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mixed legacy – p13**

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**Archiving Cologne collection's comeback
after construction collapse – p6**

Commission bids Glover a silent farewell

Researchers call for clarification as CSA post is left to expire

A TENSE RELATIONSHIP between the European Commission and the chief scientific adviser to its president ended in unceremonious fashion this month, as Anne Glover was quietly relieved of her duties.

Glover's mandate as CSA expired with the tenure of president José Manuel Barroso on 31 October, but her contract with the Commission lasts until February. However, on 11 November, she received an email informing her that the function of the CSA had ceased to exist, meaning she was free to leave if she wished.

Glover's departure was expected, but many observers were hoping that the incoming president Jean-Claude Juncker would appoint an immediate successor. Instead, they say, the developments show that science advice is not high on Juncker's agenda. "It's a combination of indifference and being too busy—it's a low priority," says James Wilsdon, of the Science Policy Research Unit at the UK's University of Sussex.

This conclusion is seemingly supported by the explanation from a Commission spokeswoman, who says that the CSA post has "simply expired" and the president has "not yet decided" how to deal with independent scientific advice.

According to a Brussels source, Glover sent numerous messages to Juncker after he was elected to make the case for the CSA post to be continued, including requests for meetings. However, she received no reply. This illustrates the frosty nature of the relationship between the CSA and the Commission—a matter on which Glover has spoken frankly in recent months.

"The most worrying aspect of this was the cursory way in which it was dealt with," says Wilsdon. "I thought they might take longer to reach a decision, and spend time talking to people. But Juncker refused to engage in a serious way with Glover, which strikes me as utterly self-defeating."

As the news broke, research leaders expressed their annoyance that the CSA post was not being renewed. "This sends a signal that science and its role in policy-making has been downgraded at a time when Europe needs to do all it can to support innovation through an effective, realist and evidence-led policy frame-

by **Laura Greenhalgh**

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work," said Mark Downs, the chief executive of the UK's Society of Biology.

Others linked Glover's departure to her support for genetic modification, following a campaign by environmental groups to have the CSA post abolished. But according to Wilsdon: "Characterising this as some sort of anti-science agenda from the Juncker presidency is incorrect—there's no evidence of that."

On 14 November, the European Academies Science Advisory Council asked Juncker to clarify his intentions. This was echoed in a statement from Paul Nurse, the president of the UK's Royal Society, who said: "If the Commission has a plausible plan for ensuring that scientific evidence will be taken seriously, it needs to start sharing it with people soon, otherwise it will encourage those who portray the Commission as out of touch and not willing to listen to informed advice."

Some believe that Glover's position should be reinstated, but others argue that the Anglo-American model of an individual CSA is not tenable in Europe, where committees are usually employed to offer collective advice at both the national and EU levels. "Europe is not a single monarchy, and if you don't have a network you cannot accomplish much," says Jerzy Langer, a member of the Polish Academy of Sciences. "Glover is a superb individual, but she didn't have much influence."

Both options remain open to Juncker. "The way he formulated the email to Anne leaves him plenty of room to say: 'I never said there wouldn't be a CSA'," says the Brussels source. "He could claim there's been a huge misunderstanding."

It is also possible that Juncker will do nothing, believing he has the right structures in place already. "He could just ignore it, as he has ignored all previous debates on the CSA, and delay a decision until nobody's asking for it any more," says the source. "It's a very popular political tactic."

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Wrong rift

Anguish over losing the chief scientific adviser is largely confined to one side of the English Channel

The departure of Anne Glover as chief scientific adviser to the president of the European Commission has been widely and unsympathetically portrayed, at least in the UK media, as a symptom of anti-science sentiment on the part of the Commission president Jean-Claude Juncker.

Scientific leaders who worked with Glover are understandably disappointed that the role hasn't been retained. Some say that Juncker's team doesn't care about research, or that it takes issue with Glover's well-publicised views, criticised by environmentalists, on genetically modified crops.

Neither assertion rings true. Research is more prominent in the EU's budget plan—which Juncker was instrumental in framing as head of the Eurogroup—than ever before. There is nothing in his public statements or his reputation at the European Parliament (or back home in Luxembourg) to suggest that he carries any anti-science agenda in the sense of rejecting scientific evidence in policy-making on ideological grounds.

And the idea that Juncker, a mainstream, pro-business conservative, is dropping Glover at the behest of the Greens is almost laughable. It is a fantasy to think that a handful of popular but poorly financed pressure groups such as Greenpeace could hold such sway in Brussels.

It is true that Glover made trouble for herself by taking a strident public position on the issue of GM crops, which deeply divides EU member states. She struggled to acknowledge the case against the technology, last year describing it unhelpfully to *The Scotsman* as “a form of madness”. Perhaps as a laboratory biologist, she was simply unaware of the powerful ecological arguments against GM crops. If so, her misunderstanding may inadvertently demonstrate one of the reasons the CSA post is not being renewed.

Different nations around the world have traditionally taken very different approaches to receiving scientific and technical advice. The concept of a single CSA is essentially an Anglo-American one. The idea has never taken root in France, Germany or any other major European nation, and has not been employed in China or Japan.

The idea of a single, politically appointed figurehead for science and technology advice does not sit well with federalism or with the concept of a democracy in which everyone should be allowed a voice. In Germany, for example, the influential Wissenschaftsrat is painstakingly constructed to reflect various different perspectives from all parts of the country.

Everyone in Brussels is all too familiar with the infuriating tendency of the British to assume that theirs is the best way of doing things and that they are enduring any different approaches within the EU almost on sufferance.

Since Glover's appointment by José Manuel Barroso in 2011, the onus has been on advocates of the CSA approach to show that it can be genuinely representative and effective. Merely asserting that this is the case does not make it so. The Commission needs to take an approach to scientific advice that is based on collegiality and diversity, and the loss of the CSA post does not stand in the way of it doing this.

elsewhere

“It would be good to find something totally unexpected.”

Fabiola Gianotti, the next director-general of the particle physics laboratory Cern, sets her first goal. *Horizon Magazine*, 7/11/14.

“Proposals are only useful if they are adopted, accepted and implemented properly on the ground.”

The European Commission's vice-president Frans Timmermans explains why the Commission will collaborate with the European Parliament from the outset on future work programmes. *Pan-European Networks*, 12/11/14.

“Those who fit in the category of ‘good scientists’ in the current peer-review-based evaluation criteria may not always be so.”

Guillermo Orts-Gil, who leads a Max Planck nanotechnology research group in Germany, says citizen engagement may soon equal citation rates in evaluations of job performance. *Euroscientist*, 12/11/14.

“No must mean no.”

European Green party spokesman Bart Staes says it's important for member states to have the right to opt out of trials of genetically modified crops. *EurActiv*, 12/11/14.

“We definitely need to improve the technology in all different energy sectors.”

Giovanni De Santi, director of the Joint Research Centre's energy research institute, says the 2015 Strategic Energy Technology Plan should not attempt to prioritise too much. *Science Business*, 13/11/14.

“Maybe today we didn't just land once, but twice.”

European Space Agency project manager *Stephan Ulamec* says a small bounce explains the confusion about whether the Philae comet probe had landed. *Science*, 12/11/14.

“It is never entirely clear what the numbers really mean, especially in light of endemic corruption and misconduct.”

Richard Suttmeier, a researcher of Chinese policy at the University of Oregon in the United States, says reports that China may outspend the US on R&D by 2020 may be exaggerated. *Nature*, 12/11/14.

decade

“The research market is very far away from being open.”

Peter Nijkamp, chairman of the Netherlands Organisation for Scientific Research, says national research councils in Europe should collaborate more.

