INDIAN INSTITUE OF TECHNOLOGY JODHPUR

FIRST CONVOCATION

JULY 10, 2013

DIRECTOR'S REPORT

Shri Pranab Mukherjee, President of India, Smt. Margaret Alva, Governor of Rajasthan, Shri Ashok Gehlot, Chief Minister of Rajasthan, Chairman, Board of Governors of the Indian Institute of Technology, Jodhpur, Members of the Board of Governors and of the Academic Senate, my dear graduating students and their families, faculty, staff, and all our distinguished guests-- I heartily welcome you all on the occasion of the First Convocation of the Indian Institute of Technology, Jodhpur. We are indeed very privileged to have Shri Pranab Mukherjee, the President of India, gracing this occasion as the Chief Guest, and I would like to thank him for accepting our invitation with great enthusiasm.

The need of the hour: Higher education plays a significant role in today's world. If we are to remain relevant as global leaders, the need of the hour is not merely to be a part of international knowledge systems, but also to meet present-day challenges rooted in our own society. Thus, it becomes imperative for higher education today to integrate inquiry, research and scholarship - not merely as generators of knowledge, but as markers which can make a difference to society.

Vision and mission: Redefining conventional paradigms: The Indian Institute of Technology Jodhpur (IITJ) was established in the year 2008 as a traditional IIT, with three branches at the undergraduate level (Computer Science and Engineering, Electrical Engineering and Mechanical Engineering). In the middle of 2009, however, IIT Jodhpur took on the agenda of redefining these traditional boundaries. This was because we strongly felt that in today's world, it was crucial to understand how a synergy between diverse academic disciplines could provide real-time solutions to societal problems. Over the last five years, therefore,

we have evolved into an institute which chooses to look beyond conventional paradigms, by providing opportunities to our students and faculty to witness and evaluate the interaction, transformation and integration that occur between science, technology, social sciences, liberal arts and classical studies. By integrating skill sets which enable students to appreciate a spectrum of concepts from traditional engineering to consciousness studies to music, IIT Jodhpur's academic curriculum is unique and trans- and multi-disciplinary in nature. We see ourselves as not only being an institute of excellence in higher education, but one which is deeply committed to the idea of touching the lives of "The Last Person", the poorest and most deprived member of our society. We see our unique approach as one that fosters a critical and holistic understanding of problems, and one that has the potential to make a profound contribution to inclusive development in our country.

Centres of Excellence (CoE): IIT Jodhpur promotes teaching and research through inter- and multi-disciplinary Centres of Excellence. These Centres of Excellence transcend the compartmentalization of education and disciplines brought about by a conventional "Department" oriented structure. Their aim is to use technology to evolve affordable solutions that impact the quality of life of our poorest fellow citizens.

The Centre of Excellence in Energy: This Centre strives to harness renewable solar energy for various utilities at an affordable cost. Funded by the Asian Development Bank (ADB), an international Centre for Solar Energy Technologies (CSET) is being established at this campus to promote innovation and entrepreneurship in this field. It is a matter of great pride that CSET has been designated as a Centre of Excellence in Solar Thermal

the Ministry of New and Renewable Energy (MNRE) of the Goverment of India.

The Centre of Excellence in Information and Communication Technology: This Centre works around the concept of "functionality and cost-driven" research and development. It focuses on low-cost device design in the fields of healthcare, hardware design, energy management, smart buildings and cultural heritage preservation. The Centre works on several areas of research, including robotics and video indexing, and one of its projects that deserves special mention is the e-Asha project.

Centre of Excellence in Systems Science: The CoE in Systems Science was created in order to promote a systems approach to solve real-world problems. The Centre has several projects at hand, including the generation, storage and distribution of hydrogen, a sponsored project by DST, Government of India. The CoE-SS is perhaps the first of its kind in India, and has created a novel platform by evolving an interdisciplinary approach to both research and learning.

Centre of Excellence in Biologically- inspired Systems Science: The broad objective of this Centre is to design novel, adaptive and sustainable technology, inspired by biological systems and processes. In addition to, for example, projects that involve the study of microbial fuel cells, the Centre also seeks to explore and understand phenomena like cognition and consciousness, philosophy of science, quantum information and quantum biology.

