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RELOCATION

Out of place

Enforced mingling and straight-up instruction can help scientists in a foreign country.

BY PAUL SMAGLIK

When Juhn-Jong Lin relocated from Taiwan to Indiana in 1981, he had few problems picking up the culture of his new laboratory — but social events were another thing entirely. Conversations often centred on pop-culture icons, sports events or political figures — most of which were unfamiliar to him. The patience and goodwill of his labmates made his time at Purdue University in West Lafayette pleasant and productive, but he also experienced some awkward moments, such as when he went to see a classical play with a colleague. “I could not understand it at all,” he says. He remembers that the actors had strong

accents — and he struggled to follow the plot.

Science is an international language, and the assumption behind that cliché is that life beyond the bench will fall into place no matter where the scientist is working. But just because a scientist is fluent in next-generation sequencing does not mean that he or she will know the cultural protocols. For example, interrupting a lab talk with questions is common practice in the United States; in Germany, it is considered rude. And when researchers feel uncomfortable interacting with their colleagues, they will have a hard time doing their best work.

The international nature of science means that many researchers find themselves in a culturally alien situation at some point in

their career. People who plan to work or study overseas can take steps to acclimatize: they can learn beforehand about any introductory programmes that their new institution has set up, and make sure to participate once they arrive. Socializing informally, taking language lessons and creating support networks inside and outside the laboratory can help researchers to navigate unfamiliar, unspoken norms and ease into a foreign culture.

Spurred by growing numbers of young scientists who arrive from other nations as postdoctoral researchers or graduate students, institutions, investigators and administrators are increasingly aware that they need to put out cultural signposts for foreign nationals. Many now provide formal and ►

CULTURE CLASS

Learning how to fit in

Some organizations have created programmes to ease the way for early-career researchers coming from other nations. The US National Institutes of Health (NIH) in Bethesda, Maryland, boasts some 3,500 postdoctoral research and clinical fellows. Of these, 60% hail from other countries, says Sharon Milgram, director of the agency's Office of Intramural Training and Education. Because of the size and complexity of that mix, the NIH puts out a series of programmatic welcome mats.

Visiting fellows can take a two-day course called 'Improving Spoken English', which looks at US cultural norms as well as verbal communication, covering topics such as gun culture, gay marriage, abortion and racism. And natives and newcomers alike can take workshops on workplace dynamics.

Milgram explains that the courses take account of cultural differences; for example, she has employees from cultures in which giving supervisors critical feedback is frowned on, especially in large group settings, so she solicits feedback by e-mail. Pedro Milanez-Almeida, a postdoctoral researcher in immunology at the NIH, says the formal courses made the transition from Germany, where he did his PhD, much smoother than the move from his native Brazil to Germany. "In Brazil, 'tomorrow' means maybe next week," he says. In both Germany and the United States deadlines are strict, but US supervisors expect trainees to take part in setting them.

Early orientation is key, says Ramesh Pillai, a group leader at the European Molecular Biology Laboratory (EMBL) in Grenoble, France. Students and postdocs in a foreign country are often overwhelmed by the basic logistics of life when they first arrive, he says. "Where do you get your food? Where do you buy your bus tickets?"

EMBL uses bureaucracy to help newcomers to create a support network. Fresh arrivals receive a list of contacts for various services, and must get a signature from each person before they receive their meal card or Internet connection. Trainees are also paired with a mentor, and group leaders meet each pair every week. That early, structured interaction prevents social isolation. "The first few days are when you make an impression of a place," Pillai says. "You feel happy about a place, or not." **P.S.**



Ritwick Sawarkar (left) and members of his laboratory, who came to Germany from many countries.

► informal ways to make guests feel more comfortable (see 'Culture class').

There are a range of things that hosts can do to create a better experience for their recruits, say several scientists who were once 'fish out of water' but now manage expatriates of their own. Labs can help to alleviate a feeling of isolation by sponsoring social events. And institutions can prevent some awkward moments by preparing foreign nationals for their host country's cultural norms. Universities that provide logistical support, such as banking or transportation, help new arrivals to weather that first rough week. Places that make a foreigner feel at home in their new country — not just in the lab — are likely to nurture the happiest scientists.

