



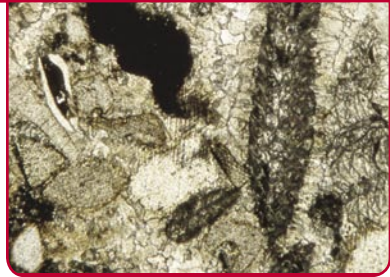
STAYING POWER! HAVE YOU GOT WHAT IT TAKES?

If you are fascinated by science, then a career in research is a great choice for you. Women scientists from around the world share six key steps they have taken in order to achieve their goals and dreams.

Step 1. Get the money

Jennifer McElwain has been fascinated by science since her childhood in Ireland. Her father was a chemical engineer, her mother a keen gardener. “I knew the Latin names of all the plants at the age of three. It was seeded early.” After her Ph.D. Jennifer went to the United States where she worked at the Field Museum in Chicago, studying the fossils of plants that had lived on Earth millions of years ago. She also had fun with organizing special events such as visits for school children.

After 14 years, however, she was ready to go for a higher position, and also longed to return home, together with her scientist husband and young daughter. She had to face two challenges: find not only a position back in Ireland, but also the funds to pay for her research. The first she tackled by getting



a lectureship at University College Dublin (UCD), bringing with her the skills and techniques she had developed while in the United States. The second hurdle she overcame by winning a Marie Curie Excellence award for €1.75 million. “It’s been amazing to come back to Ireland to a fast-track at UCD. I’m setting up a really exciting lab on campus—all custom designed.” Jennifer’s lab will mimic changes that happened in the Earth’s atmosphere 200 million years ago, to test how similar changes linked to global warming could affect today’s plants and animals. Her award supports a team of two postdocs and two Ph.D. students, as well as securing a promise from the university to take over the cost of her salary.



Aderoju Osowole

Step 2. Get the training—even if it means having to travel far

Training abroad was a critical early step for Aderoju Osowole, currently at the University of Ibadan in Nigeria. In 1998, while a Ph.D. student, she won an award from the Third World Academy of Sciences to travel to the Indian Institute of Science's Department of Inorganic and Physical Chemistry in Bangalore.

“The Indian laboratories were well equipped and maintained, with constant electricity and water supplies, even at weekends and public holidays. In contrast, in Nigeria the dearth of research facilities and constant power failures have impaired our activities as researchers. Consequently we have spent more time on teaching than on research.”

After returning to Nigeria, Aderoju was able to set up an inorganic chemistry research unit at the University of Ibadan. More recently, she traveled to Germany for further training in physics on a George Forster Fellowship from the Alexander von Humboldt Foundation. She believes that women scientists have the ability to succeed. “Nowadays, women scientists [in Nigeria] are held in high esteem, unlike before, because experience has shown that women are diligent, hardworking, and go-getters.”

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Step 3. Get networking

“Women need to learn the importance of building national and international networks, which they can begin by participating at international conferences from an early stage and by seeking out a mentor,” says **Dolores J. Cahill**, professor at University College Dublin Conway Institute of Biomolecular and Biomedical Research, Ireland.

Dolores left Ireland directly after her Ph.D. and spent 10 years in Germany, mainly at the Max-Planck Institute of Molecular Genetics in Berlin, and was awarded a BioFuture grant to develop protein array technology and to support the co-founding of a proteomics company, Protagen AG.

Having returned to Ireland, Dolores is on the government’s Advisory Science Council where she feels privileged to assist in advancing science in Ireland. As a female she is often in the minority, but does not feel the need to make an issue of it. “Women should be noted for their scientific contribution rather than the fact that they may be the only woman at a meeting.”

Step 4. Start promoting yourself

Dame Julia Higgins, professor of polymer science at Imperial College of Science and Technology in London, remembers having to battle with her own modesty in order to declare herself a candidate for a professorship. The departmental professorial panel had nominated other candidates who seemed to them to have better or more urgent cases, but the Head of Department didn’t hesitate to support Julia’s case once she had put herself forward. “Women tend to be less definite about whether they ought to be pushing forward for promotion—they don’t push themselves in appropriate ways and they’re not as well networked as men, and therefore less well informed.” Ironically, Julia notes that at Imperial, those women who go for promotion are more successful than the men.

Determined to help other women scientists, Julia has helped to initiate new recruitment policies at Imperial to make the process of applying for senior positions less intimidating, particularly to women, and she has worked with the Athena Project to encourage universities across the United Kingdom to attract more women scientists to top university posts. When she first became a professor there were few other women faculty around her. “I felt rather obvious and possibly a bit isolated, but it didn’t make me want to stop, because it was all so interesting.”

“Women should be noted for their scientific contribution rather than the fact that they may be the only woman at a meeting.”



Dolores J. Cahill



Kate Nobes with her children

Step 5. Find role models

Getting to know other senior women scientists is a good way to overcome self-doubt, according to **Aoife Moloney**, a lecturer at the School of Electronic and Communications Engineering, Dublin Institute of Technology in Ireland. “A lot of women I know working in engineering think they’re not great at engineering. The men are more confident.” The answer, she says, is to find role models. “I’ve met a lot of women engineers who are two or three years ahead of me and they say they think they could be better, too. It’s good if you hear that.” Keen to encourage other women to take up engineering, she organizes parties and educational events, as well as visiting days for secondary schools.

Step 6. Plan your career

Many women scientists find that the very time at which they are ready to go for promotion is also when they wish to start a family. Careful career planning—about both where to work, and when to have a baby—is essential. For **Lucia Reining**, taking up a permanent position as a researcher, and later director of research, at the French National Research Centre in a laboratory of the Ecole Polytechnique in Paris was a key move in enabling her to combine having a family with a career in physics. Lucia was only two weeks away from giving birth to her first child when she interviewed for the position. She later had twin girls, and is now the head of a team of 20 researchers, as well as the president of an international group, the European Theoretical Spectroscopy Facility. The work requires a lot of time spent on administration and finance as well as science, which can be stressful. “If I had not had the permanent position, the probability that I would have given up at some point would have been extremely high.”

For **Kate Nobes**, a reader at the University of Bristol, UK, the question of whether or not she could allow herself to have a second child had to be carefully balanced with the demands of publishing academic papers. “It is a competitive job and if you want to compete you have to work all hours.” Securing the lectureship in Bristol, and the job security that came with it, enabled Kate to follow through with her long-term family plans.

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