Research Europe, 18 November 2004

what's going on

Moedas's team shapes up

Carlos Moedas, the incoming research commissioner, is to keep several staff members in the Directorate-General for Research and Innovation. Jack Metthey, Maive Rute, Octavio Quintana Trias and Pablo Amor will remain as division heads, and Robert-Jan Smits will stay on as director-general at least temporarily. António Vicente, previously the chief of staff for Moedas in his former role as secretary of state to the Portuguese prime minister, will be chef de cabinet.

Concerns over unmet payments continue

MEPs have called on the Council of Ministers to prioritise discussions about unpaid 2014 bills over 2015 budget negotiations. The Council met on 14 November to discuss the 2015 budget, after its first proposal was rejected by the European Parliament. But the Parliament's budgets committee has asked the Council to focus on the EU's unpaid bills, which reached €23.4 billion in 2013 and are expected to hit €28bn by the end of 2014.

Quake convictions overturned

An Italian court of appeal has quashed the manslaughter convictions of six Italian seismologists. In 2012, a judge found the scientists guilty of releasing "overly optimistic" public statements in 2009 that may have led to people not preparing fully for an earthquake. The earthquake hit the town of L'Aquila, killing 309 people. L'Aquila's court of appeal cleared the six scientists on 10 November after more than 5,000 of their peers asked for an acquittal.

More funding needed to halt brain drain in eastern Europe

Eastern European researchers struggle to win enough funding to justify staying in the region, a survey by the Swiss National Science Foundation has shown. One third of the eastern European respondents said they could not find sufficient national funding to make collaboration in their own countries worthwhile. Researchers also said that not enough grants were given to doctoral students, forcing many to leave the region.

Commission taken to court over US trade deal

A group campaigning against a proposed trade deal between the EU and the United States has filed a lawsuit against the European Commission for "stifling citizens". The Stop TTIP coalition, comprising 290 civil society groups from 23 EU countries, submitted a European Citizens' Initiative in July to ask for a hearing on the Transatlantic Trade and Investment Partnership at the European Parliament, but the Commission said it would not register the initiative.

Parliament calls for reassessment of EU spending

The success of EU funding should be measured less in terms of error rates and more in terms of project progress, according to the European Parliament. The European Court of Auditors' annual report showed that the error rate for EU spending dropped slightly between 2012 and 2013, to 4.7 per cent. However, MEPs said this number did not reflect wider problems affecting EU projects.

Medicines agency responds to ombudsman

The European Medicines Agency has said it is slowly implementing its data publication policy to improve the transparency of clinical trials, but has to erase confidential data. Emily O'Reilly, the European ombudsman, wrote to the EMA in May to express her concerns about its proposal to only make data available to people who had agreed to its terms of use.

europe

University rankings grow in influence but leave institutions confused

Universities feel pressured to use rankings despite confusion and criticism over their scope and methodology, the European University Association has said.

A study by the lobby group says that the rising influence of league tables has pushed universities to follow rankings closely to maintain or improve their reputations. Of the 171 higher education institutions in 39 European countries surveyed for the study, 60 per cent said they took rankings into account when developing plans.

However, there is some confusion at universities about what can be considered a ranking and how meaningful the different indicators are, according to the group's report, *Rankings in Institutional Strategies and Processes: Impact or Illusion*.

Different ranking systems calculate and define indicators in different ways, the report notes, which can be a source of confusion and additional work for universities as they submit information for league tables. "Institutional people say it would be easier if they didn't have to calculate the number of students in different ways for different purposes," says Tia Loukkola of the EUA's institutional development unit.

Peer pressure also causes rankings to be used, and universities must constantly improve their reputation

by Safya Khan-Ruf

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through increased scientific publications, says Carmen Pérez-Esparells, a former vice-rector for innovation at the Autonomous University of Madrid. "It's a cycle and they're all related: reputation, research production and rankings." She adds, however, that the data are useful as a transparency tool, particularly in Mediterranean countries where finding accurate data can be difficult.

Many European universities are looking for alternative measures of performance because of perceived league table bias in favour of English-speaking universities.

But Brigitte Göbbels-Dreyling, the deputy secretary-general of the HRK, Germany's rectors' association, says that scepticism about methodology has led to rankings having less importance in Germany: "We are convinced it is not possible to measure the excellence of the whole university this way."

The report suggests the possibility of a common data set to allow fairer comparisons at international level. However, this would require consensus between many different systems and institutions on indicators and definitions of terms, and is thus "not very likely in the immediate future", says Göbbels-Dreyling.

Alzheimer's research too risky for industry

Europe is at risk of losing its momentum in Alzheimer's disease research, as increases in public funding are too low and companies are reluctant to take risks, researchers have said.

The EU-wide Joint Programme on Neurodegenerative Disease Research, or JPND, launched in 2010, may not be enough to resurrect industry funding in the field, according to those involved. The initiative has led to greater collaboration and increases in public funding for work on Alzheimer's, but this progress is far short of what is needed, they say.

The JPND spends about €370 million in pooled national and EU funding on neurodegenerative diseases. Work on Alzheimer's receives a third of the funding, but a single clinical trial for a potential drug can cost €80m, says Claude Wischik, chairman of mental health at the University of Aberdeen and of the pharmaceutical company TauRx. "€1m or €5m per project goes a long way when you're funding a basic researcher," he says. "But to turn that into a product that is useful for people is extraordinarily expensive: a different order of magnitude."

A G8 summit held in London last December promised to focus more EU resources on Alzheimer's, and has led to an increase in public funding in the UK, where prime

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minister David Cameron pledged to double spending on Alzheimer's research to £122m (€156m) by 2025. EU member states have been asked to devise national action plans, but progress on these has been mixed.

One problem is that the billions of euros spent on Alzheimer's disease so far have not yet led to any significant advances in drug production, says Philippe Amouyel, the chairman of the JPND. As a result, the European pharmaceutical industry is stepping back from Alzheimer's research because "it has poor return on investments, is too risky and is still very difficult to understand", he says.

Wischik estimates that, globally, companies have spent €12bn to €16bn on the amyloid treatment option, without producing a successful therapy. "Some of them got so badly burnt, they just decided that Alzheimer's disease is too hard," he says.

For Amouyel, the problem could be tackled through the JPND if its members increased collaboration, as big international projects offer the security and access to knowledge that can reinvigorate industry spending. "We need a lot of brains and a lot of money," he says.

Variety of funding models must stay, Commission told

Minimising the differences between national funding models in the European Research Area could be detrimental for science, according to Science Europe.

In a position statement on ERA progress, the association of research organisations and funders says that national funders need to be flexible and choose the right policy mix for their own context and problems, rather than being subjected to a one-size-fits-all approach.

The document, which refers to a 2012 communication issued by the European Commission, says that national needs vary and evolve. Matteo Razzanelli, a senior policy officer at Science Europe, says that the Commission should not consider a Pan-European funding model as a goal in itself. "Going naively for one single model for the sake of the model would be detrimental for research," he says. "Each country has to find its proper mix."

Science Europe also warns that Pan-European peer review can result in biases, for instance against early-career researchers, women or interdisciplinary research. This could be avoided by giving funders enough flexibility to experiment with different forms of peer review, says Stephan Kuster, the association's head of policy.

by Cristina Gallardo

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However, other research policy analysts disagree with Science Europe's assessment. Manfred Horvat, a senior adviser at Cesaer, a lobby group of engineering universities, says that having more than 30 funding systems in Europe is hindering collaboration with agencies in other regions such as Asia and South America.

"The ERA needs common basic principles and procedures for funding research while allowing a certain degree of flexibility for the accommodation of specific regional contexts," he says.

Peter Tindemans, the secretary-general of the grassroots scientists' organisation EuroScience, says that Science Europe's statement is "a bit nit-picking and based on a misreading of the ERA roadmap". Science Europe does not need to warn against homogenisation, he says, because the Commission is not considering it.

