POSTDOC JOURNAL

Bridging the gap

It's good to talk. While at Fermilab in Batavia, Illinois, I could pop along the corridor at any time and chat to a world expert about the topic of my choice — a real luxury. The hardest times of my PhD have been those when I felt most isolated and didn't talk to others. I guess I've really learned the benefits of bringing scientists together.

I don't just mean researchers from different fields, but also theorists and experimentalists from the same area. Different skills and a new perspective can be just what the doctor ordered when it comes to tackling the latest problems.

The most engaging debates I've had have been with scientists from the opposite end of the spectrum. My brother, a geneticist, asks me how to write programs to analyse his data. In return he shows me new statistical techniques that might be useful in my research. In my own field, the 'need to talk' has spurred some of us to organize a conference where young experimentalists and theorists will do exactly that — talk.

Multidisciplinary research centres are popping up all over the place. Bridging the gap between one field and another is risky for a scientist, but the rewards can be high. And as people recognize this untapped potential, interdisciplinary science can only go from strength to strength.

Amber Jenkins is a graduate student in particle physics at Imperial College London.

RECRUITERS & ACADEMIA

My job as a senior grants administrator — heading the pre-award unit within the research support office — is a secure one. But it is also a dead-end position.

In order to increase my skill set and plan for the future, I enrolled in the doctorate programme at my university's department of information science. I knew that the skills I picked up would empower me to work more productively and perhaps open up new career choices. At the very least, I recognized that the four years spent in the programme would break up my routine and challenge me.

Progressing with my doctoral studies, and loving it, I recently realized that I did not see myself becoming a full-time information specialist. So, what could I do? What occupation combines a love for research, a need for sound administration and people skills, a passion for the Internet and information tools and ties in with politics and international relations? Science policy research — eureka! And so, in early 2004, I applied to the Christine Mirzayan Science & Technology Policy Internship Program of the National Academies, in Washington DC. Lo and behold, this 41-year-old research administrator from Israel was accepted as a summer intern.

My university gave me the time off and I moved to Foggy Bottom, centre of Washington's policy-making. The academies' internship programme taught me many valuable lessons: the city is ripe with opportunity and full of people eager to share their accumulated knowledge and experiences. What struck me most about this town was the enthusiasm and passion that people here attach to their jobs. It is catching. The experience confirmed for me that science and technology policy research was how I saw myself spending the rest of my professional life.

But, now that I knew what I wanted to do, where could I do it? Israel, my home for 16 years, presents many professional challenges. The university where I work is mid-sized, with an average national science capacity, and strategic planning is not a strong trait. The research office, my professional home for 11 years, is a small department with no mobility opportunities and no mandate to deal with policy issues.

But should I uproot myself, my wife and five children? The experience has taught me that although changing careers is possible, it entails both sacrifices and challenges. ■

Eric Zimmerman is a grants coordinator at Bar-Ilan University in Israel.

MOVERS

Silke Bühler-Paschen, professor, Technical University of Vienna

Before Silke Bühler-Paschen shone in material sciences, the German physicist was a top-class gymnast. She practised for five hours a day—and for a bit of variety, regularly participated in triathlon competitions.

Perhaps this competitive edge prepared her for the male-dominated physics arena. "I never felt disadvantaged or discriminated against as a woman throughout my career," she says.

CV

2003– Assistant professor, Max Planck Institute for Chemical Physics of Solids, Dresden
1999–2003: Group leader, Max Planck Institute for Chemical Physics of Solids, Dresden
1995–1998: Postdoctoral researcher, Solid State Physics Laboratory, Swiss Federal Institute of Technology, Zurich
1992–1995: PhD researcher, Semicrystalline Solids Physics Laboratory, Swiss Federal Institute of Technology, Lausanne

Next May she will become the first female full professor of physics at the Technical University of Vienna in Austria — in the city of Ludwig Boltzmann and Erwin Schrödinger.

The charismatic Frenchwoman Marie-Noëlle Bussac, whom she met during her postgraduate training in solid-state physics at the Swiss Federal Institute of Technology in Lausanne, taught her that with discipline, hardiness and dedication one can combine a successful scientific career and a family. Bussac, a theoretical physicist at the École Polytechnique in Paris, and mother of two, became a friend and role model to the young student. Bühler-Paschen now has daughters aged six and three, and is expecting her third child just before she leaves for Vienna next spring.

After a postdoctoral stay in Zurich she won an independent research position at the German Max Planck Society, which has a special programme to support excellent female researchers. In Dresden, her research has focused on clathrates, cage-like crystals that can trap molecules. Researchers hope to use these compounds to develop special materials with low thermoelectric conductivity, which could replace common cooling agents such as liquid nitrogen. She finds both sides, the basic physical properties of new materials and their potential for application, equally motivating stimuli for her work.

Bühler-Paschen is used to moving around: her father's work in industrial technology took the family to numerous places, including Brazil. Now, a full-time nanny assists her young family at home and during research stays such as one in Japan. And although she no longer has time for gymnastics championships, running and dancing provide a link with her sporting past — and perhaps keep her honed to compete with the rest of the physics community. ■