

## **About the New Indian Institutes of Science Education and Research at Kolkata and Pune**

Sushanta Dattagupta, Director,  
Indian Institute of Science Education and Research, Kolkata, India

The Government of India, through the Ministry of Human Resource Development (MHRD), and based on the recommendation of the Scientific Advisory Council to the Prime Minister, decided to create two Science Institutes. Patterned after the Indian Institute of Science (IISc), Bangalore, in terms of high quality research in basic sciences, but with additional education programs in the form of (i) an integrated five year Masters curriculum following class XII of our school system, (ii) Post B. Sc. integrated Ph. D. curricula, and (iii) a full Ph. D. program after M.Sc. or an equivalent degree. Located at Kolkata and Pune these two institutes are named Indian Institute of Science Education & Research (IISER). Each IISER will be an autonomous institution and award its own degrees. The financial outlay for each IISER is around Rs. 5000 millions over a period of five years, with the aim that exceptional teaching and research talent bolstered by state-of-the-art research laboratories, library and computational facilities are created.

The central theme of the two IISERS is to integrate education with research so that undergraduate and postgraduate teaching as well as doctoral and postdoctoral research work are carried out in symbiosis.

### The Curriculum

The vision is to initiate, for the first time in independent India, science universities with a borderless and flexible education program and with a teacher-to-student ratio conducive to individual attention. Efforts will be made to provide comprehensive core courses in the first two years of the integrated Masters program in all areas of basic sciences, viz., chemical, physical, mathematical and biological sciences; following these, the students can branch out to contemporary areas of interdisciplinary studies. In addition to the basic courses, IISER will also have courses in the interdisciplinary areas of earth, planetary and environmental sciences, computational sciences, engineering and humanities/social sciences.

### Integrated Learning and Research

With a firm foundation in basic sciences and mathematics in the first two years, the students will be able (under counseling) to choose the subject in which they want to major including interdisciplinary areas. An early exposure to research through summer training in other laboratories and institutions in the country, including industrial organizations and counseling schemes for major R & D career opportunities is an attractive feature of the program.

Through liaison with research laboratories under the Departments of Atomic Energy, Space, Science & Technology and Biotechnology, as well as Council of Scientific & Industrial Research, opportunities will be created for job placement for students on the basis of campus interviews.

The fifth year of the integrated Masters program will be devoted to full time research, or a technical project or some specialized training following which the students will have to write a dissertation. This research component is expected to result in lowering of the average age for obtaining a Ph. D. degree, for those students desirous of pursuing a doctoral program at IISER.

Provisions for accelerated development for truly deserving individuals will be a special feature of the program. The IISERs will maintain high standards of education, training and scholarship comparable to the best Indian institutes and international universities in different areas of learning.

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Editorial Note: The reader may note that the 20<sup>th</sup> March issue of Chemical Engineering & News of the American Chemical Society has an article on IISER by Amanda Yarnell that is based on interviews with Professors Sushanta Dattagupta, C. N. R. Rao and others.