CULTURAL PIONEER

The most empathetic managers may be those who once had to find their footing in an alien land themselves. Ritwick Sawarkar remembers when he moved from India to do a postdoc in Switzerland and has used the experience to shape how he runs his cell-biology lab at the Max Planck Institute in Freiburg, Germany. "I try to make sure that people speak English in my lab as much as possible," says Sawarkar, who has trainees from the United States, Asia and Europe. He wants everyone to have a common language for work and off-work hours. "I've seen what it's like when everyone's speaking German around you. You feel a little bit left out."

Neurobiologist Martin Giurfa can relate. When Giurfa moved from Argentina to Berlin in 1991 to pursue a postdoc, he found the relative solitude stifling. He was used to chatting and socializing with labmates and students, but that was not what he found in Berlin. "You spend the days isolated in a lab, not speaking to anyone," he says. Six months of learning German — paid for by his fellowship — could not bridge the cultural

differences. In his home country, colleagues consider one another to be close personal friends, even if they have just started to work together. The Berlin lab was not like that. "The people were not necessarily there to be friends with each other," he says.

Lack of contact coupled with the pressure to produce results made for a miserable first year. It also did not help that Giurfa's fellowship stipend was pegged to the former East German economy, so his income was scanty as inflation set in after the Berlin Wall fell. But scrambling for cash may actually have salvaged his postdoc experience. He began playing guitar at local nightclubs, which helped with his isolation, his German, his cash flow — and his mindset.

He went on to publish papers, win grants, form collaborations and forge friendships. He is now working at France's basic-research agency (CNRS) in Toulouse. "I am extremely thankful," he says. "Germany made me, in a way."

Giurfa thinks that the transition would have been easier had he known what to expect of his new colleagues. Sawarkar agrees: the cell biologist found that his labmates in Switzerland did not respond positively to his natural effusiveness. "I am usually chatty," he says. "I ask a lot of questions." A friend finally pointed out that his enthusiasm was being interpreted as aggressiveness. Sawarkar took some comfort from learning that he was not alone. "A couple of my American friends told me they had the same experience."

Such shared experiences between outsiders can do much to relieve culture shock and create a social network both inside and outside the lab. These 'safety nets' can then help an expatriate to avoid or deal with a faux pas.

That is what smoothed the transition for Ramesh Pillai from India to Switzerland. His adviser recommended that he stay in a student hostel, rather than rent an apartment for

themselves. Pillai, who is now a group leader at the European Molecular Biology Laboratory in Grenoble, France, says that was some of the best advice he ever received.

Hostel residents help each other to learn the local language as well as where to shop, bank and do laundry. His only misstep was that he focused on learning French so that he could chat with a romantic interest at the hostel, rather than German, the language of informal conversation outside the lab.

Pillai's four-year residence at the hostel also created a social circle for him beyond the laboratory. People from many nationalities mingled in the kitchen nightly to exchange recipes, horror stories and advice, and there were parties almost every weekend. "It was a great atmosphere for anyone coming into a foreign country to meet up with people in similar situations," Pillai says. He tries to create a similar convivial atmosphere in his lab.

BUILDING COHESION

Creating a sense of belonging for lab members leads to greater cohesion and a more effective laboratory. Giurfa has found that young scientists from some countries tend to be overly formal and deferential. "I want them challenging my views," he says. "This positive confrontation could enrich our work more than just agreement." Once lab members feel comfortable with each other, they can communicate more freely. "People are more engaged and productive."

Giurfa also tries to recreate the friendly atmosphere of his native country in his lab team by taking students to vineyards, the Pyrenees and local chateaux. And food provides one of the best ice-breakers for his lab staff: he holds periodic potluck parties, in which lab members bring a dish from their home country and explain why and when it would be served in their culture. In this way, cultural differences form the basis of a shared activity.

