

CAREERS

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TRAVELLING

Here, there and everywhere

Scientists often criss-cross the globe in pursuit of their careers. The practice can be rewarding – and taxing.

BY NEIL SAVAGE

Ed Kearns did not travel much when he was younger. He grew up in Syracuse, New York, and in 1978 moved to Cambridge to attend the Massachusetts Institute of Technology (MIT), then Harvard University. By then, he had been to California twice and Mexico once, and pretty much nowhere else. But as a graduate student studying physics, he began work on a project at Fermilab near Batavia, Illinois, which required stays of six to nine months in the Chicago area. As a postdoc, he joined the Monopole Astrophysics and Cosmic Ray Observatory at Gran Sasso National Laboratory in Abruzzo, Italy, and had to go there five or six times a year. “That sort of got me geared up for international travel being part of my work,” he says.

In 1996, Kearns joined the Super-Kamiokande experiment, in which equipment in an old zinc and lead mine under Mount Kamioka near Hida, Japan, searches for the by-products of proton decay. That meant regular trips between Boston, Abruzzo and Hida. Now, Kearns is a professor at Boston University, studying neutrino physics and particle astrophysics. The trips to Italy have tapered off, but he continues to travel to Japan five times a year, usually for about ten days.

Travel is a given in his field. Many particle physicists teach at universities, but lots of the big research projects are international collaborations built in tunnels and abandoned mines, which require huge financial investments and so cannot be done at researchers’ home institutions. “I can count on my hand the number of

places in the world where this sort of science can be done,” says Kearns. “You sort of have to go where the action is.”

Scientists in both academia and business find themselves hopping between time zones and learning to feel at home on two or more continents. They are driven by research interests, personal desire and the demands of an increasingly interconnected world. Navigating these posts requires deft multitasking, a love of travel and careful coordination with colleagues and family.

Some tackle different aspects of their research in different locations. Johannes Lercher works on the fundamental understanding of catalysis as a chemist at the Technical University of Munich (TUM) in Germany. But he is also director of the Institute for Integrated Catalysis at the Pacific Northwest ▶

► National Laboratory (PNNL) in Richland, Washington, where he explores catalysis as a means of turning biomass into fuel. The TUM group grounds him in basic theory, whereas the PNNL team specializes in an application and is well stocked with expensive imaging equipment. “It broadens your horizons. You can do things you cannot do in a single location,” says Lercher. “The difference in attention between an educational, academic institution and a national lab is very stimulating.”

FAR AND AWAY

Software developer Julian Cerruti says that having bases in two countries gives him a global perspective. “It keeps what I do on an international level,” says Cerruti, who moved from Argentina to San Francisco, California, in 2004 to take a job with IBM Research before returning to his native country a few years later. For the next five years, he travelled regularly between the two; last autumn he started his own software development firm, Creativa 77 in Buenos Aires, but he still makes trips to San Francisco to work with a client. An international perspective is important, he says, when the microchips that will run his software might be designed in Japan, and the computer-memory technology might come from Germany. He also thinks that it distinguishes his business from others in Argentina. “A vast majority of the work that is done here is for local consumption,” he says.

Cerruti has turned his experience in remote working to his advantage. He says that it is less common to move to a new city for work in Argentina than in the United States. By allowing his employees to work remotely, he has attracted a wide pool of talented individuals who can stay in their home towns. And trekking to California has its perks when it comes to scheduling meetings and making contacts. “I think the rule of thumb is that the person who lives farthest has the highest priority in the calendar,” he explains. He has started an online forum (<http://remotework.forumatic.com>) for people to discuss the ins and outs of living in one place and working elsewhere.

Globetrotters must be easily accessible to colleagues and family members. There is a growing range of online tools to keep people connected: Dropbox or Basecamp for sharing files; Skype, Google Hangouts, FaceTime and other video-conferencing tools for talking; and e-mail. “If Skype didn’t exist, we’d all be dead or in debt,” jokes Gabriella Sciolla, a physicist at Brandeis University in Waltham, Massachusetts, who works on the ATLAS detector



“If Skype didn’t exist, we’d all be dead or in debt.”

