



Austerity-led brain drain is killing Greek science

Lack of funding and recruitment freezes are driving young researchers out of the country, warns Varvara Trachana.

Science in Greece is going backwards. This month, researchers lost access to the journal *Bioinformatics*, a top-ranked title in mathematical and computational biology. Many more publications are likely to disappear from Greek libraries. The Ministry of Education has not paid the bills for its subscription bundles. The largest publishers — including Elsevier, Springer and Taylor & Francis — have threatened to suspend access. Others have done so already.

The denial of scholarly papers, the lifeblood of research, to Greek scientists could mark the beginning of the end for creative science at universities and research institutes. We will no longer be able to keep up with international contributions. In areas such as biomedicine, it is crucial to have access to the latest information. Many Greek researchers, unable to afford personal subscriptions to their favourite journals, are already considering reviving a practice that was common a decade or so ago — contacting friends and colleagues in foreign research centres and asking them to fax or e-mail articles.

For many readers of *Nature*, the hardship faced by Greek scientists will come as no surprise. The country is reeling from six straight years of recession and unprecedented austerity measures. More than one-quarter of Greek people are out of work.

I am one of them. I am a biologist with a PhD in biological chemistry from the Aristotle University of Thessaloniki. In 2003, I went to Spain to work as a postdoc at the National Centre of Biotechnology in Madrid. In 2008, I returned to Greece as a research scientist with the National Hellenic Research Foundation in Athens, on a succession of short-term contracts. In March 2011, I was elected assistant professor of cell biology at the faculty of medicine of the University of Thessaly in Larissa. But I never began work there: I am one of about 800 faculty members who are still waiting to take up appointments around the country because the government refuses to approve the budget necessary for their salaries. They are distinguished scientists, many with years of postdoctoral experience, who have been selected through a long and demanding process and have been appointed by the heads of their respective universities.

The departments that selected these 800 faculty members are struggling to teach their students. In 2011, for the first time in decades, the Ministry of Education placed no new university professors. The scientific and professional prospects of young scholars in Greece are evaporating; this will leave the country's universities lifeless and impotent. Budgets for research institutes have been reduced by 30%. The 2013 education budget will cut funds by a further 14% and condemns Greece to scientific and educational dormancy.

There are no signs that the Greek government

understands that long-term commitment to funding science and education must be part of the strategy to boost economic growth. In 2007, even before the most recent cuts, university and research funding in Greece stood at 0.6% of gross domestic product in 2007, already far below the European Union average of 1.9%.

Wages of researchers and faculty members have been reduced by 20%. If someone tells you that the Greek economy fell because of giant public-sector salaries, tell them that the average monthly wage of a university lecturer here is now around €1,000 (US\$1,300). Researchers and professors who have spent years building their careers are asking whether it was worth it.

Scientists have adapted. They have learned to use the bare minimum of expensive reagents. They have become skilled at working with their overcoats on when deliveries of heating oil fail to materialize.

But many young scientists are heading abroad. In 2010, about 120,000 Greek scholars lived and worked elsewhere, about one-tenth of the total. The number is now estimated at 150,000. The young, skilled workforce, a key factor for economic development, is disappearing exactly when society needs it most. I, too, am considering whether to leave. The situation in Greece, combined with plans by European Union leaders to cut the research and development budget, paints a bleak picture for future generations.

Greek science is worth investing in and worth saving. In 2012, against all the odds, the proportion of the country's research that

contributed to the top 1% of most-cited articles was 13th in the world, above Canada, Italy and France. This human potential should be nourished by urgent government action.

A good place to start is to resist calls from existing professors to raise their retirement age from 67 to 70. The change has been suggested as a short-term fix for academic departments stretched to breaking point by the hiring freeze and retirements. Such a move would eliminate any chance that the new professors will be placed, given that the national programme of fiscal stability calls for the public sector to be dramatically reduced by making only one appointment for every ten retirements. It would block the natural and necessary renewal of university personnel with new blood. It would further accentuate the rapid ageing of Greek universities and leave faculties as shells containing only a handful of older professors and next to no lecturing staff and young researchers. We know from evolutionary biology that such micro-societies soon become extinct. ■

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