Lin remembers how pleased he was when labmates in the US Midwest made the effort to invite him out for drinks. Now a physicist at National Chiao Tung University in Taiwan, he tries to create a hospitable environment for visiting scientists. He says that the world has become more global since his days in the United States: most US and European visitors have already mastered chopsticks and know their way around all manner of Asian cuisine. Many have made an effort to read a bit about Taiwanese politics and culture, or at least read a few articles on Wikipedia. And if conversation stalls, he is ready with his own supply of stories of being a young scientist in an unfamiliar country. ■

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TURNING POINT

Josh Dillon

Astrophysicist Josh Dillon is finishing his PhD at Massachusetts Institute of Technology in Cambridge in an emerging field of cosmology. He is also co-creator of the bawdy card game 'Cards Against Humanity', which this year produced an add-on deck of 30 science-based cards, profits from which will fund a scholarship for women in science.



What does your PhD research involve?

I am working in a field called 21-centimetre cosmology. We're trying to get a baby picture of the Universe. We want to measure the characteristics of the Universe from the time when its first galaxies were forming, about a billion years ago. To do this, we use telescope arrays to detect 21-cm radio waves that were emitted by hydrogen atoms, which were abundant between galaxies then. The challenge is that if the signal exists, it's very faint and is obscured by much more powerful signals from galaxies.

Does this field require new telescopes?

Yes. I've worked on the proposal for a telescope array called HERA (the Hydrogen Epoch of Reionization Array), a huge hexagonal grid of dishes to be built in the Karoo desert of South Africa. We've been using the Murchison Wide-field Array in Western Australia. HERA will be bigger by a factor of about 20, and therefore much more sensitive. These types of array need to be in radio-quiet, remote places; we are monitoring frequencies of 100–200 megahertz, so we want to mitigate interference from FM radio stations that transmit at around 100 megahertz.

Is it scary to work in an unproven field?

Yes and no. I'm pretty optimistic about the field. It has enormous potential. In the 2010 decadal survey of astronomy and astrophysics conducted by the US National Academy of Sciences (go.nature.com/i3v1qj), HERA was one of the highest-ranked projects for ground-based astronomy. It's risky and may not work out as well as we would like. Our biggest challenge is that we may not be able to detect those radio emissions — but all scientific endeavours have risk, and I'm convinced that 21-cm cosmology is worth the risk given the scientific potential. I'm headed this autumn to the University of California, Berkeley, for a postdoc and will work with the team I've been competing against to find the signal.

How does Cards Against Humanity fit in?

It's a fun and worthwhile side project outside my astrophysics pursuits. It started when seven of my high-school friends and I played a card

game that we made up at a New Year's Eve party. It is a politically incorrect party game in which players compete to make the funniest combination of cards. In 2010, we launched a Kickstarter campaign to fund the first print run.

How will the scholarship work?

We formed a board of 40 female scientists to judge a competition to find a candidate who is not only a promising researcher but can also communicate effectively to the public about what she does. We plan to host videos or blog posts to showcase what the winner is doing.

What has the response been like?

Overwhelmingly positive. To date, we've raised more than US\$374,000, so we'll be able to fund at least one or two women. Hopefully, we'll be able to fund more in years to come, depending on how much we raise and the outlay per student. Funding just one scholarship doesn't move the needle that much, but that's only part of why we're doing this. The whole point is to raise the visibility of women in science.

What prompted you to create the scholarship?

Cards Against Humanity has backed other charities, including Wikipedia, Donors Choose, which funds teachers who are eager to do a classroom project, and the Sunlight Foundation, which promotes transparency in politics. When we decided to do a science-focused add-on deck, we knew that we would give the sales proceeds to a charity. We decided that a scholarship for women pursuing an advanced science degree was really appealing. As a company that makes a bawdy party game with a broad social-media reach, we can do one thing — we can help to change the perception of who can be a scientist. ■

INTERVIEW BY VIRGINIA GEWIN