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Being a scientist and a mother

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I remember my father teaching me science when I was a young student. He was an engineer and always stressed the importance of education. He was an early influence on my interest in science. Even though he retired by the time I finished class eleven, my education, and that of my elder brother, remained major priorities for my parents. Although my parents had mostly traditional values, I was always encouraged to study, do well, and, most importantly, become independent.

I went to I.I.T., Kanpur, in 1982 to do my MSc. The teachers and overall atmosphere, although grilling, were highly motivating. Here, I met many teachers who were very supportive. Prof. G K Mehta's Course on "experimental methods" was really inspiring and sometime after that I became sure that I wanted to do research in experimental field. At I.I.T. I met Ajit Mohan, senior physics student, whom I married after finishing M.Sc. in 1984, and later we both did Ph.D. from Syracuse University in the U.S.

For my Ph.D., I studied the electronic structure and the band structure of thin mercury films on silver substrate, using Ultra-violet Photoemission Spectroscopy and Synchrotron Radiation. I finished my Ph.D. in 1990 and for postdoctoral work went to Case Western University in Cleveland, and then to the University of Wisconsin at Milwaukee, where I studied the core level photoemission spectroscopy of oxides using X-ray photoelectron dif-

fraction. In 1993, I went to the university of California-Santa Barbara where I studied the MBE and MOCVD grown quantum dots structures by AFM and STM.

My husband Ajit and I had a long distance marriage for four years as we were postdoctoral scholars at different universities in the U.S. Now we felt was the right time to apply for permanent positions in India and we both got offers for faculty positions from the Institute of Physics (IOP), Bhubaneswar. In the summer of 1994 we had a son, and three months later joined IOP.

Fortunately, both Ajit and I got jobs at the same institute. Knowing the problems of several physicist couples, who work at different places, I strongly feel that the unwritten convention at many places of not offering positions to husband and wife together, even when both are suitably qualified, is sapping a lot of energy and motivation from young scientist couples. These decisions are often guided not by stated rules but by the instincts and misconceptions of colleagues who in most cases happen to be male.

My early years at IOP were very difficult, tedious and demanding. In the absence of any experimental system that I had used up to that time, I learnt and started working with the existing accelerator facility and the available techniques of Rutherford Backspectrometry and Channeling. With a small child, new experimental set-ups and the pressure to establish myself at a new institution could have become insurmountable without the support of an understanding husband. We tried to balance the sharing of time depending on our professional requirements, which for me being an experimentalist were sometimes more stringent. I could completely depend on him at all times. Without this kind of strong support it would be very difficult for any woman (since the support system exists for men by default anyway), with small children, to continue without taking a break in her career. Sadly, in the present scenario of diminishing job opportunities, authorities, who mostly happen to be men, tend to consider a break of a few years as showing a lack of professional commitment, especially when they are considering a woman for a permanent position.

As I was an experimentalist, my experiments would often

run through the night. Due to the lack of characterization facilities at IOP in those days, I also visited several other laboratories in the country to conduct experiments. The first time I went for a conference leaving my son at home, he was six months old. Trustworthy domestic help for providing some support with childcare was not always available. For the first few months at IOP, in the absence of any crèche facility, flexible time scheduling at work became essential for us. Fortunately, the director at the time, Prof. V.S.Ramamurthy, was very understanding and encouraging. At that time it fully dawned on me how difficult it is to take care of a child, while both parents pursue their careers.

After a few years, when the funds became available, I developed a surface science laboratory at IOP with facilities for X-ray Photoelectron Spectroscopy and Atomic Force Microscopy. At present, I have three graduate students working with me. I find both roles – of a scientist and a mother – truly fulfilling and rewarding. I feel lucky to be able to pursue the career I desired. At the same time I was also able to experience the deep emotions of motherhood and the pleasures of raising a child.

A policy decision should be made to encourage the hiring of deserving couples to permanent positions at the same place so that early years of research career do not get wasted on long distance commuting or the woman sacrificing her career (which happens most often) or severely compromising her career as well as independence by taking pool officership or a long-term postdoctoral position near her husband's place of work. Senior women scientists should be involved in taking policy decisions relating to hiring norms and should also counsel young women, at all stages, on their career prospects. Over the years, I have seen several women whose drive to become scientists did not get fulfilled, primarily due to early family responsibility, lack of childcare facilities and absence of strong support systems at home. Support of family is essential to sustain the motivation, curiosity, imagination and desire in women. But it is also essential for women with small children to have access to good childcare facilities, provided by the organizations where they work, some flexibility in time schedule and the support and understanding of the authorities.