"The Commission says that the balance between competition-based funding and institutional funding will vary," Tindemans says. "Science Europe seems to read something in the ERA communication that is not there."

Ukraine seeks advice on Horizon 2020 success

Ukraine's research system needs more support from the European Commission for the country to succeed in upcoming calls for proposals, according to its academics.

Ukraine's researchers won €26.5 million during Framework 7, and the country's government has said that the aim is to improve on that figure in Horizon 2020. To achieve this, academics say, the country needs more guidance on how to assemble winning proposals.

Yegor Dubynskyi, an adviser at the National Academy of Sciences of Ukraine and a national contact point for the Framework programme, says that researchers have approached him looking for advice on how to improve their use of European research infrastructure and win funding for applied research and innovation.

"Developing effective science and technology cooperation with the EU is still a complicated task for us," he says. "We would like to make our research and innovation system more in line with those of the EU countries."

In a vote on 17 November, Itre, the European Parliament's industry, research and energy committee, renewed the EU's bilateral treaty for science and technology cooperation with Ukraine for 5 years. This document, identical to the one signed for the first time in 2002, gives Ukraine free access to EU-funded

by Cristina Gallardo

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research facilities and enables Ukrainian scientists to visit EU research organisations. An association agreement is expected in early 2015 to allow Ukraine to bid for Horizon 2020 funding.

To build on its Framework 7 success, the country hopes to open up some hitherto untapped research fields with the help of EU partners, Dubynskyi explains. "We need the Commission to come up with a project where the most experienced EU countries can share information and experience with us," he says.

The conflict with Russia has shaken Ukraine's R&D system and made its access to EU funding even more necessary, says Yuriy Yakimenko, head of the Ukrainian Research and Academic Network, a group of universities and academies. Participation in Horizon 2020 is crucial for Ukraine to counteract a dramatic drop in public spending on R&D, which fell from 1.17 per cent of GDP in 2005 to 0.74 per cent in 2011 because of economic problems and low public investment.

"Ukrainian universities really need to be integrated into Horizon 2020," Yakimenko says. "It would be a great step forward for us."

interview bettina schmidt-czaia

From dust till dawn

Five years ago, Cologne's city archive collapsed during a construction project. **Inga Vesper** talks to director Bettina Schmidt-Czaia about salvaging the past.

Just before 2pm on 3 March 2009, a tube tunnel being dug below the Cologne archive building suddenly caved in. Shelves stretching for 30 kilometres tumbled into the waterlogged construction ditch. Two people died. Handwritten medieval contracts, letters from Napoleon and Karl Marx, and countless microfilms, videos, deeds, registers and photos were buried under tons of rubble, dust and mud.

Bettina Schmidt-Czaia, the director of the archive, is still picking up the pieces. Literally. Thanks to hundreds of volunteer helpers, about 95 per cent of the archive's content has already been rescued—some of it from depths of nearly 30 metres below ground and from groundwater aquifers. To preserve these sodden documents, chunks of archive material mixed with rubble and silt were deep-frozen and stored, while documents that had remained dry were farmed out to other archives across Germany to be cleaned and catalogued.

"In the past 5 years we have reduced the number of temporary emergency archives from 20 to 10," says Schmidt-Czaia. "About two-thirds of documents have been through phase one of our archiving process, so we know what condition they are in and where we can find them. But we still have to find space to create a temporary central archive for about 20km of shelving space, so that we can bring everything together until we have a new archive building in Cologne."

Schmidt-Czaia praises the city council for standing by the archive from the start, freely dispensing money and staff to aid the salvage and reconstruction process. The total damage is estimated at an astonishing €1 billion, with €350 million to €400m needed for the document restoration process alone. "Our aspiration is to make everything that was rescued available for use again. All will be restored," says Schmidt-Czaia.

Thanks to the extra funding, the archive has increased its staff numbers from 38 at the time of the collapse to about 200 today. Most are busy restoring documents, but some are restarting original, historical research, based on the archive. Digitised content is being made available as soon as originals are scanned, and several thousand documents are ready for use in physical form.

Still, the chaos resulting from the collapse has limited the speed at which such research can be resumed. Schmidt-Czaia explains that much

archive content is still not sorted and catalogued, and many documents have been split between different archives. "As a history researcher you rarely look at just one piece; you usually do your research using context materials from the archive," she says. "This kind of context is what we cannot yet provide."

But the collapse has also given rise to brand-new research topics. The "Cologne damage symptoms", including shredding, dust and water damage, and severe scrunching, are already part of studies on document restoration and preservation. Progress is also being made on developing digitisation techniques for highly sensitive and fragile materials.

Schmidt-Czaia has taken her own lessons from the collapse—what she calls the "10 commandments of archiving". She has become a staunch supporter of digitisation of even the most recent materials, and is urging other archives to think more about proper packaging and storage. She also says that the fire brigade and emergency services should be involved in archive planning, so that they know where the most important material is kept and how archive materials can be safeguarded. And she is keen on public engagement to create pressure on authorities to support their archives.

"You need to tell people what cultural treasures are in an archive, and teach them why it's important to support and respect history and culture," she says. "The archive should accompany people for their whole lives."

And there's still considerable personal fallout from the collapse. Many staff members, including Schmidt-Czaia, only made it out of the archive with seconds to spare. Some still have "scratches on their soul", she says.

Long-time archivists saw their lives' work drown in mud and are disheartened by the fact that it could take 40 years for the archive to be fully restored. But the eagerness of their new colleagues, many of whom joined the archive specifically to help with the restoration, has motivated them to stick around.

A cost estimate for a brand-new archive building is expected to be finalised this month, and the repository is back to receiving about 3,000 enquiries a year, mostly from PhD students and other researchers. For Schmidt-Czaia, this is motivation enough to continue—even if some people who lived through the collapse may never see the restoration completed.

"If there were no research being done here in 30 years' time, that would be the real catastrophe," she says.

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'Our aspiration is to make everything that was rescued available for use again.'

Wildlife needs a drugs policy

When we take medication, a proportion of it passes through our bodies unchanged and is flushed into the sewage system. Some of the more persistent pharmaceuticals, such as antidepressants and the hormones in the contraceptive pill, evade clean-up processes; they are then pumped into streams and rivers, and also spread on to fields via sewage sludge. On top of this, manure containing veterinary drugs is deposited straight on to fields by livestock and used by farmers as fertiliser.

The effects on wildlife can be dramatic: in India, three species of vulture were almost driven extinct by eating the carcasses of livestock that had been treated with the anti-inflammatory drug diclofenac. Recent studies suggest that drugs designed for humans are entering the food chain of fish-eating species such as otters and ospreys, and can modify behaviour and physiology in creatures including snails, frogs and songbirds. For example, starlings that were fed worms containing a concentration of Prozac equivalent to that seen in wild worms showed changes in feeding behaviour and libido relative to controls.

Pharmaceuticals have been detected in waterways and freshwater animals from Texas to Hyderabad and from Beijing to London. With expanding and ageing human populations becoming ever more reliant on drugs to maintain their health and produce intensively reared livestock, the issue of pharmaceuticals in the environment will only become more significant.

It might seem clear that pharmaceutical companies should be the ones paying to clean up what is effectively pollution. But in the EU the onus falls on water companies, under the aegis of the Water Framework Directive. There is, then, a mismatch between the policymakers and agencies regulating the production and release of pharmaceuticals and those responsible for cleaning them up.

Luckily, mass mortality events involving large, charismatic animals such as vultures appear to be rare. Concentrations of the pharmaceuticals are usually low and the consequences for animals are apparently subtle—alterations to behaviour or reproductive success, for example, often in small, unobtrusive creatures such as cuttlefish, minnows and starlings.

