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Stanford Univ, DBT India program is a big hit'

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Dr Rajiv Doshi, executive director (US), Stanford-India Biodesign (SIB), and consulting assistant professor, Stanford University, US, was one of the many eminent individuals who attended the recently held 6th Annual Medtech Summit at New Delhi, India. Dr Doshi is also founder and chief scientific officer of Ventus Medical, a venture capital-backed medical device company in California, US.

While speaking on the sidelines of the event Dr Doshi talked about the SIB fellowship, outcomes, and entrepreneurship in bioscience sector among various other things. 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 medical technologies. Following are the 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 an equal duration of six months at Stanford University and in 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, and get world-class mentorship across the 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.

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 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. I am sure the outcomes will reach its peak in the next 10-to-15 years.

What are the challenges before SIB in grooming entrepreneurs? Where is the industry heading?
What I see is that, although 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 the grass root level. However on a positive note, it is also a fact that the 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. I am sure that the institutes boast a substantial talent pool and I am sure that 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 the Government of India are keen to introduce 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 Center for Biotechnology (RCB), Faridabad; Translational Health Science and Technology Institute (THSTI), Faridabad; International Center 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 the medical fraternity and are now awaiting the final nod from the regulatory and policy authorities.