CAREERS

TURNING POINT Biologist turned careers adviser offers pointers to scientists **p.126**

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COLUMN

Leadership hurdles

Asian researchers and engineers are too rarely made US science leaders, say **Lilian Gomory Wu** and **Wei Jing**.

Many people believe that Asians excel in science, technology, engineering and maths (STEM) occupations in the United States. And indeed, there are lots of people of Asian descent on the country's university campuses and in its STEM workplaces and federal laboratories. In 2009, Asians — defined as people from the Far East, southeast Asia and the Indian subcontinent — made up 78% of doctoral recipients with temporary visas who were planning to work in the United States[1]. One could expect, then, that Asian men and women would be represented in similar proportions at the highest levels of STEM industry, academia and the federal workforce. But the data tell a different story.

Across all sectors, Asians in US STEM careers are not reaching leadership positions at the same rate as white people, or even as members of other underrepresented groups[2]. In academia, just 42% of Asian men are tenured, compared with 58% of white men, 49% of black men and 50% of Hispanic men. Just 21% of Asian women in academia are tenured, the lowest proportion for any ethnicity or gender. They are also least likely to be promoted to full professor.

The industrial and federal workforces reflect similar numbers. Asian men are doing better than Asian women in reaching managerial positions in industry, but their numbers are lower than those for men of other races and ethnicities. Just 4% of Asian women in industry and 28% in the federal workforce hold managerial positions, again the smallest percentage for any ethnicity or gender.

Asians are almost absent at the very top of US companies. The company Leadership Education for Asian Pacifics, based in Los Angeles, California, reported[3] in 2010 that there were just ten Asians or Pacific Islanders among the chairs, presidents and chief executives of the 500 biggest US firms; only three of them were women.

Why the disparity? It may be down to cultural behaviours, and Western interpretation of these behaviours. Asians are often stereotyped as a 'model minority': hardworking and patient, family oriented, good at maths and science and having a strong work ethic, but also humble, non-confrontational and lacking the passion to be charismatic leaders. Worse yet, a work group of the US government's Equal Employment Opportunity Commission reports[4] that Asians are often perceived as 'forever foreign', which can affect how others assess their ability to communicate, their competence and, more importantly, their trustworthiness.

Good leadership has a cultural dimension. In east Asia, for example, effective leadership is measured by what managers do rather than by what they say, no matter how passionately they speak. A manager in charge of bringing out a product there would work day and night to get it out on time and free of defects. Communication skills are generally less important in this model. The idea in the United States that east Asians lack passion and opinions comes from cultural perceptions of their behaviour: in discussions, east Asians tend to respond slowly, taking time to listen to what is being said ▶

and thus giving the appearance to Americans that they are not engaged, are passive and have no opinion. These differences can easily lead to unintended biases.

The problem may go beyond verbal communication. Grant applications to the US National Science Foundation from Asian principal investigators between 2004 and 2011 have been consistently funded in lower proportions than those from black, Hispanic and white principal investigators[5], which suggests that differences in writing styles may lead to biases. For example, east Asians' humble demeanour could cause them to describe the implications of their research in modest terms, which might bring them lower ratings from reviewers.

The idea of what makes a good leader in the United States needs to be re-examined. Cultural differences in communication style need further study; peer-review panels, managers and others should be trained to avoid biases. One model is the Strategies and Tactics for Recruiting to Improve Diversity and Excellence programme at the University of Michigan in Ann Arbor. Such programmes help scientists and engineers to be more effective in global collaborations and careers. At the same time, Asians need to recognize that hard work is not enough; they should seek training in communication, assertiveness and leadership skills.

The inequalities that mark the career arcs of Asian scientists and engineers in the United States are not widely discussed; the science community needs to bring greater attention to the data. We also need to look at whether Asians are recognized for their achievements, and whether they are receiving awards and becoming members of the US National Academies in numbers roughly equivalent to the proportion of Asians who rise to the level of full professor.

