

NEWS

Emerging shortages

The booming economies of Brazil, China, India, Singapore and possibly Russia could face significant science and engineering workforce shortages as soon as next year, a group of recently released studies suggests.

Demographers from these countries analysed government data to predict the future size of the science and engineering workforce, as part of a project called 'The Evolving Global Talent Pool', coordinated by the State University of New York's Levin Institute in New York City. They presented their analyses at a 30 October symposium in Manhattan (see go.nature.com/9gAO2c). Although the various analyses were released at different times over the past four years, this is the first time that country trend comparisons have been highlighted.

The numbers suggest that mismatches between talent supply (the number of graduates that the countries' universities are cranking out) and demand in government, industry and academic sectors could become particularly acute within a decade. According to the report, significant shortages of graduates are likely to be evident by next year, despite considerable investment in higher education and research and development by each country's government. This raises a serious question, it says, about whether corporations, education systems and societies understand the demand issue correctly.

China's supply of relevant professionals, for example, is expected to be 3.48 million next year. But demand will have soared to some 3.85 million by then, and will rise to 5.9 million in 2015, according to data compiled by Denis

Fred Simon, a professor at Pennsylvania State University's School of International Affairs in University Park, and Cong Cao, a senior research associate at the Levin Institute.

India faces a shortage of 60,000 engineers by 2010 and 2.45 million by 2020, according to R. Venkatesan and Wilima Wadhwa of India's National Council of Applied Economic Research in New Delhi. And Poh Kam Wong of the National University of Singapore predicted that the island state would produce just 55.2% of the science and technology professionals it would need in 2010, requiring some 44,000 foreigners to fill the gap.

However, although there are big shortages in some fields in these countries, there are surpluses in others. Aspiring scientists and researchers may not receive market signals about job availability quickly enough, according to Simon.

"Very few countries do demand-side analysis," says Simon. A lack of quality training and education also contributes to the shortages, says the report, because many graduates in these countries have degrees from institutions with a high proportion of poorly qualified faculty.

The studies have an important caveat: the type and extent of the data available in each country vary widely, and governments use different demographic categorizations of science and technology professionals. China's statistics, for example, included as science or engineering professionals people without degrees who have been working in those fields for at least 10 years. ■

Gene Russo

IN BRIEF

Postdocs on a pittance

Postdocs in Canada are underpaid and face uncertain career prospects, according to a 3 November report by the Canadian Association of Postdoctoral Scholars. *A Postdoctoral Crisis in Canada* says that current postdoc stipends average Can\$30,000 (US\$28,600), less than a graduate student scholarship, which it says averages \$45,000, and less than the \$37,000 pay of an entry-level research technician. Based on a survey conducted earlier this year, the report suggests that Canadian postdocs are less likely to take a university post than two decades ago, in part because there are fewer such jobs. Some 55% said they were pleased with their role and training as a postdoc.

Tenure or family?

Marriage and childbirth are what stop most female US graduate students from becoming tenured researchers, according to a report by Washington DC think tank the Center for American Progress (CAP) and the University of California, Berkeley, School of Law. *Staying Competitive: Patching America's Leaky Pipeline in the Sciences* found that married mothers with a PhD are 35% less likely to enter a tenure-track position in the sciences than married fathers with PhDs, according to a National Science Foundation survey. And they are 27% less likely than their male counterparts to get tenure after securing a tenure-track post. The report advises universities and funding agencies to create family-friendly policies, including six weeks of paid maternity leave and a week of paid parental leave.

Huge cuts by drug firms

Pfizer is closing 35% of its global research and development space, according to a 9 November announcement. The New York-based drug company, which employs 14,500 people in research and development worldwide, has said that R&D personnel cuts associated with the closures will make up a significant percentage of the 15% company-wide job cuts planned. Pfizer, which last month acquired US drugmaker Wyeth, has disclosed no further information and did not return phone calls by press time. In early November, US drugmaker Johnson & Johnson announced plans to lay off about 8,000, but did not reveal how the cuts would affect its R&D personnel.

POSTDOC JOURNAL

Climate-change depression



My freelancing has kept me busy. I have multiple projects due by the end of the month, focusing mostly on climate change and biodiversity; the next few weeks are going to be hectic. Seasoned freelancers tell me this is the way of my new world. It's feast or famine.

Trying to work from home during my son's naps can be a struggle. More challenging yet is trying not to get sucked into a vortex of depression regarding the potentially apocalyptic implications of the topics I'm writing about.

Apparently I'm not the only one fighting this condition.

It even has its own name, 'climate-related depression'. And Australian doctors recently reported a case of 'climate-change delusion' in which a teenager refused to drink water, as he was convinced that he would cause a major water shortage in drought-stricken Australia. Extinctions here, range shifts there, and pathogens and pests expanding everywhere. With all the tabloid reports, it is easy to become haunted by nightmares of a stark Earth devoid of life.

But it's not all bad news, and to keep my sanity I focus

on the positives. Animals and plants have an amazing capacity to adapt. We can help them. Many of my projects aim to help educate and inform. And let's face it: my freelance work, much of it catering to academics and policymakers, will have a far greater impact than most of the scientific-journal papers from my postdoc days. I believe that what I write matters. That is my cure for climate-related depression. ■

Joanne Isaac was a postdoc in climate-change effects on biodiversity at James Cook University, Townsville, Australia.