Gabriella Sciolla

at CERN, Europe’s particle- physics lab near Geneva, Switzerland.

But in conventional working, much collaboration comes during impromptu conversations in hallways, or from free-ranging discussions over coffee. The structured and time-limited format of conference calls is not really conducive to creativity, says Carlo Ratti, who runs the SENSEable City Laboratory at MIT, which studies how digital technology affects urban centres around the world. And others agree that social interactions are key for creating bonds between collaborators. So despite the many ways of communicating virtually, travel continues to be important.

Being physically present makes people feel that they are actual contributors to a project. And sometimes it is easier to explain things when you can pick up an object or make a quick scribble on a napkin, says Cerruti. “Having the high bandwidth you can have when you’re in person is very useful.”

Even the team behind Skype does not attempt to do all its work over the Internet. “There’s still no substitute for having dinner with somebody and actually shaking hands instead of waving at them over a video link,” says Eric Brown, general manager for integrated communications at Skype. He travels between his main office in Palo Alto, California, and the headquarters of company owner Microsoft in Redmond, Washington; he also goes regularly to London, where the product development team is based, and to New York to meet some of his team members. He says that experience of using Skype while travelling helps developers to improve their product.

HOMEWARD BOUND

The itinerant lifestyle intensifies the work–family balancing act that many researchers already face. Lercher says that he would not have done it before his children had left home. If his wife decides that she is tired of his travelling, he will stop. “Family is a very important factor in this,” he says. Cerruti returned to Argentina so that his children could grow up near his then-wife’s family, but travelled to California for work. “I originally started doing that as a matter of policy, to make sure that they didn’t forget about me,” he says.

Accommodating family can require major coordination. Sciolla and her husband, Harvard physicist Masahiro Morii, are both involved in ATLAS. They are supposed to attend the same meetings, but have to take turns so that one can stay home and take care of their children. Sciolla got her PhD at the University of Turin in Italy; Morii earned his at the University of Tokyo. The two met as postdocs at the SLAC National Accelerator Laboratory in Menlo Park, California, and they are now settled in Boston, with regular trips to Geneva.

To balance her travel with her teaching, Sciolla mainly goes abroad during school breaks. For a non-American, the Thanksgiving



“Working abroad keeps what I do on an international level.”

Julian Cerruti

holiday is an ideal time to go to Europe, she says. She will also travel during exams: someone else can supervise them, and she marks them when she returns. Kearns, too, says that it is very important to him not to miss classes; instead, he misses out on a lot of weekends. Both Sciolla and Kearns sometimes double the number of classes that they teach in one semester, in exchange for having another semester free to travel. And Kearns is willing to cut his trips short to attend graduation at Boston, where strong faculty attendance is expected. Keeping various colleagues happy requires a lot of organization, the travellers say.

That goes for mentoring as well, although it depends on the protégé. A fair bit of managing or supervising can be done remotely, as long as everyone keeps in frequent contact. “As each student is a person with their own strengths and weaknesses, there is no single recipe,” says Kearns. “Some do quite well being left alone, others require frequent course correction.”

Lercher handles his two workloads — “the joke is I have two full-time jobs but I only get half pay at both” — by giving up administrative duties such as committee work. When Sciolla is on campus, she volunteers for the committees that require lots of work, to compensate for the time that she is away.

They all experience the vagaries of travel. Brown complains of the poor quality of aeroplane and hotel Internet connections, but Ratti finds it helpful to be cut off from e-mail so that he can concentrate on other tasks. Cerruti knows which security gate at the Dallas/Fort Worth airport in Texas is the quickest (it’s the one on the left), and that if the flight from Brazil arrives early, he will be stuck in customs for an hour and a half. At CERN, “you catch every single bug from everywhere in the world”, says Sciolla. “They all come to Geneva.”

The rewards go beyond professional stimulation and networking. Kearns has learned to appreciate the small differences between places — the music that is played in Hida at 7 p.m. every night, and the time of evening when everyone in Gran Sasso walks up and down the street conversing with each other. He wishes that more scientists would work in far-away places to reap the benefits. “The opportunity to do research has not only expanded their horizons in sciences,” says Kearns, “but also expanded their horizons as citizens of the world.” ■

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