Proposed Centres – A Centre of Excellence in Art, Culture and Heritage Studies, a Centre for Water, and a Centre for Socio-Cultural Systems: The proposed Centre for Art, Culture and Heritage Studies not only engages in the restoration and

preservation of arts, but also seeks to establish a consilience between arts and sciences, in particular. This Centre is in the process of establishing a platform to work with other global institutions in U.S.A. and Europe.

Academic Programs: In addition to the existing programs, IIT Jodhpur has meticulously incorporated system design principles, socio-scientific integration, entrepreneurship and team building as a part of its academic structure. We offer programs at the Bachelor, Master and Research levels. B.Tech. programs in Computer Science and Engineering, Electrical Engineering, Mechanical Engineering, Systems Science and Biologically-inspired Systems Science are a part of the academic structure. Ours is one of the few institutes in India that has taken serious initiatives in offering B.Tech programs in emerging interdisciplinary subjects like Systems Science and Biologically-inspired Systems Science. A minor program in Art, Culture, and Heritage is in the offing. The institute also offers interdisciplinary M.Tech and Ph.D programs at the Centres of Excellence in Energy, Information and Communication Technology, Systems Science and Biologically-inspired Systems Science.

Summer and Winter Courses: The Institute offers a wide range of summer and winter courses conducted by experts from academia, as well as from industry. The courses expose students to current and emerging issues like sustainable development, new and emerging technologies, socio-cultural issues and communication skills; most of these are rarely taught in standard settings.

Partnering Internships: The academic curriculum of IIT Jodhpur provides our students internship opportunities in the sixth

semester. Our students have interned with some top International universities and institutes in the USA, UK, Canada, Europe and Japan. IIT Jodhpur also extends invitations to international students for internship programs. The exchange of ideas between students and scholars from abroad has resulted in the creation of a shared platform, where indigenous problems are explored with global expertise, thereby taking research and teaching beyond classrooms.

Job creators, not job seekers: Among the challenges that we face, the toughest perhaps is the task of bringing about a change in the mind set of students, parents and the teaching community. While we are proud to state that our students are hired by leading national and international companies, we encourage our students to reinvent themselves, to explore and tap their individual potential in order to solve social problems. IIT Jodhpur wishes to create a scenario where students generate their own business plans. We believe in the Gandhian principle of creating an environment of distributed and shared prosperity, and in engaging creatively with the community.

Research Initiatives: IIT Jodhpur started the Undergraduate Research and Innovation (UGRI) program in 2011 with the objective of promoting research and innovation among undergraduate students across the country. Conducted every summer, this program helps students from all over India to improve their professional knowledge and skills by using the infrastructure of IIT Jodhpur.

Research and Development Activities: The highest priority of our institute is Research and Development (R&D). At present, the

Institute has forty projects amounting to about Rs.110 crore. As mentioned earlier, one of the central themes of R&D at IIT Jodhpur is to initiate low- cost, sustainable technologies that benefit society. IIT Jodhpur serves as a research hub for academic and industry-based research, both from institutes and companies within India and outside. Some of our projects include a UNICEF-sponsored ASHA project and the National Solar project with MNRE.

Collaboration: IIT Jodhpur has signed a number of Memoranda of Understanding with several reputed universities in Canada, USA and Europe. The institute also partners with several national and multinational players for indigenization and expansion. Some of our national companies include the Indian Oil Corporation and Bharat Heavy Electricals Limited.

Workshops and Conferences: As a part of its R&D activities, the Institute has organized a number of workshops and conferences, including international conferences in Art, Culture and Heritage, Quantum Biology, Computational Materials Design and Engineering. These workshops have given us an opportunity to facilitate scholarship and networking between different research communities. The rich inputs from the academic community – both national and international--have been extremely encouraging and positive, and have contributed to the development of a unique curriculum that undoubtedly makes IIT Jodhpur stand out in the field of higher education.

Faculty: The faculty of IIT Jodhpur, who form the core knowledge base of the institute, are drawn from eminent national and international universities. With specialization in diverse

disciplines, the Institute has scholars in the field of engineering, sciences, social sciences and liberal arts. The Institute also welcomes guest faculty members from both within India and abroad to engage in teaching and research activities.

