

## **Thinking Globally about Science and the UK's Missing 56% of Elite Scientists**

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Viewed from the point of view of the United States, I agree with Larry Summers in the FT in January. His case -- America must stay ahead in the life sciences -- makes natural sense. I am also sympathetic to his concerns about respect for the scientific method, and, like him, I worry about so-called intelligent design.

But there is another and more subtle question.

Americans won all the 2006 Nobel prizes in the natural sciences. Andrew Fire of Stanford University and Craig Mello of the University of Massachusetts were joint winners of the Prize in Physiology or Medicine; Roger Kornberg of Stanford University received the solo award in Chemistry; the prize in Physics went to John Mather of NASA and George Smoot of the University of California, Berkeley. An American, Edmund Phelps, also won the award, although it is not technically a Nobel Prize in the original sense of Alfred Nobel, given in our subject, Economics.

Ought we to be concerned about such dominance? For the good of mankind's creativity, I mean. Might it be better if Planet Earth had its scientific talent (and funding) spread around more evenly?

Most people in the United Kingdom are unaware of the extent of our brain drain to other countries -- particularly to the United States. My research group is currently trying to study this issue. We are slowly collecting data. Some important work was published in 2004 in a fine but comparatively little-known article by John P.A. Ioannidis in the FASEB Journal, that is, the Journal of the Federation of American Societies of Experimental Biology. It makes striking reading.

Here is a statistic that I hope my countrymen and women will find both remarkable and a concern: 56% of UK-born elite scientists have left the United Kingdom and currently live abroad.

To be precise about the source of these data, the calculation is done in the following way. First, look at the world's 250 most-cited scientists across all fields; they are helpfully listed on a website called [www.isihighlycited.com](http://www.isihighlycited.com). Then count up all those who were born in the United Kingdom, and compare with where they now work. In this way, one gets an estimate of the elite UK brain drain: 56% of our most brilliant scientists have gone. Admittedly we are talking about a small number of individuals; nevertheless, they are exceptional individuals.

Clusters, as Larry Summers persuasively points out, do seem to be productive in intellectual endeavour. That suggests there might be a powerful case for one country to scoop up the world's best people and push them together to spark off one another in a mutually valuable way. Yet a difficulty remains. When one reads the biographies of leading scientists, one is struck by the fact that great discoveries usually came from unconventional ways of thinking. This makes me believe that dropping so many of Planet Earth's scientists into the same American part of the globe may make them worryingly homogeneous. Such intellectual homogeneity could, in the long run, be bad for scientific knowledge and thus for human welfare on our planet.

There is more to this debate than ensuring that the USA leads other countries. What we need, and I expect Larry Summers would agree, is that the world of thought flourishes.

### *Reference*

J.P.A. Ioannidis. Global Estimates of High-Level Brain Drain and Deficit. FASEB Journal. June 2004. Vol. 18. 936-939.