Yet we have a poor understanding of the effects of the combinations of pharmaceuticals being released into the environment, especially on marine and land animals. Ecologists are increasingly convinced that field studies are the best way to capture data on this issue, using toxicological endpoints such as behavioural changes as measures that should prompt regulation.

Kathryn Arnold and Charlotte Burns work in the environment department at the University of York, UK.

However, this approach is still not generally accepted by regulators, who are more comfortable with lab-based results and mortality data. A challenge for scientists is therefore to provide a stronger evidence base for the validity of ecologically relevant measures of eco-toxicity, so that these become reflected in regulation.

Even with a shift in regulators' attitudes towards data, challenges remain in getting scientific advice into policy. Climate change debates illustrate all too clearly the gaps that can appear between scientific advice and policy outputs. These gaps have a number of causes. One is that scientists can work with long time horizons, whereas policymakers generally work within terms of office that restrict the options they are prepared to consider, particularly when some options are unpopular or expensive.

Policymakers are also potentially susceptible to business interests. In the EU, for example, moves in summer 2013 to regulate three pharmaceuticals, including diclofenac and two hormones, as priority substances presenting a significant ecological risk ran into problems. The European Commission, following scientific advice, called to have the pharmaceuticals regulated. The European Parliament, however—following intense business lobbying—voted to have the substances placed on a watch list with no legislative force.

MEPs argued that during a recession the costs of regulation were unjustifiable. Even when scientists have a compelling case, wider concerns often result in policy outputs that do not reflect scientific understanding.

A further issue is communication between scientists and policymakers. It is difficult to communicate complex ideas and data to non-specialists, and scientists are not always their own best advocates when it comes to presenting their findings and arguments in a readily understandable format. Moreover, they are often competing for attention with corporations and interest groups who have experts at public relations on hand to shape the public and policy debates.

These obstacles are not insurmountable: they require, as a first step, greater multidisciplinary and cross-sector collaboration, and more effective policy coordination. Crucially, we need more integration between research groups in different countries. Research funding agencies have a vital role to play in driving this, and the EU is in a perfect position, with its Horizon 2020 programme, to fund ecologically relevant research that can bring to an end the unnecessary medicating of nature.

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'Drugs designed for humans are entering the food chains of otters and ospreys.'

view from the top alexander kritikos

Four assets and five policies to help Greece innovate

For a production process to increase its competitiveness, it needs to become cheaper or more innovative. Governments influence the capacity of companies to make either change to their processes by shaping the regulatory environment and the innovation system.

Greece has ample scope for reform in both areas. Small-business owners complain that they spend up to 30 per cent of their time on bureaucracy related to regulation. And support, financial or otherwise, to turn ideas into products is almost nonexistent, so most ideas created in Greece are turned into products elsewhere.

But the public have been turned against further reform of any kind by 6 years of recession and austerity: the result of the Greek government's decision, under the guidance of the European Commission, the European Central Bank and the International Monetary Fund, to cut wages without aiding innovation.

Just what has been lost is shown by comparison with eastern European countries such as the Baltic states and Poland. Five years ago, they were much poorer than Greece. But they strengthened their innovation systems and will soon overtake Greece in terms of GDP per capita.

The Greek economy is based on relatively small businesses in low-value-added industries such as tourism, drinks and food. These will not provide strong growth; instead, the country must lay the groundwork for higher-value-added goods and services. R&D investments are critical because they yield innovative, exportable goods while creating jobs, prosperity and hope.

There are reforms under way, but they are not enough: R&D needs an innovation-oriented industrial structure and a well-functioning innovation system. This will be a considerable challenge. Some Eurozone economies invest about 3 per cent of their GDP in R&D. Greece invests 0.67 per cent. It is the worst-placed Eurozone country on the Commission's innovation performance index.

On the flipside, Greece has assets that could support a modern innovation system. First, it has excellent research institutes. Unfortunately, its publicly funded researchers have retreated into fundamental research and are not allowed to have real interactions with businesses.

Second, Greece has retained a few innovative firms, such as the energy company Systems Sunlight. These work with research institutes sporadically but not in organised clusters, despite the potential for mutually beneficial cooperation.

Third, Greece has an impressive diaspora. Of the country's top researchers (defined as those in the most-cited 10,000 worldwide), 85 per cent work outside the country. There is also no shortage of high-achievers in finance and business in the diaspora, many of whom would be ready to help pull Greece into the future.

And fourth, Greece has a quality of life that makes it easy to convince people to move there—a crucial asset in the global competition for talent.

To unlock these hidden assets, the Greek government must design an innovation policy that will narrow the gaps in the innovation chain. There are five strategic steps that could be taken, alongside better allocation of the country's meagre public funds.

First and foremost, Greece needs to cut the red tape, making the business environment open to innovation.

Second, Greece must use EU funds to invest in additional, cutting-edge applied research centres that produce high-quality science to support entrepreneurs. It needs an investment strategy that combines EU funds with a shift in public spending from consumption to R&D.

Third, Greece needs to encourage strong ties between universities, public research institutions and companies. Building scientifically competitive research campuses where people from academia and business can mix will help close the gaps in the innovation chain and attract talent. Whether or not Greece becomes an innovation hub depends not only on investments in R&D and research centres, but also on establishing partnerships between the worlds of research, entrepreneurship and administration.

Fourth, this approach will only work if universities and research institutes are politically independent. The government needs to give them an overall budget and leave details such as appointment processes to researchers.

Finally, the Greek diaspora is not yet treated as an economic asset. Programmes designed to target its potential could turn brain drain into brain circulation.

Combined, these steps would create trust in the Greek political system. The sooner that ministers and MPs implement them, the sooner Greece will be on the path to sustainable growth.

More to say? Email comment@ResearchResearch.com

Alexander Kritikos is a research director at the German Institute for Economic Research (DIW Berlin), a professor of economics at the University of Potsdam and a research fellow at two employment research institutes: the IZA in Bonn and the IAB in Nuremberg.

'EU funds must be combined with a shift in public spending from consumption to R&D.'

every new opportunity every discipline

highlights

Environmental policy

The Directorate-General for the Environment invites tenders for a framework contract on economic analysis of environmental and resource efficiency policies. The estimated value of the contract is €14 million [2].

Maritime policy

The Directorate-General for Maritime Affairs and Fisheries invites tenders for an evaluation in the context of the European maritime and fisheries fund. The estimated value of the contract is €1 million [11].

Multiple sclerosis research

Merck Serono invites applications for its multiple sclerosis innovation grant. The budget is €1 million [20].

Global challenges scheme

The Volkswagen Foundation, the Wellcome Trust and Bank of Sweden Tercentenary Foundation invite applications for the Europe and global challenges programme. Funding is worth up to €800,000 [21].

Renewable energy and water

The ERA-Net ERANETMED invites proposals for its call on renewable energies and water resources. The total budget is €13.42 million [25].

deadlines

Opportunities from previous issues of *Research Europe*, listed by closing date. European Commission and associated funders marked **EU**.

