” by rubbing shoulders with global icons of science including Nobel Prize Winners, is the objective of INSPIRE Internship. This component of the program aims at working as a life-long catalyzing experience for the 11th graders in science stream.

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

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

- 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.

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

a. **INSPIRE Fellowship**

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

b. **INSPIRE Faculty Scheme**

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



"Learning Science"

Organizing Committee

Academic Committee :

Prof. (Dr.) Maitree Bhattacharyya, Director, JBNSTS

Dr. Paromita Roy, Deputy Director, JBNSTS

Dr. Abhijit Kar, Scientific Officer, JBNSTS

Dr. Smarajit Manna, Student Advisor, JBNSTS

Camp Coordinator :

Mr. Dipankar Sarkar

Mentors :

Dr. Maitree Bhattacharyya

Professor & Director

Jagadis Bose National Science Talent Search, Kolkata

Dr. Bichitra Kumar Guha

Professor of Physics & Dean, Faculty Affairs,

Indian Institute of Engineering Science and Technology, Shibpur, Howrah

Dr. Partha Chakrabarti

Senior Scientist, Cell Biology & Physiology Division

Indian Institute of Chemical Biology, Kolkata

Dr. Soumitra SenGupta

Sr. Professor and Dean (Academic & Students Affairs)

Department of Theoretical Physics

Indian Association for the Cultivation of Sciences, Kolkata

Dr. Samita Basu

Professor, Chemical Science Division

Saha Institute of Nuclear Physics, Kolkata

Dr. Pratik Majumdar

Associate Professor

Astroparticle and Cosmology Division

Saha Institute of Nuclear Physics, Kolkata

Dr. Krishanu Ray

Professor, Department of Biological Sciences

Tata Institute of fundamental Research, Mumbai

Dr. Pradyut Ghosh

Professor, Department of Inorganic Chemistry

Indian Association for the Cultivation of Science, Kolkata

Dr. Arnab Chakraborty

Assistant Professor, Applied Statistics Unit (ASU)

Indian Statistical Institute, Kolkata



Dr. Gopal Chakrabarti

Assistant Professor, Department of Biotechnology and

Dr. B. C. Guha Centre for Genetic Engineering & Biotechnology
Calcutta University, Kolkata

Dr. Anindita Ukil

Assistant Professor, Department of Biochemistry

University of Calcutta, Kolkata

Dr. Sanatan Chattopadhyay

Associate Professor, Dept. of Electronic Science,

University of Calcutta, Kolkata

Dr. Debajyoti Ghoshal

Assistant Professor, Inorganic Chemistry Section,

Department of Chemistry, Jadavpur University, Kolkata

Dr. Smarajit Manna

Student Advisor

Jagadis Bose National Science Talent Search, Kolkata

Dr. Arnab Pramanik

Research Associate,

Department of Biochemistry, Calcutta University, Kolkata

Dr. Pijush Basak

Research Associate,

Department of Biochemistry, Calcutta University, Kolkata

Dr. Arindam Bhattacharyya,

Associate Professor,

Department of Zoology, Calcutta University, Kolkata



CAMP RULES

Welcome to the 54th 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.
- An academic visit to Variable Energy Cyclotron Centre, Kolkata has been arranged on 22nd December, 2016. On that day the camp hour may be extended up to 6:00 p.m.
- 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 (24th December, 2016). Each group will get 10 minutes for presentation/ demonstration and 5 minutes for discussions.
- You will not be given any home work, but you are expected to interact freely with the experts, your group members and other groups.
- **SUBMISSION OF ALL DOCUMENTS AND REIMBURSEMENT WILL BE MADE AT REGISTRATION DESK ONLY.**

Submission of important documents

- You are required to submit an attested copy of your 10th Standard Board Examination Mark Sheet, INSPIRE Registration Form endorsed by your Principal/HM and filled-in STUDENT’S INFORMATION SHEET (Blue Sheet) during lunch break on 20th December, 2016.

