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## It's been an interesting journey

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I come from a typical middle-class Pune based Maharashtrian family, wherein intellectual pursuits were always encouraged. My mother started her teaching career in the prestigious Huzurpaga High School in Pune, after having completed B.A and M.A after the birth of three daughters and then a B.Ed. I had a grandfather who had decided not to marry off his daughters before their matriculation and a grandmother who, in spite of having studied only up to the fourth standard, was the only relative to send me a letter with a question after listening to my interview on the radio. So clearly I had a family which saw nothing odd in girls pursuing a career. In fact among my three sisters one is a physician and two are science teachers. However, even though the family had a few doctors and engineers, there had been no scientists. Frankly, for a long time, it had never even entered my mind that being a scientist can actually be a career option.

This was probably because till the seventh standard we were taught in school only home science as I was in a girls' school. While preparing for the State Merit Scholarship (which had General Science as a part of syllabus) in the seventh standard I first studied physics, biology and chemistry, and that too on my own. I

was the first student of my school in many years to get the scholarship. But then our mathematics teacher, Mrs. Sohani invited me home to study mathematics and science with Mr. Sohani. I can still remember the innumerable chats and discussions we had and the various things Sohani Sir taught us in his unique style. I then started reading science magazines, participating in science essay writing competitions and learning things outside the textbooks.

Then one day my elder sister brought home a pamphlet about the National Science Talent Search (NSTS) scholarship programme, the one condition being that one had to join basic sciences. Since I had already decided against professional courses this was no problem. It was because of this scholarship that I could spend my summer vacations (while doing my B.Sc. on Physics from the Sir Parshurambhau College, Pune) in prestigious institutes like I.I.T. Delhi, I.I.T. Kanpur. There I met my fellow travelers on this journey, some of whom became lifelong friends! Though I still didn't have a clue as to what exactly research meant, all of this definitely increased my curiosity about it. I finished my B.Sc. and topped the university. I remember receiving an offer for a job from the Bank of Maharashtra, offering me nearly as much as my father earned that time. I like to think of the salaries offered by the I.T. sector today, dissuading the youth from going into science and research as an enhanced version of the same!! Looking back, my decision to choose research over that job gives me no regrets. I took my first step towards research when I did my M.Sc. in I.I.T. Mumbai. The professors there (especially Prof. S.H.Patil) taught me to look beyond books and to find answers to my questions myself.

My Ph.D. application abroad was quite unplanned and accidental!! In my second year of M.Sc., the American University Women's Association (A.U.W.A.) had declared scholarships for girl students for studying in the USA. To be eligible for the scholarship, one had to be admitted to an American university. Although finally I didn't get the A.U.W.A. scholarship, the application process it triggered brought acceptance with assistantship and I joined Stonybrook University to do research in particle physics.

My family had never treated girls differently, and so I never

thought I was doing anything different or special in going abroad for my Ph.D. Some relatives and acquaintances did of course try to 'warn' my parents of the problems it would create for my marriage chances! But fortunately my parents paid no attention to it. It is thus undeniable that the support of one's family, especially one's parents is extremely essential for girls choosing a field like research.

After finishing my Ph.D. I returned to India. Although I had a job offer for post doctoral research in Europe, after five years abroad I wanted to come back home. If I had taken that offer, my life would perhaps have taken a different turn. Truly speaking, I have no regrets about this decision either.

After my Ph.D. I spent three successful years in the Tata Institute of Fundamental Research in Mumbai and then started working as a lecturer in the Mumbai University. All my seniors in T.I.F.R. felt that was the end of my research. This is a sign of the vast difference between research institutes and universities in India. The first taste I got of this was at the time I requested accommodation. Whereas in T.I.F.R. I had accommodation immediately after joining, it took three to four years in Mumbai University. In the process, I had to answer completely irrelevant questions like whether I was married, where my parents lived etc.

I could continue my exploration in Particle Physics, by leading a 'double' life and due to the cooperation of my erstwhile colleagues and research students from T.I.F.R. who made me welcome in the group. Equally important was the encouragement and support received from my head of the department Prof. Rangwala, who believed in my abilities and my thirst for research. Such moral support in the early days goes a long way to give a young researcher the required confidence. During this early period, when in Poland for a conference, a Japanese scientist, after inquiring whether I had authored a piece of work, bowed down to me in the middle of Frankfurt Airport and said, "I respect that work"!! I must say it did wonders to my self confidence. The support and trust of my friends and family in this period played also an essential role. With all this, things moved well in my 12 years in the Mumbai University. I could create my own niche in the field of particle physics.

I work in the area of high energy physics phenomenology; the subject of fundamental constituents of nature and how they are put together. Currently I work on theoretical aspects of physics studies at the Large Hadron Collider at CERN, in Geneva.

The satisfaction and joy I felt when a prediction one of my young German colleague and I made was found to be true and called by some as the 'Drees–Godbole Effect', or when another of my predictions with another (female) colleague was called 'Godbole–Pancheri model' was unparalleled. Some awards, honours also came along the way. The one which is very close to my heart is the I.I.T. Distinguished Alumnus Award. When the place where I took my first steps in this field says, "We are proud of you" it fills me with happiness. An appreciation of research in basic sciences from an Institution like I.I.T. which is full of distinguished alumni with glittering achievements in technology and being the first woman to get this award was particularly satisfying.

Along the way I also conducted a marriage for about 12 years, with a German colleague, across two continents. We decided to postpone having children till we could find jobs to live together and that never happened. Not having the children is perhaps the one regret that I have. Combining a happy family and a successful science career requires a large dose of luck for a woman, given the (lack of) support structures, institutional and social. Further, I must also say that I find it difficult to analyse objectively the role that the gender (bias) might have played in the struggles of establishing one self as a scientist, but I certainly can not say none existed.

I don't think of this journey as easy or difficult, but rather I feel it has been interesting. That is why I feel that it is one's responsibility to help increase the interest and curiosity about science and research in today's Indian youth and particularly the young women. I am personally involved in many such efforts. This is my way of giving back to the field which has given me a lot over the years.