Each entry is followed by a Web id

November

28 **EU** Directorate-General for Maritime Affairs and Fisheries study on the evaluation of specific management scenarios for the preparation of multiannual plans in the Mediterranean and the Black Sea *1182429*

EU Directorate-General for Maritime Affairs and Fisheries study on the implementation of the landing obligation in the Black Sea *1182431*

GR Dragon Star travel grants for twinning opportunities *1182493*

UK University of East Anglia visiting research fellowships *206641*

30 **FR** Airbus fly your ideas *1170724*

IE Assistive Technologies for People with Intellectual Disabilities and Autism fellowships *1181813*

AU Australian Rangeland Society scholarships *1170386*

AU Australian Rangeland Society travel grants *1170385*

AU Australian Society of Orthodontists Elsdon Storey research award *1165881*

UK Bank of England Houblon-Norman and George fellowships *207896*

IL Dan David Foundation prizes *204688*

CZ European Academy of Neurology department to department cooperation programme *190976*

CH European Association for the Study of the Liver postdoctoral research fellowships *196095*

NL European Society for Paediatric Infectious Diseases training courses and workshop awards *254898*

FR International Agency for Research on Cancer postdoctoral fellowships for training *201420*

FR International Agency for Research on Cancer postdoctoral position in section for molecular pathology *1172618*

IR Iranian Research Organization for Science and Technology Khwarizmi international award *138968*

IL Israel Brain Technologies mathematical neuroscience prize *1182106*

IL Lady Davis Fellowship Trust graduate fellowships *192788*

IL Lady Davis Fellowship Trust postdoctoral fellowships *192789*

IL Lady Davis Fellowship Trust visiting professorships *185087*

IL Lady Davis Fellowship Trust visiting professorships at the Technion *192790*

JP Mazak Foundation research grants *192896*

FI Tiina and Antti Herlin Foundation grants *1182236*

DE University of Heidelberg international research award in global history *1182069*

December

1 **IT** European Association of Plastic Surgeons young plastic surgeon scholarship *209847*

IT European Association of Plastic Surgeons fellowship *209839*

NL European Society for Clinical Virology training fellowship *202938*

FR European Society of Cardiology basic research fellowship *1174474*

DE Gerda Henkel Foundation research scholarships *1166545*

UG International Union for Quaternary Research skills enhancement grants *1169710*

UG International Union for Quaternary Research project grants *260069*

SK International Visegrad Fund small grants *1169918*

JP Japan Foundation advanced training programme for teachers of Japanese language *1165159*

JP Japan Foundation graduate programme in Japanese language and culture – master's course *1165157*

JP Japan Foundation Japanese language programme for specialists *1165160*

JP Japan Foundation Japanese studies fellowship *1165161*

SG National Medical Research Council of Singapore research investigator award *1165918*

HK University Grants Committee Hong Kong PhD fellowships *1174229*

3 **UK** British Academy Neil Ker memorial fund *182097*

4 **FR** Agropolis Foundation Louis Malassis international scientific prize *1167723*

5 **FR** AXA Research Fund chairs programme *1157917*

UK National Centre for the Replacement, Refinement and Reduction of Animals in Research 3Rs prize *186582*

europa

Wood technology award

Holzindustrie Schweighofer invites nominations for the Schweighofer prize. This recognises innovative ideas, technologies, products and services concerning the European forest-based sector. Four to seven prizes, worth up to €100,000, are available.

Web id: 207235

Email: kairi@schweighofer-prize.org

Deadline: 2 February 2015 [1]

EU environmental policy

The Directorate-General for the Environment invites tenders for a framework contract on economic analysis of environmental and resource efficiency policies. The estimated value of the contract is €14 million over four years.

Web id: 1182640

Email: env-tenders@ec.europa.eu

Deadline: 15 December 2014 [2]

EU water innovation

EUREKA, through the ACQUEAU cluster, invites proposals for its open call. This promotes transnational collaboration for developing innovative projects in water technologies. The call facilitates access to national funding.

Web id: 1170705

Email: information@acquaeu.eu

Deadline: 15 December 2014 [3]

EU defence technologies

The European Defence Agency invites tenders for a study. The tenderer will support the agency in assessing the criticality of raw materials for defence technologies. The contract is worth up to €200,000 over one year.

Web id: 1182709

Email: procurement@eda.europa.eu

Deadline: 17 December 2014 [4]

EU noise reduction

The Directorate-General for Enterprise and Industry invites tenders for a study. The tenderer will deliver answers to three questions relating to the current scope and limit values relating to the noise emission in the environment by equipment for use outdoors. The contract has an estimated value of €150,000.

Web id: 1182731

Deadline: 22 December 2014 [5]

EU maritime management 1

The Directorate-General for Maritime Affairs and Fisheries invites proposals for its guardian of the sea programme. This aims to examine the feasibility and economic viability of maritime activities other than fishing, using a reassigned fishing vessel. The indicative grant per project will be worth up to €300,000.

Web id: 1182623

Email: mare-d1@ec.europa.eu

Deadline: 9 January 2015 [6]

EU law information exchange

The Directorate-General for Home Affairs invites proposals for its internal security fund police call on law enforcement infor-

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mation exchange. Grants support projects addressing one or both of the following priorities: the establishment or streamlining of structures and methods for cross-border information exchange; supporting the exchange of passenger name record data. The budget is €6 million and proposals must request at least €250,000 over a maximum term of 30 months.

Web id: 1182693

Email: home-isf@ec.europa.eu

Deadline: 14 January 2015 [7]

EU maritime management 2

The Directorate-General for Maritime Affairs and Fisheries invites proposals for strengthening regional cooperation in the area of fisheries data collection. This call covers work by regions relating to coordination of collection management and use of data or provision of these data to end users, of biological, economic or fisheries data. Two grants, worth up to €400,000 each, are available.

Web id: 1182593

Email: mare-c3@ec.europa.eu

Deadline: 15 January 2015 [8]

High-performance computing

The Partnership for Advanced Computing in Europe invites applications for its programme. This aims to raise awareness and provide European SMEs with the expertise necessary to take advantage of the innovation possibilities created by high-performance computing.

Web id: 1182699

Email: shape@prace-ri.eu

Deadline: 15 January 2015 [9]

EU cybercrime and abuse

The Directorate-General for Home Affairs invites proposals for its internal security fund police call. Grants support projects addressing one of the following priorities: creating public-private partnerships; supporting an integrated EU approach to prevent and fight cybercrime; prevention of, and fight against, child sexual abuse online. The budget is €5 million and proposals must request at least €250,000.

Web id: 1182696

Email: home-isf@ec.europa.eu

Deadline: 16 January 2015 [10]

EU maritime policy

The Directorate-General for Maritime Affairs and Fisheries invites tenders for an evaluation. The tenderer will provide support services related to fisheries and aquaculture monitoring and evaluation in the context of the European maritime and fisheries fund. The contract is worth an estimated €1 million over one year, and can be renewed up to six times.

Web id: 1182738

Email: mare-tenders@ec.europa.eu

Deadline: 19 January 2015 [11]

Moblex mobility grants

The Danish Council for Independent Research, in collaboration with COFUND, invites applications for the moblex mobility grants, available in the areas of technology, natural sciences, humanities and social sciences. These aim to facilitate more career paths in Danish research, to increase the mobility in research environments and enable researchers at the beginning of their research careers to carry out projects at research institutions in Denmark and abroad. Grants are worth DKK2.5 million (€335,800) each.

Web ids: 1172326, 1172324, 1172325, 1172327

Email: dff-opslag@fi.dk

Deadlines: 27, 28 and 29 April 2015, respectively [15]

Cardiology grants

The European Association of Percutaneous Cardiovascular Interventions, under the European Society of Cardiology, invites applications for its grants. These offer specialised research or clinical training in interventional cardiology. Grants are worth €25,000.

Web id: 259095

Email: eapci@escardio.org

Deadline: 15 January 2015 [17]

Human growth research

Merck Serono invites applications for its grant for growth innovation. This supports the advancement of science and medical research in the field of growth and facilitates new external research to identify potential clinical markers in patients with growth disorders. A total grant of up to €400,000 will be shared between one to three selected projects.

Web id: 1182670

Email: ggi@merckgroup.com

Deadline: 6 January 2015 [19]

Multiple sclerosis research

Merck Serono invites applications for its multiple sclerosis innovation grant. This supports translational research projects improving understanding of MS for the benefit of patients. A total of €1 million will be awarded to one or more projects.