Diversity is said to be a strength of the United States. If cultural differences are recognized and respected, the country's scientific enterprise is sure to benefit. ■

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1. *Doctorate Recipients from U.S. Universities: 2009* NSF 11-306 (National Science Foundation, 2010).
2. Wu, L. & Jing, W. *Issues Sci. Technol.* **28,** 82–87 (2011).
3. LEAP *2010 API Representation on Fortune 500 Boards* (LEAP, 2010).
4. *Asian American and Pacific Islander Work Group Report to the Chair of the Equal Employment Opportunity Commission* (EEOC, 2008).
5. *Report to the National Science Board on the National Science Foundation's Merit Review Process Fiscal Year 2011* (National Science Foundation, 2012).

TURNING POINT
Sarah Blackford

Science-careers adviser Sarah Blackford, head of education and public affairs at the Society for Experimental Biology in Lancaster, UK, assumed that she would be a research scientist. But after she landed a contract-research post, she realized that her interests lay elsewhere, and she manoeuvred through a series of jobs from journal publishing to careers development. In October, Blackford published her first book, Career Planning for Research Bioscientists *(Wiley-Blackwell). She is on the steering committee for the* Naturejobs *Career Expo.*

What did you hate about research?
I used to find it really tough doing the experiments. I am just not a very practical, technical person, and don't follow protocol very well — I can't go by a recipe in the kitchen.

But were there aspects that you enjoyed?
Presenting results in papers and posters, and going to conferences. I also liked interacting with people — negotiating for equipment, for example. When my contract came to an end, I thought about scientific publishing. I would have a foot in science, but would not be doing lab work. Everyone breathed a sigh of relief.

How did you transfer to careers advising?
I was the assistant editor at the *Journal of Experimental Botany*, based at the University of Southampton, UK, and biologists there kept bringing me their CVs — because I worked in publishing, they thought I would be a guru on language and writing. I enjoyed helping them, so I started volunteering at the university's career-services centre. I helped with CV workshops and sat in on interviews.

How did you move into paid careers advising?
My job relocated to Lancaster University when the journal editor changed, so I went to volunteer with their career services — and this was the turning point for my life. They were looking for someone to cover for a person on sabbatical, and I got the job. It was for only three months, but I knew I had to take it — and as it turned out, the job lasted for two years. After that, I had enough experience to get a job at the University of Leeds, UK, for a year and a half, where I wrote marketing plans, organized conferences, liaised with employers, ran careers workshops.

What prompted you to write a book?
I missed working with scientists, and a job came up with the Society for Experimental Biology involving career development, science communication and education. I have been in the post since 1998. A few years ago, while running careers workshops at a conference in Finland, I was chatting with a marketing manager and said flippantly that one day I would put all this information into a book. When I got back to my office, I had an e-mail from the commissioning editor at a publishing house saying he understood that I was thinking about writing a book.

Why did you focus on bioscience careers?
All this valuable careers information is being directed to people at conferences, but there was almost nothing in writing for bioscientists.

Do you have advice for biomedicine postdocs?
They need to keep learning new techniques and skills. They need to campaign for better contracts, the right to develop management skills, the opportunity to teach or do whatever they want to do to improve their career prospects. They can't let their supervisor steer for them. Universities are employing fewer technicians now, and postdocs are in danger of becoming supertechs. They also need to decide whether taking a third postdoc is an advantage. It may be convenient, but they ought to ensure that it will build on their current capabilities so that they are improving their career prospects.

What caveats do you find yourself repeating to early-career biomedical researchers?
You have to sell yourself. One of the easiest ways is through social media and networks. You need to network, because it is other people who get you jobs. Postdocs especially aren't using social media and networks enough: LinkedIn, for example, is extremely valuable because a lot of recruiters use it. You can meet influential people online — modern networks are very democratic. Opportunities are out there. ■

INTERVIEW BY KAREN KAPLAN