

OUTREACH ACTIVITIES @
IISER PUNE

*...where tomorrow's
science begins today*



02

Outreach Activities @



As per the vision of setting up IISERs, IISER Pune integrates high quality research with undergraduate teaching to improve science education in India and to enhance the number and quality of future researchers of the country. One of the mandates of IISER Pune is to spread the joy of doing science, outside the Institute. Increasing awareness and dissipating knowledge about science that happens in research laboratories to students, teachers, parents as well as general public would improve scientific literacy, emphasize the importance of science and math in day-to-day life, and build a scientific temper in the country. IISER Pune strives to achieve this goal through its various academic and social outreach activities.



The Academic Outreach program of IISER Pune reaches out to students at all levels from schools and colleges, in urban and rural environments, giving them an exposure to laboratories at IISER Pune, conducting seminars on latest developments in science, organizing camps such as that of DST-INSPIRE to get students excited about science and to develop their inquiry abilities.

As part of outreach, IISER Pune also conducts workshops for post graduate teachers to impart training in theoretical and experimental aspects related to topics in science and math disciplines. The goal of these workshops is to expose teachers to state-of-the-art equipment and to update them on the latest techniques and developments in scientific research.

IISER Pune actively supports the efforts of organizations that carry out science outreach activities by participating, organizing, hosting or funding such activities.

IISER Pune also conducts social outreach as a way of giving back to society in more ways than one. A couple of voluntary organizations started and run by a group of faculty members and students of IISER Pune, along with help from other organizations, reach out to the underprivileged sections of society. They coach the participants on basic life skills, improve their language skills and math abilities, provide counseling and encourage them to be aware of science in day to day life.



SCIENCE MEDIA CENTRE

This centre was set up in IISER Pune with funding from DST for making audio / video recordings of various events, colloquia, lectures, workshops, summer schools, interactive sessions, conferences, technical sessions, science education modules, and for popularizing science. Some of the activities carried out by this Centre as part of Outreach are:

- Preparing Science Radio broadcasts through Vidyavani Radio FM, Community Radio
- Organizing workshops on “use of media for communicating science” for students of science, teachers and media professionals, for reporting science in print, audio, and video formats.

JOY OF SCIENCE AND FUN WITH MATHS LECTURE WORKSHOP



Joy of Science and Fun with Maths Lecture Workshop series is aimed at students in Class VIII, IX, X, XI, XII from schools in urban and rural areas of India. Talking to students about scientific and technological discoveries, their impact on human life, and the importance and relevance of science in today's world gives them a glimpse of the existing scientific world, and makes them curious and excited to ask questions and know more. This activity is organized at the venue of the schools. Several IISER Pune faculty members travel to these schools in remote areas to participate in this activity.

Several of our Mathematics faculty members hold lectures and workshops for students from Class VIII upwards, from schools in rural and urban areas all over India, to popularize mathematics and explain mathematical concepts and their applications in day-to-day life, by making mathematics simple, relevant and hands-on.



VISITS TO IISER PUNE BY SCHOOL, COLLEGE, UNIVERSITY STUDENTS AND TEACHERS



This is a regular year-round activity wherein students and teachers from all over India visit IISER Pune to learn about the institute and to gain exposure to various research areas, state-of-the-art laboratories, and high-end research equipment. The visitors are given a briefing about the admission procedures, courses, and infrastructural facilities at IISER Pune and then shown around the research laboratories. This has increased awareness about IISER Pune and the research areas being pursued at the institute. Students and teachers get interested in science and research and express their desire to consider science as one of their career options. Postgraduate students from colleges are given exposure to the use of specific research equipment of their interest and are encouraged to apply for our Summer Internship programmes.

Through a voluntary organization, Vidnyanvahini (www.vidnyanvahini.org), several school children from rural schools around the Pune area along with their teachers and volunteers from Vidnyanvahini visit IISER Pune. The schoolchildren are exposed to some simple experiments and a glimpse of research carried out at IISER Pune. Several faculty members and research students of IISER Pune participate in this exercise, which is greatly enjoyed by the school children.

EXPERIMENTS IN CHEMISTRY WORKSHOPS

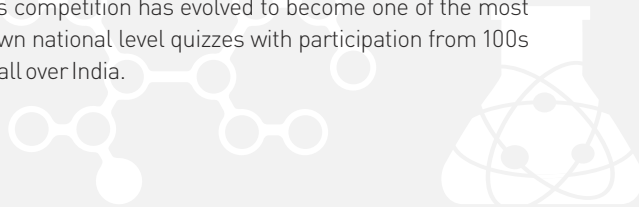


Demonstration of different exciting Chemistry experiments are held in schools, voluntary organizations, INSPIRE camps etc. to excite students about science and to explain the basic concepts of chemistry that they study in school curricula through actual hands-on experimentation.