Web id: 1182663

Email: gmsi@merckgroup.com

Deadline: 23 January 2015 [20]

Global challenges scheme

The Volkswagen Foundation, in collaboration with the Wellcome Trust and Bank of Sweden Tercentenary Foundation, invites applications for the Europe and global challenges programme. This aims to stimulate collaboration between researchers based in Europe and other parts of the world on important global issues. Funding is worth up to €800,000 for up to three years.

Web id: 212711

Email: levermann@volkswagenstiftung.de

Deadline: 30 January 2015 [21]

EU ship time

The European Science Foundation invites applications for ship time under the Eurofleets 2 programme. This provides access to 13 research vessels and marine equipment for European scientists and their international and industrial partners working in all fields of marine science.

Web id: 1161880

Email: eurofleets2@awi.de

Deadline: 10 February 2015 [22]

Hypertension award

The European Society of Hypertension, through the Talal Zein Foundation, invites nominations for the Talal Zein award. This recognises work related to basic science, epidemiology, pathophysiology or therapy of hypertension and other cardiovascular diseases. The award comprises €3,000 and travel expenses.

Web id: 1181792

Email: ajmanol@otenet.gr

Deadline: 31 March 2015 [23]

Doctoral programme

The European University Institute invites applications for its doctoral programme. This offers a fully structured programme with close supervision in writing dissertations. Researchers will acquire teaching, research and other skills in the fields of economics, history and civilisation, law, and political and social sciences. The programme is for four years.

Web id: 1170933

Email: applyres@eui.eu

Deadline: 31 January 2015 [24]

EU renewable energy and water

The ERA-Net ERANETMED invites proposals for its joint call. This supports transnational research on renewable energies, water resources and their connections for the Mediterranean region. The total budget is €13.42 million for two to three years.

Web id: 1181502

Email: infocalls@eranetmed.eu

Deadline: 2 February 2015 [25]

EU toxicology

The European Food Safety Authority invites proposals for new approaches in identifying and characterising microbiological and chemical hazards. EFSA aims to fund projects focusing on the development and application of read-across methodologies for the hazard characterisation of chemicals. The grants are worth up to €500,000.

Web id: 1182735

Email: procurement&grants@efsa.europa.eu

Deadline: 30 April 2015 [26]

Early-career innovation

The Netherlands Organisation for Scientific Research, the Netherlands Organisation for Health Research and Development and Technology Foundation STW invite proposals for their innovation research incentives scheme Veni awards. These enable researchers at the start of their academic career to conduct independent research and develop their own innovative lines of research within a research institution. Grants are worth up to €250,000 each over a three-year period.

Web id: 260542

Email: vi@nwo.nl

Deadline: 6 January 2015 [28]

Theme group collaboration

The Netherlands Institute for Advanced Study in the Humanities and Social Sciences and the Lorentz Center invite proposals for their theme group programme. This enables members to engage in intensive interdisciplinary collaboration. Three- or five-month fellowships at NIAS are offered. In addition, the fellowship includes a compulsory one-week workshop and organisational support.

Web id: 1177468

Email: nick.den.hollander@nias.knaw.nl

Deadline: 1 April 2015 [29]

EU systems biology

ERA-Net ERASysAPP invites proposals for its joint call. This aims to generate transnational collaboration for research and development on systems biology in the European research area, with a particular focus on application-oriented and industry-relevant systems biology. The budget is expected to be approximately

€9 million.

Web id: 1176401

Email: aresysapp@isciii.es

Deadline: 14 January 2015 [30]

Agricultural research

The Swedish Farmers' Foundation for Agricultural Research invites applications for grants from the Olle Hakelius scholarship fund. These support research and studies related to agricultural co-operative industries' development in order to enhance primary production. Grants are worth up to SEK100,000 (€10,800).

Web id: 196251

Email: jessica.ekstrom@lantbruksforskning.se

No deadline [31]

Mathematics fellowships

Institut Mittag-Leffler invites applications for its postdoctoral fellowships. These support projects within symplectic geometry and topology, and the classification of operator algebras – complexity, rigidity and dynamics. Fellowships consist of accommodation and office space, a monthly stipend and travel expenses to and from Stockholm.

Web id: 1169870

Email: director@mittag-leffler.se

Deadline: 12 January 2015 [32]

Mathematics grants

Institut Mittag-Leffler invites proposals for its research programme grants. These support programmes that enable scientists and postdoctoral students to collaborate in specialised areas of mathematics. The duration of the programme is one to 12 months.

Web id: 260411

Email: secretary@mittag-leffler.se

Deadline: 9 February 2015 [34]

Cancer research grants

The Union for International Cancer Control invites applications for the Yamagiwa-Yoshida memorial international study grants. These enable cancer investigators from any country to carry out bilateral research projects abroad that exploit complementary materials or skills. Between 14 and 16 grants with an average value of US\$10,000 (€8,000) each are available.

Web id: 211248

Email: info@uicc.org

Deadline: 15 January 2015 [35]

CERN summer studentships

The European Organisation for Nuclear Research (CERN) invites applications for its summer student programme for non-member states. This enables students to visit CERN, join the day to day work with the experimental teams, attend lectures, workshops and discussions with experts in their field. The scholarships last for eight weeks and cover accommodation and meals. A limited number of travel scholarships will also be available.

Web id: 1182667

Deadline: 28 January 2015 [36]

Infectious diseases

The European Society for Paediatric Infectious Diseases invites applications for its fellowship awards. These support basic or clinical research that utilises advanced techniques and methods to improve the health of children through the prevention

or management of infectious diseases. The annual stipend is worth €50,000 for fellows working in the European region or US\$50,000 (€40,200) for fellows working in the US or Americas. The duration of the fellowship is two years.

Web id: 201147

Email: espid@kenes.ch

Deadline: 31 January 2015 [37]

Animals in research

The 3R Research Foundation Switzerland invites applications for its grants to reduce animal experiments in research. The foundation supports projects aimed at developing new methods or refining accepted methods, or validation, which offer improvements vis-à-vis standard animal experimentation in line with the 3R motto reduce, refine, replace. Grants are worth up to CHF250,000 (€208,000).

Web id: 211761

Email: ernst.hunziker-research3r@bluewin.ch

Deadline: 15 February 2015 [38]

Science and engineering

The European Organisation for Nuclear Research invites applications for its post career break fellowship. This offers full-time or part-time fellowships to science and engineering graduates wishing to restart their careers. One full-time fellowship or two part-time fellowships are available for up to two years, covering stipend, insurance, travel expenses and family allowances.

Web id: 1176979

Deadline: 2 March 2015 [39]

Dermatologic research

The LEO Pharma Research Foundation, together with the European Society for Dermatological Research, invites applications for its awards. These are given to young scientists who show potential to become prominent contributors to the field of dermatological research. Awards are worth up to DKK1 million (€134,400).

Web id: 1173790

Email: thomas@esdr.org

Deadline: 30 March 2015 [40]

Clinical research

The AO Foundation invites applications for the clinical investigation and documentation research fellowships. These provide surgeons with training and experience in all phases of clinical research, including study planning, monitoring, data analysis and publication. Grants also include accommodation and return travel to Switzerland.

Web id: 1173199

Email: alexander.joeris@aofoundation.org

Deadline: 31 May 2015 [41]

Palliative care research

The European Society for Medical Oncology invites applications for its palliative care fellowships. These enable oncologists or oncology fellows to conduct observations or research at one of the ESMO designated centres. The research fellowship is worth €5,000 over up to three months and the observation fellowship is worth €2,500 for a minimum of one month.

Web id: 209398

Email: esmo@esmo.org

Deadline: 1 June 2015 [42]

Turkish fellowships

The Scientific and Technological Research Council of Turkey, under the Newton-Katip Çelebi Fund, invites applications for its fellowship grants. These promote scientific and technological collaboration between Turkey and the countries of prospective fellows. Fellowships include monthly stipends, which for visiting scientists are up to US\$3,000 (€2,400) and for sabbatical leave researchers up to US\$3,500. Travel costs and health insurance are also included.

