

We need to have more industry and academia interactions

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In order to address the rising career concerns of many biotech students all over India, BioSpectrum conducted a parallel session between academia and industry to bring out some answers.



BioSpectrum interacted with Lovely Professional University (LPU), that claims to be India's largest best private university, based in Jalandhar, Punjab. It offers undergraduate, integrated and post graduate courses in biotechnology, amongst many others.

Alongside, Murli Sundrani, Director, BD Life Sciences- Biosciences shared the industry perspective of the career opportunities available for biotech students.

Excerpts of the interview-

1. Are the students less aware of the career opportunities after they complete their post-graduation in biotechnology or related fields?

LPU- Without any doubt, even after completing their graduation programmes, majority of bio-tech students are seen aware about career opportunities in the field. They not only have understanding about emerging and upcoming technologies in the diverse areas of biotechnology but also have clarity about placements and entrepreneurship in the related field. Students are even seen clear about the particular industries working in biotech and allied sectors, that is why they prefer these programmes. In Indian scenario, students try to explore beyond the text books and strengthen their interest in the area to get well settled. However, excessive access to the social networking sites sometimes diverts students' attention to explore other, seemingly, lucrative career opportunities than in their own area.

BD Biosciences- Students have limited awareness and restricted view of possible opportunities ahead of them which makes it challenging for them to think beyond. They either look for wet laboratories for research or to conduct experiments, or opt for back office work in biotechnology. Only few of them know are well informed on sales, marketing and customer facing opportunities they can explore as biotechnologists.

2. Most of the biotech students take up PhD after post graduation. Is it purely because of passion for science, or due to lack to opportunities to earn money?

LPU- Biosciences students are more research oriented as compared to those of biotechnology. So, biosciences students are seen to be passionate to take up Ph. D/research pursuits. On the other hand, as biotechnology is a multidisciplinary sector, so it is not lacking job opportunities. However, there is a big gap in preparing bio-technology students as per the need of stakeholders.

BD Biosciences- I believe they pursue PhD. mostly to continue their academics, carry forward in order to secure the right career guidance at the right time. During their PhD career, they often come across people who can provide them with career blueprint, show them a career path outside the academia, roles where they can contribute to the industry. Such a career guidance then opens up their thinking and allows them to consider the industry jobs. However, a small percentage might pursue PhD only because of their passion for science.

3. With so much diversification taking place in education, what kind of career choices students can make after completing Master's degree in biotechnology?

LPU- Biotechnology is an immense blend of biological sciences and engineering; hence, biotechnology students get opportunity to innovate and research in any of the area in science & technology. Additionally, there remains a wide scope of entrepreneurship along with industry placements and higher education. The future of Biotechnology has been alluring the technocrats to explore the biological systems in various facets to advance the knowledge in sectors including healthcare, agriculture and pharmaceuticals. It has been evidenced by the economic growth of biotechnology in India. The financial year 2015 has estimated bio-tech industry value nearly 7 billion US \$ which is expected to grow to 100 billion US \$ by the Financial Year 2025.

BD Biosciences- Post-graduation courses in biotechnology alone can open a plethora of career opportunities. A post-graduate diploma or management course, can further widen the scope for them. They can join sectors such as medical devices, life sciences or pharmaceuticals. At BD, we hire many biotechnologists as application scientists or specialists who are armed with an additional qualification in management. Some of them with their expertise make very good candidates for sales, which is Key Account Management role and adds value to the organization that is very customer-centric.

4. Are biotechnology students trained well during their academic years to get absorbed efficiently in the industry, or is there a gap? If yes, what can be done to help the students?

LPU- As for the School of Bioengineering and Biosciences at Lovely Professional University is concerned; it offers various pathways (set of courses) to its students to opt in the very initial years of their programmes. As such, students are trained in the focused direction of their respective interests to pursue higher education, or industry placements, or competitive examinations, or public service units, or entrepreneurship. Most importantly, we suggest that theoretical burden needs to be reduced and problem solving ability should be inculcated among students by assigning them real time societal challenges in the form of regular assignments. From the very beginning they should be ignited to analyze about their own interest and the specific area they wish to adopt as a career.

BD Biosciences- Institutes must encourage in equipping students to apply their knowledge and learning. Alongside, we also need to have more industry and academia interactions. Every year, we conduct the BD Horizon Global educational tour that provides opportunities for researchers to join experts from BD and the peer community to explore and discover wide-ranging approaches and opportunities in multiple streams – one of them being the multicolor flow cytometry workshops. While conducting placements for biotech students, we look into their ability to deal with ambiguity, response to market situations, and most importantly applying their knowledge in the real world. It is not only about their aptitude, but it is more about their attitude.