Book Bill :

- All the participants will receive a Book Grant of Rs.1,200/-. For that all the participants have to submit the original bills for the book(s), endorsed by the Principal/HM, filled-in Book Grant Reimbursement Form, during morning registration (09.00 a.m. to 10.00 a.m.) on 21st December, 2016.

Travel Bill :

- Travel bills (as per instruction communicated to the Principal/HM) are to be submitted along with relevant documents (tickets etc.) during lunch break on 21st December, 2016 (for RESIDENTIAL participants) and during morning registration on 23rd December, 2016 (for NON-RESIDENTIAL participants).
- You are required to fill up the FEED BACK SHEET and submit it during lunch break on 24th December, 2016.

Reimbursements :

Reimbursement for Travel expenses and Book Grant (school wise) will be made on 23rd December, 2016 (01.00 p.m. – 02.00 p.m.) (for RESIDENTIAL participants). Book Grant will be reimbursed to participants’ account through NEFT.

In case, any payment related assistance / clarifications are needed, you may contact our accounts section.

On the last day i.e. 24th December, 2016 you will receive the Participation Certificate.



“Learning Science”

BRIEF INTRODUCTION TO THE EXPERTS

DR. MAITREE BHATTACHARYYA

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

Apart from academic research and teaching, she aims,

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

DR. BICHITRA KUMAR GUHA

Prof. Bichitra Kumar Guha has been a topper throughout his career. He has been a gold medalist of the Calcutta University standing first class first in B.Sc. (Hons.) from Presidency College. He did his M.Sc. and M.Phil. from University of Delhi and Ph.D. from Calcutta University. His works on technology of hi-tech ferroelectric materials have been acclaimed internationally. He has authored a number of research papers and a text book and guided several students for doctoral works. He has been the Dean, Faculty of Science in Bengal Engineering and Science University, Shibpur and is now the Dean, Faculty Affairs of the same Institute which is now an Institute of National Importance under the name of Indian Institute of Engineering Science and Technology.

DR. PARTHA CHAKRABARTI

Dr. Partha Chakrabarti is a senior scientist at Indian Institute of Chemical Biology, Kolkata. He completed his MBBS from Calcutta Medical College and MD from Banaras Hindu University. After his MD he went to USA for a PhD at Boston University Medical School. He joined IICB in 2011 and established 'Metabolic Disease Laboratory'. His current research interests are pathogenesis of diabetes, obesity and fatty liver disease. He has numerous publications in journals such as FASEB J, Diabetes, JBC, MCB. He serves as the editorial board member of 'Endocrinology', published by Endocrine Society, USA.

DR. SOUMITRA SENGUPTA

Dr. Soumitra Sengupta is presently a Senior Professor at the Department of Theoretical Physics and Dean, Academic & Students Affairs at 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. ANINDITA UKIL

Dr. Anindita Ukil is presently an Assistant Professor in the Department of Biochemistry, University of Calcutta. She did her M.Sc. in Biochemistry from Calcutta University and Ph.D. from Infectious Diseases and Immunology Division at Indian Institute of Chemical Biology, Kolkata. Her research interest is focused on studying the negative regulators of macrophage signal transduction cascade and elucidating their role in intramacrophage parasite survival. Dr. Ukil is interested to identify those negative regulators using visceral leishmaniasis as a model macrophage associated disease. She is the recipient of Prof. B.K. Bachhawat Memorial Young Scientist Lecture (2014) by National Academy of Sciences, Allahabad (NASI), India; SERB Women Excellence Award (2013) by Department of Science and Technology; and Young Scientist Award (2010) in Biomedical Sciences by National Academy of Sciences, Allahabad (NASI), India. Dr. Ukil has several research publications in national and international peer reviewed journals.

DR. GOPAL CHAKRABARTI

Dr. Gopal Chakrabarti is presently the Head of the Department of Biotechnology and Dr. B. C. Guha Centre for Genetic Engineering & Biotechnology, Calcutta University. He did M.Sc. from Calcutta University and Ph.D. from Bose Institute Jadavpur University. His research interest focused on Development of anti tumor agent from natural compounds targeting tubulin microtubule system, a major cytoskeleton protein; Investigation of mechanism of drug resistance in cancer and development of its therapeutic implication; Tubulin Microtubule is the prime target for various environmental pollutants and toxicants in cell; Study of bacterial cytoskeleton protein FtsZ (*V. cholerae*) and its associated proteins for development of antibacterial agents. Dr. Chakrabarti has published several research articles in national and international peer reviewed journals.