Web id: 1182562

No deadline [43]

Cot death research

The Scottish Cot Death Trust invites outline proposals for its grants. These aim to increase knowledge and understanding of why some babies die suddenly and unexpectedly with no cause of death to be found. The majority of awards will be in the region of £30,000 (€37,800) to £80,000 over three years. Small grants of up to £5,000 per year will also be considered.

Web id: 167929

Email: contact@scottishcotdeathtrust.org

No deadline [44]

Wellcome senior fellowships

The Wellcome Trust invites applications for the following fellowships:

- senior research fellowships in basic biomedical science. These include a basic salary, normally worth up to £55,000 (€69,300) per year, and a supplement of £12,500 per year. **Web id:** 251190

- senior research fellowships in clinical science. **Web id:** 254862

Email: sciencegrants@wellcome.ac.uk

Deadline: 5 December 2014 [46]

EU astronomy grants

The European Science Foundation invites proposals, under its Gaia research for European training in astronomy programme, for exchange visits. These enable researchers to pursue collaborative work on astronomy, astrometry, galaxy, stellar evolution and solar system physics. Grants provide an allowance of €1,600 per month, €400 per week or €57 per day, plus travel costs worth up to €500, over a period of 15 days to four months.

Web id: 1158727

Email: great@esf.org

Deadline: 19 December 2014 [47]

DFID agriculture/nutrition

The Department for International Development invites concept memos for its postdoctoral fellowships on innovative methods and metrics for agriculture and nutrition actions. These aim to create emerging leaders in agriculture, nutrition and health research by supporting early career researchers in developing and adapting innovative methodological approaches with mentors in ongoing research programmes in low- and middle-income countries. Fellows receive a stipend of £34,000 (€42,900) and a research allowance of £7,500 to cover travel and other fieldwork expenses. An honorarium of £1,750 is paid to each of the mentors. Fellowships last for one year.

Web id: 1182733

Email: immanafellowships@tufts.edu

Deadline: 10 January 2015 [48]

Natural sciences fellowships

The Royal Society and the Engineering and Physical Sciences Research Council invite applications for the Dorothy Hodgkin fellowships. These enable early-career scientists and engineers to take the first step into an independent research career. Research may address any subject in the natural sciences, including agriculture, mathematics, technology, medical, environmental or engineering science. Fellowships include coverage of salary costs, estate costs and indirect costs for a guaranteed maximum period of five years.

Web id: 212549

Email: grants@royalsociety.org

Deadline: 12 January 2015 [49]

Levant research grants

The Palestine Exploration Fund invites applications for its grants for travel and research. These enable scholars to conduct research into the archaeology and history, topography, geology, natural sciences, and manners, customs and culture of biblical Palestine and the Levant. A total of £4,000 (€5,000) is available, of which up to three awards of £500 each are set aside for student travel to the Levant.

Web id: 1170860

Email: execsec@pef.org.uk

Deadline: 31 January 2015 [50]

Clean technology competition

The London School of Business and University College London invite submissions for their CleanTech challenge. This is a business plan competition that helps students to form teams and develop innovative clean technology business ideas to create viable start ups. The winner receives £10,000 (€12,600).

Web id: 1166240

Email: info@cleantechchallenge.com

Deadline: 31 January 2015 [51]

Jacobite history

The Institute of Historical Research invites applications for the Jacobite Studies Trust fellowships. These non-residential fellowships support historical research into the Stuart dynasty in the British Isles and in exile, from the departure of James II in 1688 to the death of Henry Benedict Stuart in 1807. Two six-month fellowships of £7,500 (€9,500) each are available.

Web id: 1160615

Email: ihr.reception@sas.ac.uk

Deadline: 28 February 2015 [53]

Leukaemia research

The Lady Tata Memorial Trust invites applications for its international awards. These support individuals in conducting leukaemia research, restricted to studies of the leukaemogenic agents, the epidemiology, pathogenesis, immunology and genetic basis of leukaemia. Awards are usually worth up to £35,000 (€44,100) per year. In addition, one or more MPhil or PhD studentships may be granted, normally for two years with renewal possible for a third year.

Web id: 202132

Email: sonia@tata.co.uk

Deadline: 15 March 2015 [55]

History fellowships

The Institute of Historical Research invites applications for the following fellowships:

- Past & Present fellowships, worth approximately £20,000 (€25,200) each. **Web id:** 211537

- The Pearsall fellowship in naval and maritime history. **Web id:** 211538

Email: ihr.reception@sas.ac.uk

Deadline: 11 April 2015 [57]

rest of world

Library award

The University of Queensland invites applications for the Fryer Library award. This supports research on Australian studies utilising the collections of the University of Queensland's Fryer Library. The award is worth AU\$10,000 (€7,000).

Web id: 1172240

Email: fryer@library.uq.edu.au

Deadline: 31 January 2015 [58]

Theoretical physics visits

The Perimeter Institute for Theoretical Physics invites applications for the Emmy Noether visiting fellowships. These enable theoretical physicists to pursue their research, collaborate and take part in workshops and conferences at the Perimeter Institute in Waterloo, Ontario. Fellowships include financial and organisational support.

Web id: 1175887

Email: cbouda@pitp.ca

Deadline: 15 January 2015 [59]

Inflammatory bowel disease

The Crohn's and Colitis Foundation of Canada invites applications for its innovations in inflammatory bowel disease research grants. These support innovative projects that refine hypotheses or produce preliminary data that will help seed larger projects and have the potential to improve diagnosis, therapy and prevention of inflammatory bowel disease. Grants are worth up to CA\$50,000 (€35,300).

Web id: 1176131

Email: researchassistant@ccfc.ca

Deadline: 20 January 2015 [60]

Science fellowships

The Feinberg Graduate School invites applications for its postdoctoral fellowships. These support research in the areas of life sciences, chemical sciences, physical sciences, mathematical sciences, computer sciences and science teaching. Fellowships cover a monthly stipend, which was worth ILS8,960 (€1,900) in 2013, insurance, travel and relocation allowance for up to three years.

Web id: 251469

Email: yuval.eshed@weizmann.ac.il

No deadline [61]

Jewish theology

The Herzl Institute in Jerusalem, in partnership with the John Templeton Foundation, invites expressions of interest for its fellowships in Jewish philosophical theology. These support philosophical projects in the area of Jewish theology. Awards are worth up to US\$100,000 (€80,200), available for up to two years.

Web id: 1169831

Email: meiravj@herzlinstitute.org

Deadline: 15 December 2014 [62]

tenders

Database maintenance *ESA

The European Space Agency invites tenders for evolutive maintenance of TEC-SW database reference facility. The tenderer will maintain the system site survey data bank and the VEGA VIDB/FED software up to full coverage by the scales of independent behaviour software of the capability offered by the system software database, along with the development of SSDB change report and the SSDB impact analysis report of the SIB database system. The contract is worth up to €100,000. Ref: 14.132.09. Deadline: 9 December 2014

Telecommunications *ESA

The European Space Agency invites tenders for a future cities feasibility study - advanced research in telecommunications systems integrated applications programme. The aim is to validate the sustainability of the business opportunity for the integrated solution proposed. The contract is worth up to €500,000. Ref: 14.1AA.01. Deadline: 10 December 2014

Large antennas *ESA

The European Space Agency invites tenders for radio frequency and deployment test methods for large antennas. The tenderer will test methods for key parameters such as deployment, surface accuracy, thermo-elastic stability, radio frequency and passive intermodulation. This activity is restricted to non-prime contractors, including small and medium enterprises. The contract is worth at least €500,000. Ref: 14.1TT.41. Deadline: 15 December 2014

