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# Ã¢â?¬Å?I am smitten with biotechnologyÃ¢â?¬?

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**Ã¢â?¬Å?I am smitten with biotechnologyÃ¢â?¬?**



"In the game of science, it doesn't matter whether you win or lose. All that matters is if you actually go beyond your abilities," said Dr Watson, when he was asked regarding his feelings on the discovery of DNA double helix structure. He was a zoologist who had gone beyond his abilities to establish a chemical structure.

DNA had become a very common term in the 1990s, at that time I was doing my schooling in a CBSE affiliated school in Amritsar, Punjab. I remember, how even the pop-stars were singing songs containing DNA as a reference in their lyrics and everyone was in awe with the completion of the Human Genome Project. 1990 was the time when human's victory over nature was the key highlight and everything was so inspiring that my young brain had only one question, "How did they succeed in discovering such a tiny element of life?"

Simultaneously, my education in physics, chemistry and biology was going on and this was when I learnt about biotechnology, a field where biology was blended with technology in order to expose the deepest secrets of nature. Immediately, I was smitten and when I completed my tenth grade, it didn't take me long to decide that I needed to enter medicine field since my grandfather had been a spiritual soul who had often tried to give explanations on life, taking science as a medium and my parents had owned a renowned medical diagnostic centre in the city.

It was during my high school days that the concepts of biology cleared up dramatically in my mind. I remember how I used to spend hours reading the science section in the newspapers and the ever-growing advancements in agricultural techniques (protoplast fusion, cell cultures or inter-generic hybridization) and animal biology understanding (artificial insemination, birth of sheep Dolly, and identification of down's syndrome as a chromosomal disorder) had deeply caught my interest. I knew that if there was anything that I wanted to do in my life, then that was in the field of biotechnology. Soon after, when all my classmates struggled to be an MBBS doctor, I boldly negated that option and opted for a bachelors in biotechnology. I was sure that I didn't want to limit myself with something that has already been discovered; rather I wanted to explore the newer possibilities while taking the existing literature as a reference.

Firm in my opinion, I began learning the techniques of biotechnology in DAV College, Amritsar, which at that time had one of the best-equipped labs in the city. During my three years there, we were made aware with the concepts of recombinant DNA technology and the fact which really fascinated me was how the quick discovery of DNA (which during the 1940s and 1950s was the most sought after molecule) had started a revolution. This revolution was so intense that it appeared as if everyone was talking merely about biotechnology. One evening, my grandfather told me about the "Telomere theory of ageing" which I found so interesting that I wanted to learn more about chromosomes and so chose chromosomal disorders as my final project for my bachelors degree. During one of the days when I was isolating a DNA, just like that, I decided that I would go abroad for my masters.

Completing my bachelors with a good score, I entered for my Masters in England and the tiresome experiments that I did there included fermentation processes, DNA isolation techniques, PCR reactions and cell cultures. We had isolated colonies and had identified species using selective mediums, and all through these one-and-a-half years, I was either seen pipetting in the laboratories or standing by the gel-doc system. Time had run so fast that I hadn't realized the arrival of the final semester where I was told to work on a thesis.

It is believed that when the passion is strong, nature begins to open up the opportunities on its own. For my final masters' thesis, Dr Caroline Orr, a renowned environmental biotechnologist became my mentor, under whom I did the isolation and identification of denitrifying bacteria bearing the genes NirK and NirS, to understand how the environmental factors plus the use of chemicals and different farming methods influenced the diversity of these denitrifying bacteria, which could have a devastating effect on the nitrogen cycle as well.

My final thesis had encouraged me so much that I was actually playing some part in understanding the ways a human could safeguard the planet Earth that I wanted to do PhD on a similar topic. I applied in the Universities of UK and Canada and some of them accepted me as well, but the constant reference of Indian authors in the biotechnological discoveries had given birth to a belief in me that India had a major scope in this area. I could sense the potential in the Indian students and researchers-being an Indian myself. I had observed the keenness and minuteness in our observation, which definitely underlines a success in any scientific discovery.

Therefore, I decided to come back to my country but sadly, in India most of the universities are merely producing students for foreign jobs only. I didn't want to enter a place where biotechnology was nothing but an extra subject, but in fact I wanted an established university, dedicated to biotechnology where research was a passion of the teachers as well. My desire must have been too passionate, because this was the time when I discovered about Shoolini University of Biotechnology and immediately requested the vice chancellor Dr Khosla for giving me an appointment to see him. Within a week of my return

from England, I was fortunate enough to find such a kind and far-sighted man as Dr Khosla, who had a hearty discussion with me regarding my future objectives and introduced me to all the instruments the university was equipped with. I was so impressed with the campus, the infrastructure and the dedication of everyone here that I entered the entrance examination for enrolment in a PhD program. Today, I am a proud student at Shoolini and I hardly miss my England days because I see full potential here for my own progress and also for the progress of biotechnology as a whole.

India is the land of choice for many international companies for opening up their facilities and research centres where new drugs and techniques are being developed. A handsome amount of money is being spent every day by these companies in improving the existing methods and safety techniques. As a matter of fact, the government of India itself is taking under consideration the potential of biotechnology as an employment-creating, highly profitable sector. All this bolstered my opinion that India in future will be a different place because of the many budding scientists it is producing and also a happier place because of the countless jobs that biotechnology is creating.