



From Math Geek to Malaria Genetics

Pardis Sabeti did not set out to be an award-winning scientist and Harvard University professor of evolutionary biology. The self-described math “geek” planned to attend medical school to fulfill her lifelong dream of becoming a doctor. But her drive to excel combined with her insatiable desire to solve mathematical puzzles nurtured a groundbreaking research career.

A Ph.D.’s Worth of Work

In 2002, Pardis rocked the genetics world by developing an algorithm able to sift through the human genome to identify evidence of natural selection. Pardis’s relentless efforts have garnered her a wall of awards. The biology major graduated from Massachusetts Institute of Technology and won a Rhodes Scholarship to Oxford University. “I never chose to get a Ph.D., but before I knew it I had a Ph.D.’s worth of work simply by pursuing my interest in genetic diversity,” she says. She ultimately earned her Ph.D. in biological anthropology.

In 2004, Pardis won the UNESCO-L’Oréal Fellowship, which, she says, inspired her career in unforeseen ways. “I didn’t initially understand how this fellowship would reverberate beyond my research endeavors,” she says.

Exciting the Next Generation

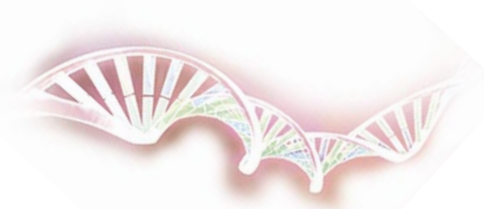
She recalls one moment that made her realize the award’s lasting impact. At the 2004 American Association for the Advancement of Science annual meeting, she spoke to a group of young girls who were interested in pursuing scientific careers. Pardis was stunned by the energy of these girls and their hunger for role models, and amused when they even asked for her autograph. “For me, the greatest impact of the L’Oréal fellowship was understanding how to interact with and excite the next generation,” she says.

Pardis went one step further to encourage the next generation. She used her fellowship dollars to sponsor students—in particular, two girls from local high schools—to work in her lab. The girls’ contributions were so valuable that Pardis included them as co-authors on a recent high profile publication. “Those students were life-changing for me,” she says. “I was like a proud mother, taking pictures of their first data result or their first talk.” Most important, she says the experience got her excited about the prospect of becoming a professor. “I thought I was going to be a full-time clinical doctor in a hospital. Until then, I hadn’t thought about being a professor at a research institution,” she says.

Nurture Your Confidence

In 2006, Pardis became an assistant professor at Harvard University. At the same time she was asked to serve on the National Academy of Science’s Committee on Women in Science, Engineering and Medicine. As a young faculty member, Pardis is cautious about taking on too many roles outside of research, but felt strongly about promoting women in science.

She was also honored as a “Rising Talent” at the Women’s Forum for the Economy and Society, an annual meeting of 1,200 leaders in politics, business, culture, and academia from over 70 countries who gather to discuss the major issues facing societies today. There, the discussion turned to advancing to the next career level—and how differently men and women view their readiness for tasks. “One speaker noted that women tend to stay within a safe zone, often accepting a job when they feel they are 150 percent ready,” she says, adding that she has also found that to be true. Pardis says one of the most important pieces of advice she can pass on to young women is that they nurture the confidence to sense when they are ready to take the next career step.



Two Important Diseases

Pardis’s bold research moves reveal her confidence. Her work in genetics and interest in medicine culminated in her discovery of several examples of how infectious diseases have shaped the genomes of regional populations. In her new research lab, she is embarking on projects to study two important infectious diseases in Africa, malaria and Lassa hemorrhagic fever. Together with malaria expert Dyann Wirth, she is investigating the rapid evolution of the malaria parasite genome. She is looking, for example, for genetic variations that allow malaria to resist current antimalaria drugs. The work will help identify potential vaccine and drug targets—and help detect drug resistance at an early stage.

While Pardis may have originally intended to be on a different career path, her work has already made an impact, and her future research on malaria alone has the potential to help thousands of people who otherwise might die from the disease each year.



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