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. PRATIK MAJUMDAR

Dr. Pratik Majumdar is currently an Associate Professor at Astroparticle and Cosmology Division, Saha Institute of Nuclear Physics, Kolkata. He did Ph.D. from Tata Institute of Fundamental Research, Mumbai in 2003. His research interest include Observational aspects of Very High Energy Gamma Ray (GeV-TeV) astronomy; High Energy Cosmic Rays; UHE Neutrino Astronomy. During the academic career he has received several prestigious scholarships and awards. Dr. Majumdar has published several research articles in national and international peer reviewed journals.

DR. KRISHANU RAY

Dr. Krishanu Ray is a Professor at the Department of Biological Sciences, Tata Institute of fundamental Research, Mumbai. He did M.Sc. from Calcutta University and Ph.D. from Tata Institute of fundamental Research, Mumbai. His research interest focused on domain structure-functions relationship of kinesin-2, and their role in intracellular transports; novel F-actin based process that prevents abnormal cell penetration by spermatids and experimental demonstration of Anharmonic Resonance (AHR) of light. Dr. Ray has already guided 8 students for their Ph.D. degree. Dr. Ray has published several research articles in national and international peer reviewed journals.

DR. PRADYUT GHOSH

Dr. Pradyut Ghosh is presently a Professor of Inorganic Chemistry and Associate Dean (administration) at Indian Association for the Cultivation of Science, Kolkata. He did B.Sc. & M. Sc. (Chemistry) from Calcutta University in 1990 and 1992 respectively. He obtained his Ph.D. degree from Indian Institute of Technology, Kanpur in 1998. Dr Ghosh is the recipient of many prestigious awards including Shanti Swarup Bhatnagar Prize in 2015. His Research Interests include Recognition of Anions, Molecular Capsules, Chemical Sensing of Ions, Extraction of Inorganic Salts, Supramolecular Aggregations, and Interlocking Molecules. Dr. Ghosh has published several research articles in national and international peer reviewed journals.

DR. ARNAB CHAKRABORTY

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

DR. DEBAJYOTI GHOSHAL

Dr. Debajyoti Ghoshal is presently an Assistant Professor at the Department of Chemistry (Inorganic Section), Jadavpur University. He did his M.Sc. from Visva-Bharati, Santiniketan and Ph.D. from Jadavpur University. His research interest is focused on Non-covalent interactions, Functional supramolecular architecture, Crystal engineering and Molecular materials. Dr. Ghoshal has several research publications in national and international peer reviewed journals.

DR. SANATAN CHATTOPADHYAY

Dr. Sanatan Chattopadhyay is presently an associate Professor at the Department of Electronic Science, Calcutta University. His research interest is focused on Strained-Si and Nano-scale CMOS Devices, High-k Gate Insulator, Nano-science and Nano-technology and Sensors. Dr. Chattopadhyay has several research publications in national and international peer reviewed journals.

DR. SMARAJIT MANNA

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

DR. ARNAB PRAMANIK

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

DR. PIJUSH BASAK

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

DR. ARINDAM BHATTACHARYYA

Dr. Arindam Bhattacharyya is presently an Associate Professor at the Department of Zoology, University of Calcutta. He did M.Sc. in Zoology from University of Calcutta and Ph.D. from Bose Institute, Kolkata. During his academic career he has received several prestigious awards and Honors'. His research interest focused on Dendritic cell and T reg cell regulation in Infectious (malaria) and Non-infectious disease (Breast cancer and pulmonary fibrosis). Dr. Bhattacharyya has several research publications in national and international peer reviewed journals.