MIMAMSA



Mimamsa is an inter-college science quiz conducted by the Science Club of IISER Pune. The aim is to make it the most conceptually challenging science competition at undergrad level in the country. The preliminaries of this competition are organized in 6-9 different cities in different parts of India, while the finals take place over two days in IISER Pune. Starting in 2009, this competition has evolved to become one of the most well-known national level quizzes with participation from 100s of teams all over India.



DST-INSPIRE INTERNSHIP CAMPS

These camps are held annually at IISER Pune for exposing selected science students of Class XI from Pune district to various fields of science and technology and the latest research developments in these fields. The focus is on giving them hands-on experimentation experience in IISER Pune labs, addressing and discussing with scientists and technologists their doubts and apprehensions about any area of science, mathematics or technology, and inspiring them to take up careers in Basic Science.



DST- KVPY (KISHORE VAIGYANIK PROTSAHAN YOJANA) CAMPS



These camps are held at IISER Pune for students of Class XI, XII and BSc I who have received the KVPY fellowship, for introducing them to several aspects of conducting basic research, getting to discuss and carry further their own research ideas with scientists working in the field, and to understand what it means to be a part of the research fraternity.

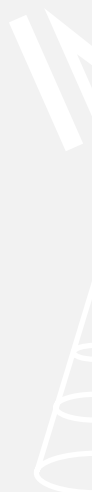
EXCITING SCIENCE GROUP (NCL-IISER PUNE)

Exciting Science Group is a group of volunteer scientists from the CSIR-NCL (National Chemical Laboratory, Pune, India) and from IISER Pune who wish to share the excitement of science with school children. The goal is not to “teach” science but to “excite” children. The hope is that these efforts will excite some children to take up careers in science and technology while others may grow up to cheer and support the progress of science. The current activities of this group include popular talks for school children; reaching out to selected local schools through talks and demos; mentoring school students for science fair projects, through science clubs in schools; and organizing research idea competitions for Pune school students.

LITTLE SCIENTISTS' CONFERENCE

The Moving Academy of Medicine and Biomedicine, Pune conducts a project on 'Scouting and Nurturing Science Talent in Rural and Tribal India.' This is a two-month summer vacation research program for class X-XII students from villages and tribal areas. Students are trained on performing laboratory tests, recording data, analyzing and reporting their results. Subsequently, they work on assigned projects relevant to areas such as health, disease and medicine.

IISER Pune strongly supports this endeavor by hosting a two-day Little Scientists' Conference where each student participating in the above program, presents his/her own work as an oral presentation and a poster. Nearly 40 student presentations are held, which are evaluated by scientists from the Moving Academy and IISER Pune. Along with senior colleagues, parents and teachers of the “Little Scientists” are invited to attend this conference to appreciate the efforts, learning and confidence that these young students have achieved. For students living in remote areas, IISER Pune provides accommodation and boarding. The First “Little Scientists' Conference was held at IISER Pune from June 25-26, 2013 and the Second Little Scientists' Conference was held at IISER Pune from July 7-8, 2014.



TEACHER TRAINING WORKSHOPS



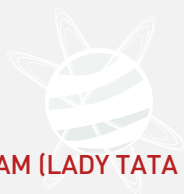
Experimental workshops are held in Biology, Chemistry and Physics for post-graduate teachers from colleges and universities in order to update college and university teachers about the latest developments in science, particularly in terms of research techniques, instrumentation, and methodologies, so that they can pass on this knowledge to their students, and have hands-on experience of the techniques they teach in classrooms. This also encourages teaching professionals to get involved in research.

IISER Pune faculty members have also participated in undergraduate Teacher Enrichment Workshops in Mathematics.

WORKSHOPS ON INQUIRY ORIENTED EDUCATION (IOE) FOR SCIENCE EDUCATORS, TEACHERS AND SCHOOL STUDENTS

Workshops are organized for Science Educators, school teachers and students from Class VI onwards for understanding and designing course curricula which are concept based and inquiry driven; for developing concept based and inquiry-oriented teaching and learning modules using science topics from prescribed text-books, and testing these modules in actual classroom settings. The aim is to create a group of educators, teachers and students who develop the skills of inquiry, observation, data collection, data analysis, and critical review before they accept/reject "facts" or "beliefs".





JRF SCHOLARS MENTORING PROGRAM (LADY TATA MEMORIAL TRUST-IISER PUNE)



The Lady Tata Memorial Trust, which was established by Sir Dorabji Tata in 1932 in memory of his wife, Lady Meherbai, funds international and national research programs by awarding Post-Doctoral Fellowships (two year grant), and Junior Scholarships (5-year grant leading up to Senior Scholarship, and submission of Ph.D. studies thesis) to researchers working on projects related to the alleviation of human suffering from disease. LTMT also sponsors Teacher Training Programs for College and University teachers for updating their technical knowledge and skills in state-of-the-art-research.

