

## **Doshi: Public institutes have to be more accessible**

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Initiated in 2007 by the Department of Biotechnology (DBT) and Indo-US Science and Technology Forum (IUSSTF), the Stanford-India Biodesign (SIB) program encourages multidisciplinary approaches to biology and medicine by training the next generation innovators in India. The program is dedicated to producing leaders in medical technology through courses, fellowships and one-on-one mentorship. It is open for those who have an interest in the invention and early-stage development of new medical technologies.

BioSpectrum spoke to Mr Doshi about the SIB fellowship, outcomes, and entrepreneurship in bioscience sector among various other things. Given below are excerpts of the discussion.

#### **How does the SIB fellowship program work? What has been the outcome so far?**

The fellows work on a multidisciplinary team joining other innovators with a combination of engineering, medical and business backgrounds. They spend the six months time equally at Stanford University and India. While examining the clinical needs, the teams identify opportunities for medical technology innovation. The teams work closely with Stanford University, All India Institute of Medical Sciences (AIIMS) and Indian Institute of Technology (IIT) Delhi faculty and get a world-class mentorship across globe.

SIB has so far trained 24 fellows. In addition, 28 interns have worked on projects at SIB in India, and imbibed much of their learning from the fellows and the SIB India faculty. The program has resulted in the development of 12 devices so far.

About 20 provisional patents have been granted to cover these devices, and five patent cooperation treaty (PCT) applications have been filed. The five products are in various stages of trials. Two companies have been formed, and one product has been licensed for sale and manufacture by Hindustan Latex to the ministry of health.

It is worthwhile to mention that despite limited capital, the program has managed very well. It has come a long way from being attended by the close to 35 people in its first edition to an overwhelming response in the subsequent years. With each passing year, we are gaining momentum. Moreover, I think the result of the efforts will be visible in another five years time. I am sure the outcomes will reach its peak in the next 10-15 years.

### **What are the challenges before SIB in grooming entrepreneurs ? Where is the industry heading?**

What I see is that, though we are increasingly working towards creating new clusters of innovation platforms, we still don't have enough mentors for the innovators and potential entrepreneurs at grass root level. However on a positive note, it is also a fact that Indian bioscience industry is catching up steadily.

There are tremendous opportunities in the clinical and contract research industry. The medical technologies too have a big role in modernizing the healthcare and meeting the requirements that arise occasionally.

### **How can public institutes contribute to this success?**

The public institutes have to be more accessible for the industry. The focus apart from publications has to be on the creation of more translational facilities. The designing of new instruments in the laboratories has to be in sync with the requirements in the industry. These institutes, no doubt, are full of talent pools and I am sure with the changing times, new trends will emerge.

### **Is there a missing link in educating the students about biodesigning? Do you see any positive changes for future?**

The education in India requires updates on patents, biodesigning and entrepreneurship. At the same time it is heartening to see that the DBT and Government of India are keen to introduce the biodesign teaching methodologies in the curriculum of bioengineering and medical schools.

A national biodesign alliance has been established by DBT with various partners such as the Indian Institute of Technology (IIT), New Delhi; IIT, Madras; AIIMS, New Delhi; Regional Centre for Biotechnology (RCB), Faridabad; Translational Health Science & Technology Institute (THSTI), Faridabad; International Centre for Genetic Engineering and Biotechnology (ICGEB), Delhi; Indian Institutes of Science (IISc), Bangalore and Christian Medical College (CMC), Vellore, to coordinate with each other on the biodesign programs in the country.

We have also designed the online teaching modules for medical fraternity, now awaiting the final nod from the regulatory and policy authorities.