

ASIA

SHAKING UP TRADITION

Asia, with its kaleidoscope of different cultures, is seeing significant changes in the prospects for women scientists.

Shazia Anjum is an inspiring example for young women in Pakistan. She was only three years old, living in Bahawarpur, when her father died. Her mother—who had little education and who worked as a clothes maker—struggled to bring up two young girls and was sad that she had no son to bring success to the family. But Shazia's grandmother would not accept the situation, insisting that Shazia's mom break with tradition—and risk her family's opposition—by going to school and then working as a school teacher to allow her to bring up her two girls with dignity. Shazia then followed the wave of change and became the first girl in her family to live away from home, in a hostel, in order to attend high school. "My family is very religious—they never allowed girls to study much. So I had to prove myself better than a son. After me, it changed. Now I'm an example to them all and my mother is proud of me."

Now an assistant professor at the International Centre for Chemical Sciences in Karachi, Shazia has a higher qualification, a Ph.D., than any of the boys in her family, and



Shazia Anjum

more publications than any other assistant professor at her research center.

"There has been great social change in the past 10 to 15 years. Girls are coming forward and are doing very well, getting into university on merit." Currently Shazia is doing two years further training in Canada, and plans to help her home country of Pakistan to become self-sufficient in the manufacture of affordable medicines.

Shazia's story reveals how attitudes have changed in Pakistan, as they have in other Asian societies. "I hope there will be a day when we will be known as scientists who also happen to be women, rather than

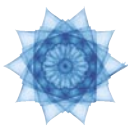
women scientists," laughs **Vijayalakshmi Ravindranath**, the only female director of a national research laboratory under the science ministry in India—the National Brain Research Centre (NBRC) in Gurgaon, near Delhi. But it may take many more years before her hopes become a reality across Asia.



Nancy Ip, left, and her mother

“This was a major achievement in science for China and it received a lot of media coverage.”

—Nancy Ip on becoming a L’Oréal-UNESCO Award laureate in 2004.



“Generally speaking, the obstacles faced by women scientists are not due to unequal opportunities or skills. Rather, they stem from insufficient role models, and the lack of support for women who strive for a career and a family,” according to Nancy Ip, Director of the Biotechnology Centre of Hong Kong’s University of Science and Technology.

She has been a national celebrity since becoming the first Chinese scientist in the life sciences to receive a L’Oréal-UNESCO For Women in Science Award in 2004. “This was a major achievement in science for China and it received a lot of media coverage—I was on television and in the newspapers.” She often gives talks to encourage female students to pursue a career in science and her lab has become a magnet for young Chinese women aspiring to be scientists.

“They see that so long as they are persistent they can pursue their dream,” Nancy enthuses.

Nancy’s children, a son and a daughter, were born only one year apart. “I was dedicated to my work but I also strived to spend time with my children whenever possible. Although I often missed seeing them perform at school, they cherished my effort to spend time with them. I’m sure all women scientists go through this. I believe that we can excel both in our scientific careers and in our roles as mothers.”

Nancy’s own role model was Rita Levi-Montalcini, the Italian neuroscientist who is now the oldest living Nobel Prize winner. “She became a giant in her field and showed such dedication as she overcame obstacles throughout her career.”

Despite being obvious high-achievers in their scientific work, few women in India are in top posts or on appointment committees, and no woman has ever become head of a science academy.



“In India, it is not difficult to attract girls toward learning and teaching science. The real difficulty lies in attracting them to *do* science,” observes **Rohini Godbole**, professor at the Centre for High Energy Physics at the Indian Institute of Science, Bangalore.

Rohini originally taught herself mathematics outside school hours. She’s well known in her field and has her name attached to two scientific phenomena—the high-energy particle Rees-Godbole effect, and the Rees-Godbole model.

The social and cultural character of South Asia means that parents tend to discourage girls from pursuing a Ph.D. out of fear that they may not find “better academically and professionally qualified” groomers for their daughters, says Rohini. Vijayalakshmi and Rohini are among the few who swam against that tide. “We have to make tough choices because of our multiple roles and responsibilities at home and office, and we have to face the consequences of our choices,” says Vijayalakshmi.

With a supportive husband and parents, Vijayalakshmi left her infant son in India to do her postdoctoral training at the National Institutes of Health in the United States. Her husband and son encouraged her to accept the offer of the NBRC’s director’s post in 2000, even if it meant separation again from them.

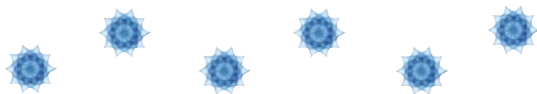


“Science careers for women often involve a commuting marriage,” says Rohini, who spent 12 years of her marriage traveling between India and Germany.



India is changing, including through the launch of a new government fellowship program for women scientists whose careers have been interrupted by their husbands’ job transfers, or by having babies. Women are jumping at the chance to resume their science careers.

The real breakthrough for Asia, according to Vijayalakshmi, will come only when women scientists have a say in selections for senior positions. “We need to develop a critical mass of women scientists in the decision-making process to make a dent,” she says.



From the top: Vijayalakshmi Ravindranath; Rohini Godbole; and Rohini as a graduate student in America.

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The Asian country that is seeing perhaps the biggest change in attitude is Japan, which tellingly has had few women physicists.

Masako Bando, for example, was the first woman physicist to join the faculty at Kyoto University in the 1960s, before moving to Aichi University 20 years ago. She was determined to prove wrong the professor who told her, “You shouldn’t do physics if you want to be a mother.”

Masako was still in graduate school when she had her first child. But with no nursery available, she was forced to set one up at home, with a group of other working moms. “Before then, women would ask their mothers or grandmothers for help. But most gave up work.”

Masako now sees huge differences in Japan. Many universities now provide maternity pay and child care facilities, and equal opportunities are enshrined in law. The University of Tokyo, for example, offers fellowships to women scientists to return to work after career breaks. The number of women physicists in Japan is now increasing—but slowly.

In the Philippines and other parts of Southeast Asia, women scientists have enjoyed more liberty and are less likely to be held back by male chauvinism, according to **Jurgenne Primavera**, scientist emeritus at

the Southeast Asian Fisheries Development Center in Tigbauan, central Philippines. And there is still relatively affordable household help and child care compared to say Europe or North America.

Jurgenne recalls when she was a schoolgirl, traveling with her father for six hours to reach the nearest school examination center. On the way, “We had to cross bamboo and coconut trunks to get over swollen rivers.” Jurgenne realized that she wanted one day to tackle the environmental problems responsible, such as the destruction of forests and soil erosion.

Jurgenne is now known as much for her battles against those who would harm forests as for her scientific work, as she has fought to protect mangrove swamps and promote the farming of milkfish and other edible fishes popular among Filipinos. Even when her four children were young, Jurgenne often had to go on field trips and travel to conferences, but she worked hard to be able to afford the “luxury” of three home-helpers. Still, she had the same “split personality” as other moms: “At home you think of work and at work you think of your babies at home.”

Jurgenne’s marriage advice? “Look for a partner who is secure in himself and prepared to accept household duties.”



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— Jurgenne Primavera with her grandchildren