IISER Pune hosted the First Junior Research Scholar Mentoring Program for LTMT Junior scholars, where their research work was presented and evaluated by mentors from LTMT Scientific

Advisory Committee and Faculty from IISER Pune. The JRFs were also given an exposure to IISER Pune research labs. IISER Pune also hosted the LTMT sponsored Teacher Training Workshop, for nearly 45 post-graduate teachers, on Cancer Biology, by organizing talks by eminent scientists from IISER Pune working in cancer biology, and an Experimental Workshop on Laboratory Techniques used in Cancer Research. IISER Pune hopes to continue hosting such events on a regular basis in the future.

INSA RURAL SCHOOL OUTREACH PROGRAM (INSA-IISER)



To celebrate the Year of Science (2012-2013), Indian National Science Academy (INSA) has launched a scheme under which lecture-cum-interaction meetings are organized by INSA Fellows for young students and teachers of schools/colleges in remote/rural areas.

A few IISER INSA Fellows actively participate in this program, by travelling to remote schools and colleges, and delivering exciting interactive sessions on latest developments in science, to students and teachers. More than a hundred such lectures have been conducted by IISER INSA Fellows in several villages in Maharashtra and elsewhere.





INTER-COLLEGIATE POSTER COMPETITIONS, ESSAY COMPETITIONS, SEMINARS



Intercollegiate poster competitions and essay competitions are held during Science Day and Mathematics Day celebrations. This gives an exposure to college students about the research areas being pursued at IISER Pune, current developments in various science disciplines and about latest research technologies and informs the students of research opportunities available to them.

INVITED TALKS BY IISER PUNE FACULTY MEMBERS



Faculty members are invited to various urban and rural schools, colleges, universities, institutions in India and overseas to talk to

students about their research work, to emphasize the importance of basic research, and to popularize science and motivate students to pursue a career in science and mathematics by informing them about career opportunities in science.

MENTORSHIP AT OLYMPIAD TRAINING CAMPS, NATIONAL AND INTERNATIONAL COMPETITIONS

Several IISER Pune faculty members have been invited to mentor students competing in international Olympiad events and in other national and international events.

PUBLIC OUTREACH LECTURES



Lectures are held in English and also sometimes in Marathi for the general public in various fields of Science and Mathematics. Nobel laureates / Fields medal winner's contributions to the disciplines of Science and Mathematics are highlighted and discussed.





DISHA

Disha is a voluntary organization started and run by IISER Pune students. It provides a platform for the students to engage with children of economically underprivileged communities and to share the gift of education with them. The main activity of the Disha volunteers is to conduct regular evening and weekend classes for children living in slums near the institute. These classes help the children, who are mostly first generation learners, keep up with what they are taught in their school and also to learn science through fun filled activities. Interestingly, one of the children who was attending Disha classes for the past couple of years was successful in obtaining admission to IISER Pune in the 2014 academic year! Another of Disha's programs, which is hugely popular with the students, involves the students visiting villages around Pune during weekends and conducting science workshops in schools over there. These workshops have hands-on science activities, nature walks and film screenings. This activity gives IISER Pune students a flavor of village life; at the same, it gives the village children an opportunity to have fun and get excited about science!



PRARAMBH focuses on developing basic life skills, English and Math of less privileged municipal school children, from Class I to XII, living in bastis. Students are taught in IISER Pune classrooms, given lunch, and picked up and dropped home by IISER Pune buses every Sunday. Excursions to science museums, drawing competitions, doing Science through toys, storytelling, logic building games are also included. Faculty members and student volunteers from IISER Pune, Infosys, and L&T contribute to teaching these children. At the end of the academic year, an IISER Pune sponsored picnic is organized for these children to Pimpri Chinchwad Science Park or elsewhere.

PRUTHA is an initiative by IISER Pune students for making the community conscious of its environment and making it a greener place to live in. Several activities like newspaper collection and recycling, Parvati hill clean-up and planting saplings and drives to control noise pollution and minimize plastic on campus have been organized over the years.

Related links:

Disha: www.iiserpune.ac.in/outreach/disha;
<http://iiserpunedisha.wordpress.com/>

Prarambh: <http://www.iiserpune.ac.in/prarambh/Prarambh/Prarambh.html>

Mimamsa: <http://mimamsa.iiserpune.ac.in/>

Exciting Science Group: <http://www.excitingscience.org/>

IISER Pune's Science Media Centre:
<http://www.iiserpune.ac.in/outreach/media>

Sci Ed Workshop on YouTube:
<https://www.youtube.com/channel/UCApqaCflm3mVTnfh9VBfAPg>

Programs on Community Radio:
www.youtube.com/channel/UCUo2J_DdqInJau6xwvLqqA

For more details, contact outreach@iiserpune.ac.in



Photo Courtesy : IISER Pune Students, Staff and Faculty



**INDIAN INSTITUTE OF
SCIENCE EDUCATION AND RESEARCH**

(An Autonomous Institution, Ministry of H.R.D., Govt. of India)

Dr. Homi Bhabha Road,
Pashan, Pune - 411 008, India.
Phone: +91-20-25908001

www.iiserpune.ac.in