

# nature structural & molecular biology

## In times of crisis

**In some countries, science funding has seen a cash boost intended to stimulate long-term research efforts and competitiveness in response to the global economic crisis; in others, researchers and university employees are being forced to tighten their belts to accommodate budget deficits.**

As President Barack Obama announced his proposal for the 2011 budget last month, US scientists must have been relieved to learn that funding for the federal science agencies, including the National Institutes of Health (NIH) and the National Science Foundation (NSF), is set to increase, with an extra \$1 billion slated for the NIH compared to this year. For the NIH, 2009 was a boom year, thanks to the \$10 billion infusion received under the American Recovery and Reinvestment Act. There are fears that spending will drop, but for the moment, US investment in research continues.

President Nicolas Sarkozy of France has responded similarly, announcing a €35 billion research stimulus package. An €11 billion portion of this is intended to create 5–10 campuses of research excellence. The scheme, modeled partly on Germany's Excellence Initiative (in which universities compete to win 'elite' status that makes them eligible for extra funding), is aimed at making France's 83 universities more competitive. This is a radical move, as the French state universities have long been considered equal in terms of funding and salaries. Elsewhere in Europe, Germany's center-right alliance government has vowed to maintain the generous funding agreements for universities and research promised by the previous government. This means that the budgets of major research organizations, including the Max Planck Society and the German Research Foundation DFG, will rise by 5% a year until 2015, and the Excellence Initiative will keep the €2.7 billion promised for the period 2012–2017.

Whereas European countries such as France and Germany have followed the US example by increasing their investment in research, several other European countries, including the UK, Spain and Greece, are responding differently to the economic crisis. Greece has one of the lowest levels of research investment in Europe, investing less than 0.6% of its gross domestic product (GDP); the European Union's average is 1.85%. Although the recently instated socialist government has promised to increase research spending to 2% of GDP within the next four years, this seems unlikely in the current economic circumstances. Greece's predicament is not new and has only been exacerbated by the country's worsened economic situation, but meanwhile in Spain, government expenditure on research has been growing since 2000. Also, the past decade saw the establishment of self-governing research centers, which have attracted prominent Spanish and non-Spanish scientists from abroad, providing Spain with a much more competitive scientific infrastructure. However, the economic crisis has caused the tide to turn, with Spanish universities and public research organizations now facing a 4% cut in public funding for research and development in 2010. If these

cuts mark the beginning of a trend toward shrinking science funding, the good work of the past decade could be undone in no time.

Research in the UK could face a similar fate. Following drastic cuts in the 1980s under a conservative government led by Margaret Thatcher, British science thrived under a science-friendly Labour government. But the economic crisis has left the current government with a heavy deficit after backing the banks and stimulating consumer spending. This has led to public-spending cuts, with higher education and research under fire while 'ballot box-sensitive' areas including health care, police and schools are being protected in light of a general election planned for the spring. Leaders of the Russell Group of 20 leading UK universities, which includes Oxford and Cambridge, have expressed concern that the government's planned spending cuts of up to £2.5 billion could cause irreparable damage to the British higher-education system. Leading universities such as Imperial College and University College London are already tightening their belts in preparation and have started to cut jobs, including academic posts. UK scientists are justifiably angry when their jobs and research are being threatened while bankers' failures are rewarded with bonuses.

Sadly, governments often lack long-term vision when it comes to science funding. Politicians and civil servants holding the purse strings fail to recognize that science and technology can push social and economic development. A draconian case in point is the Japanese government, which came into power in August 2009, and which, despite pledging more support for science, has been looking to cut budgets. A working group of the Government Revitalization Unit, chaired by Prime Minister Yukio Hatoyama, has started to evaluate hundreds of government-funded science projects. The working group, which includes mostly nonscientists and a small number of academics, devotes just one hour (!) to each project, and the project under review is generally defended not by scientists but by ministry officials. The working group assesses the effectiveness of each program and recommends either termination or a reduction in funding by half or a third, with no option to hold the funding steady or increase it. Because the sessions can be viewed live on the internet and the recommendations are posted online, some scientists have started to organize protests in response to the working group's recommendations. Japanese scientists are understandably upset by the latest developments and fear that the impending measures will threaten the country's global scientific standing, driving scientists abroad. No doubt scientists everywhere can recognize and share these fears. We need to do what we can to make sure that such an example is not emulated elsewhere. ■