

MOVERS

Tsuyoshi Kimura, professor, Graduate School of Engineering Science, Osaka University, Japan



2005-07: Technical staff member, Bell Laboratories, Lucent Technologies, New Jersey

2003-05: Technical staff member, Los Alamos National Laboratories, New Mexico

As an undergraduate chemist in 1993, Tsuyoshi Kimura spent an inspiring six months away from his native Japan as an intern at Bell Laboratories in New Jersey. Working with so many pioneering materials scientists convinced the young student that he wanted to follow in their footsteps.

After completing his PhD on superconductivity at Tokyo University in 1996, he worked as a postdoctoral fellow at the Joint Research Center for Atom Technology in Tsukuba. There his projects focused on magnetic transport in correlated electron systems. Working with people interested in patenting discoveries and seeking novel products taught him the importance of industry in his field of research. "The ultimate goal of our research is always application," he says.

Ten years after his first stint in the United States, Kimura was convinced to return, this time to set up his own independent research project. The lure was a combination of academic freedom and the resources available at top-end US institutions. He spent a couple of years at Los Alamos National Laboratories in New Mexico, and then returned to Bell Laboratories, this time staying for two years. It was a fertile and busy period for him: he produced more than 30 publications and won a few prizes, including the Sir Martin Wood Prize in 2005.

"He is one of the most talented materials scientists in the world right now," says John Sarrao, division leader of the Los Alamos materials-physics section. "We were certainly sad to see him go."

But staying in industry was never Kimura's long-term plan. "I always wanted to go back to Japan and actively take part in guiding and educating students," he says. So he was pleased to accept a professorship at Osaka University where he started work on 1 April.

The timing was right, Kimura says. Japan has become a major player in materials sciences. Kimura, whose expertise lies in the synthesis and analysis of condensed matter with superconducting and magnetic behaviour, expects to find a healthy research environment. The university has secured his funding for at least his first two years.

Kimura says that at heart he remains a scientist who is driven by curiosity. "At a university, the process of research is more important than immediate application," he says. "I am looking forward to trying more complicated, adventurous topics."

Magdalena Wutte

NETWORKS & SUPPORT

Practical applications

My postdoctoral experience — studying brain-machine interfaces (BMIs) — was pretty good at first. In two years I had collected a lot of human brain data and published a high-impact paper. But the day-to-day routine of sitting in front of a computer analysing data quickly turned to drudgery. Work felt insular and lonely, and I realized that the thrill of scientific discovery no longer motivated me. What I needed was to feel that my work was helping people.

Although I loved being involved in the scientific enterprise, I knew I needed to work on challenging projects in a team setting, and that I was particularly good at technical communication and organization. Focusing on these attributes I came up with a shortlist of potential career options: science policy, science administration and project management.

It was a hard move to make — I had a gnawing fear that accepting a job away from academia was tantamount to selling my soul. Fortunately, my adviser was very supportive, and even offered me a leave of absence to pursue other opportunities.

With his support I investigated several possibilities: advising members of Congress in Washington DC on science-policy issues,

administrative positions at a science-funding agency and a scientific centre of excellence, and project-management positions in industry.

But then my adviser won a large contract from the Defense Advanced Research Projects Agency (DARPA) to develop a cortical interface to allow amputees and paralysed individuals to control prosthetic arms using their thoughts. This contract required the lab to build a BMI device and get formal approval to test the device in human clinical trials. The project had everything I was looking for. So I convinced my adviser that he needed a project manager to navigate the regulatory process and manage development activities across institutions and cross-disciplinary teams. Then I convinced him that I was the best person for the job.

A year-and-a-half later and I definitely don't regret my decision to jump off the academic tenure track. The job has been immensely challenging and rewarding, and much more fun than I'd ever imagined. The DARPA contract runs out soon, but I've gained a wealth of experience and I've built a compelling CV that will help me find my next position.

Daniel Rizzuto is project manager for the neural prosthetics group at the California Institute of Technology.

POSTDOC JOURNAL

Collegial science

Why are we interested in some things and not others? Why do our interests wax and wane over time? I couldn't help pondering these questions when my adviser left the lab recently for a two-week trip. During his absence, I was surprised to find that sometimes I had difficulty staying focused on my research. As ours is a small lab of just three people (my adviser included), his absence meant a lot of solitary sitting and thinking. The isolation was accentuated by the fact that I'm the only one working on my project.

Solitary science may work for some, but for many, a collaborative research environment seems to be best. In my case, as a newcomer to a vast and established field of study — where the volume of information to sort through and synthesize can seem overwhelming at times — it helps to have colleagues close by who are interested in the same things and who get excited about new findings.

Often, things we think might be interesting turn out to be rather dull, whereas topics we think we're not too keen on can turn into all-consuming passions. A collegial and interactive setting can go a long way towards piquing our interests when we might otherwise struggle to build excitement on our own. Passion for a subject can be contagious, but it's hard to catch anything in isolation.

Peter Jordan is a visiting fellow at the National Institute of Diabetes and Digestive and Kidney Diseases in Bethesda, Maryland.