Awards, Honours and Fellowships: Our faculty members have been the recipients of several academic honours, awards and fellowships. IIT Jodhpur is proud of Dr. Amit Mishra who is the recipient of The INSA-Young Scientist Medal Award (in Cellular and Molecular Biology), Innovative Young Biotechnologist Award, the ICSA – Best Young Scientist Award for New Biology and the INSA Japan award. Dr. Sandeep Yadav has been the recipient of the Graphical System Design Achievement Awards India by the National Instruments Laboratory. Some prestigious fellowships won by our faculty include the Ramalinganswami Fellowship awarded to Dr. Amit Mishra, (Department of Biotechnology) by the Ministry of Science and Technology; the Einstein Foundation Research fellowship, Germany awarded to Dr. Bibhas Adhikhary, and the Alexander van Humboldt fellowship, Germany awarded to Dr. Monika Sinha.

Publications and Patents: Our faculty members publish copiously and have filed several patents as well.

Students as global leaders: Among its students, IIT Jodhpur encourages an equitable balance between academics and extra-curricular activities. We, at IIT Jodhpur, attract some of the brightest young people in the country. By supporting creative ideas that facilitate out-of-the-box thinking, IIT Jodhpur seeks to encourage responsible leadership that will benefit both the community and the nation. The IITJ-Taj Conclave has played an

important role in taking this dream forward. Held over the last three years, the event seeks to bring knowledge and practice onto a common platform, making it possible to discuss issues significant to our nation.

I.D.E.A.S. – Stewarding Technology for Community: The Innovation and Incubation Centre, under the name I.D.E.A.S. (Innovators' Destination for Entrepreneurship and Amelioration of Society) of IIT Jodhpur seeks to build up momentum in promoting innovation in entrepreneurship. The Centre provides the necessary physical and financial support to students in developing business ideas that address issues of significance in our society. It aims to provide young students with a platform where they can outline their ideas in the field of science and engineering and showcase these to industry experts who then help them to develop a feasible business model. I.D.E.A.S. functions in collaboration with the State Government of Rajasthan, which partially fund the initiatives.

Community Fostering: A unique social initiative taken by the students of IIT Jodhpur is *Parivartan.* This attempts to sensitize and create awareness about education among underprivileged sections of society. Reaching out through teaching, youth counselling, and parent counselling, one of the objectives of *Parivartan is* to create a model village that can break stereotypes and provide sustainable solutions to the community at large.

Student Accolades: We are proud of our students for their exemplary achievements in co-curricular and extra-curricular activities. Our students bagged three silver medals in the Inter-IIT Sports Meet this year. Several prizes have been awarded to our students at national level inter-university cultural festivals as well.

Student welfare: To help students cope with professional and personal stress, IIT Jodhpur's counseling services team provides personalized guidance and resources. The counseling service is a voluntary organization formed by a group of students, and guided by faculty members.

New Beginnings: IIT Jodhpur will have its own residential campus of about 872 acres of land near Nagaur in Jodhpur in the forthcoming years. The campus is being planned as an environmentally sustainable campus, with zero net water, energy and waste. Abundant use of solar/renewable energies to reduce grid dependence is a part of the plan. On 16 April 2013 Dr. Pallam Raju, the HRD Minister laid the foundation stone for the first building in the permanent campus. We believe that our new campus will not only be a symbol of academic excellence, but will also act as a cultural melting pot. An eco-village, Arts and Culture Centre and an International Cultural Activity Centre will be a part of the new campus. In terms of administration, the Institute aims to make net governance zero, by developing a flat organization which is both self-responsible and self-accountable.

The First Convocation of IIT Jodhpur: This First Convocation of IIT Jodhpur is a historical moment for us. We have 208 undergraduates and 29 postgraduates who will receive their degrees. To all the graduands today: this is the most defining moment of your academic lives. It is a matter of great joy and pride to see bright young students graduate from the portals of IIT Jodhpur, transformed by their stay here, and ready to face the challenges of the world. On behalf of the Institute, I offer my warmest congratulations to all the graduating students and their proud parents. Never forget, my young friends, that you are the brand ambassadors of this Institute. You carry with you the unique

distinction of being the first batch of alumni to pass out of its portals. We are sure that this special bond you share with your alma mater will continue wherever you are. As the youth of this beautiful nation, you are the torch bearers of change and I urge you to live your lives with honour and honesty. We hope that your education here will make a difference to the world at large, and wish you good luck in all your future endeavors. May God be with you, and shower His Grace and Blessings on you always.

Jai Hind!

भारतीय प्रौद्योगिकी संस्थान जोधपुर

Indian Institute of Technology Jodhpur

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