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Day to Day Program

Day 1 : Tuesday, December 20, 2016

09:00 a.m. – 09:45 a.m.	Registration
09:45 a.m. – 10:00 a.m.	Welcome Address Dr. Maitree Bhattacharyya, Professor & Director, Jagadis Bose National Science Talent Search, Kolkata
10:00 a.m. – 11:30 a.m.	'Evolution of Science since the days of Aristotle' Dr. Bichitra Kumar Guha, Professor of Physics & Dean, Faculty Affairs, Indian Institute of Engineering Science and Technology, Shibpur, Howrah
11:30 a.m. – 01:00 p.m.	"A fatty affair" Dr. Partha Chakrabarti, Senior Scientist, Cell Biology & Physiology Division Indian Institute of Chemical Biology, 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. Smarajit Manna, Student Advisor, JBNSTS, Kolkata; Dr. Arnab Pramanik, Research Associate, & Dr. Pijush Basak, Research Associate, Dept. of Biochemistry, Calcutta University, Kolkata.

Day 2 : Wednesday, December 21, 2016

09:00 a.m. – 10:00 a.m.	Registration
10:00 a.m. – 12:00 noon	Motivational Lecture Dr. Soumitra SenGupta, Senior Professor and Dean (Academic & Students Affairs), Department of Theoretical Physics, Indian Association for the Cultivation of Science, Kolkata
12:00 p.m. – 01:00 p.m.	Technical Write-up Session Dr. Gopal Chakrabarti, Assistant Professor, Department of Biotechnology and Dr. B. C. Guha Centre for Genetic Engineering & Biotechnology & Dr. Anindita Ukil, Assistant Professor Department of Biochemistry, University of Calcutta, 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. Smarajit Manna, Student Advisor, JBNSTS, Kolkata; Dr. Arnab Pramanik, Research Associate, & Dr. Pijush Basak, Research Associate, Dept. of Biochemistry, Calcutta University, Kolkata

Day 3 : Thursday, December 22, 2016

09:00 a.m. – 10:00 a.m.	Registration
10:00 a.m. – 11:00 a.m.	Motivational Lecture
11:00 a.m. – 12:00 noon	Lunch & Interaction
12:00 noon – 06:00 p.m.	Academic Visit to Variable Energy Cyclotron Centre, Salt Lake, Kolkata

Day 4 : Friday, December 23, 2016

09:00 a.m. – 10:00 a.m.	Registration
10:00 a.m. – 11:30 a.m.	"Photochemistry at Interface" Dr. Samita Basu, Professor Chemical Science Division, Saha Institute of Nuclear Physics, Kolkata
11:30 a.m. – 01:00 p.m.	"Guest Stars of our Universe" Dr. Pratik Majumdar, Associate Professor, Astroparticle and Cosmology Division , Saha Institute of Nuclear Physics, Kolkata
01:00 p.m. – 02:00 p.m.	Lunch & Interaction
02:00 p.m. – 05:00 p.m.	"Contested tracks, traffic jam, unpredictable motors, and frequent pocking - a glimpse of life' inside a cell" Dr. Krishanu Ray, Professor, Department of Biological Sciences, TIFR, Mumbai
05:00 p.m. – 06:00 p.m.	Summing up Session

Day 5 : Saturday, December 24, 2016

09:00 a.m. – 10:00 a.m.	Registration
10:00 a.m. – 11:30 a.m.	Motivational Lecture Dr. Pradyut Ghosh, Professor, Department of Inorganic Chemistry, IACS, Kolkata
11:30 a.m. – 01:00 p.m.	'Anker dhnadha ityadi' Dr. Arnab Chakraborty, Assistant Professor Applied Statistics Unit (ASU), Indian Statistical Institute, Kolkata
01:00 p.m. – 02:00 p.m.	Lunch & Interaction
02:00 p.m. – 06:00 p.m.	Project Presentation by the Participants Judge: Dr. Sanatan Chattopadhyay, Associate Professor, Dept. of Electronic Science, C.U., Kolkata Dr. Debajyoti Ghoshal, Asstt. Professor, Inorg. Chemistry Section, Dept. of Chemistry, J. U., Kolkata Dr. Arindam Bhattacharyya, Associate Professor, Department of Zoology, C.U., Kolkata