Fibre optics *ESA

The European Space Agency invites tenders for space validation of rad-hard coped optical fibre amplifier. The tenderer will perform a space validation of rad-hard rare earth doped fibres in an optical amplifier at 1.55µm addressing different types of space applications. The contract is worth up to €500,000. Ref: 14.1QM.15. Deadline: 18 December 2014

Electric propulsions *ESA

The European Space Agency invites tenders for assessment of auxiliary propulsion arcjets. The tenderer will assess arcjet applications for auxiliary and complementary propulsion applications for electric propulsion platforms. The contract is worth at least €500,000. Ref: 14.1TT.11. Deadline: 21 January 2015

X-ray optics *ESA

The European Space Agency invites tenders for L2 x-ray mirror module assembly, integration and testing. The tenderer will develop a process and related ground support equipment for integrating silicon pore optics mirror modules into a mirror support structure with the required co-alignment accuracy and its verification by suitable metrology. The activity shall include the design trade-off for the support structure including material selection. The contract is worth at least €500,000. Ref: 14.164.15. Deadline: 5 February 2015

*ESA is at: <http://emits.esa.int/w>

usa

Broad Foundations inflammatory bowel disease research grants

Web id: 199735

No deadline [70]

Institute for Aegean Prehistory publication team support

Web id: 1169667

No deadline [71]

Michael J Fox Foundation research grants for levodopa-induced dyskinesia

Web id: 1164723

No deadline [72]

National Multiple Sclerosis Society outside meeting support programme

Web id: 1169086

No deadline [75]

Parkinson's Disease Foundation's conference awards

Web id: 1164225

No deadline [76]

Smithsonian Astrophysical Observatory predoctoral fellowships

Web id: 178711

No deadline [77]

Thanks to Scandinavia medical fellowships in the US

Web id: 1172198

No deadline [79]

Wenner-Gren Foundation for Anthropological Research historical archives programme grants

Web id: 202462

No deadline [80]

Juvenile Diabetes Research Foundation International short-term fellowships for discovery consortia

Web id: 1182742

Deadline: 12 December 2014 [81]

Bill and Melinda Gates Foundation new interventions for global health

Web id: 1182649

Deadline: 13 January 2015 [82]

Smithsonian Institution Baird Society resident scholars

Web id: 197046

Deadline: 15 January 2015 [83]

Smithsonian Institution Dibner Library resident scholars

Web id: 197052

Deadline: 15 January 2015 [84]

International Society for Antiviral Research Gertrude Elion memorial lecture award

Web id: 198328

Deadline: 30 January 2015 [85]

International Society for Antiviral Research William Prusoff young investigator lecture award

Web id: 198364

Deadline: 30 January 2015 [86]

Boston College African dissertation fellowship

Web id: 260993

Deadline: 31 January 2015 [87]

Progressive MS Alliance Collaborative network awards

Web id: 1182591

Deadline: 31 January 2015 [88]

Children's Literature Association diversity research grant

Web id: 1176598

Deadline: 1 February 2015 [89]

Children's Literature Association faculty research grants

Web id: 1170192

Deadline: 1 February 2015 [90]

policy diary

November

26 NanoTechItaly 2014, Venice, Italy. To 28.

<http://rsrch.co/1vDtwx4>

27 JRC Conference: Future-oriented Technology Analysis, Brussels, Belgium. To 28.

<http://rsrch.co/1p5GVXB>

December

3 European Academies' Science Advisory Council Event on Antimicrobial Drug Discovery, Brussels, Belgium.

<http://rsrch.co/1w364rR>

8 JRC Conference on Entrepreneurship, Innovation and Enterprise Dynamics, Paris, France. To 9.

<http://rsrch.co/11e45FK>

9 Brokerage Day for Horizon 2020 ICT Call on Robotics, Brussels, Belgium.

<http://rsrch.co/1u21Vo2>

10 SET Plan conference 2014, Rome, Italy. To 11.

<http://rsrch.co/1pBhroF>

12 Horizon 2020 Infoday: Energy Efficiency, Brussels, Belgium.

<http://rsrch.co/1txsPPT>

17 Horizon 2020 Infoday: ICT Calls, Brussels, Belgium.

<http://rsrch.co/10Rc4It>

January

9 Horizon 2020 Infoday: Fast Track to Innovation Pilot, Brussels, Belgium.

<http://rsrch.co/1u2QpKy>

27 High-level Conference on European Space Policy, Brussels, Belgium. To 28.

<http://rsrch.co/1s9jn7r>

February

2 Horizon 2020 Infoday: Societal Challenge 4, Transport, Brussels, Belgium.

<http://rsrch.co/1mhlno9>

26 JRC Workshop on New Narratives for Innovation, Brussels, Belgium. To 27.

<http://rsrch.co/1s9p8Ce>

March

2 EU Science: Global Challenges, Global Collaboration, Brussels, Belgium. To 6.

<http://rsrch.co/VNAkYF>

10 2015 ITEA-ARTEMIS Co-summit, Berlin, Germany. To 11.

<http://rsrch.co/1ytA2ry>

25 Net Futures 2015, Brussels, Belgium. To 26.

<http://rsrch.co/1ElrIIX>

April

16 European University Association Annual Conference 2015, Antwerp, Belgium. To 17.

<http://rsrch.co/10f5s5e>

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The legacy of MGQ

As Máire Geoghegan-Quinn finishes her term as EU research commissioner, **Laura Greenhalgh** asks how she'll be remembered for her 5 years in the Berlaymont.

On 13 January 2010, Máire Geoghegan-Quinn gave her first performance for EU research at her confirmation hearing at the European Parliament. Wearing a purple suit, she portrayed herself as a forceful and confident woman and was warmly received by MEPs as she promised to bring research and innovation "to the heart of European policy".

Five years later, opinions on her success are mixed. A retired Irish politician, Geoghegan-Quinn entered the European Commission after a decade with the European Court of Auditors—and some say this lack of scientific experience showed. "As a trained teacher and a politician, she had no real confidence when it came to understanding the heartbeat of the globe," says one Brussels lobbyist. "Nobody in science knows who she is."

Others are more positive. "Obviously she came from a completely different world, but she picked up very quickly on a number of issues," says Kurt Deketelaere, secretary-general of the League of European Research Universities. "She had a broad set of pet topics, including gender, the blue economy, and reducing red tape—of which she had significant experience from the court of auditors."

In her 5 years in office, Geoghegan-Quinn failed to convince many of her inspirational leadership—but this may be due to the limits of a post constrained by the decisions of previous commissioners and the rules of the institution, as well as a research world resistant to change. "The research commissioner doesn't start with a clean slate," says Chris Hull, a former secretary-general of the European Association of Research and Technology Organisations. "And there's a whole clientele that doesn't want the apple cart upset: if she came in and changed everything, it would cause a huge stink."

Instead, Geoghegan-Quinn stuck to the instructions from Commission president José Manuel Barroso at the start of her term: to prepare Horizon 2020, simplify EU research and make progress on the European Research Area. "I think she's done a pretty good job," says Hull.

Jerzy Langer of the Polish Academy of Sciences says the "main accomplishment of her term is Horizon 2020, for sure". Geoghegan-Quinn helped to push through an agreement with provisions for small businesses, gender equality and a fast-track innovation instrument—and also introduced simpler rules for applicants. "Horizon 2020 would be nothing if not for her tremendous work for simplification."

But she didn't do this alone—and many people acknowledge that her most successful decision was made early in her term, when she booted out the director-gen-

eral and appointed the diplomatic Dutchman Robert-Jan Smits in his place. "Without Smits, nothing would have happened. It was the team that counted," says Langer.

Geoghegan-Quinn didn't get everything right: and the work considered to be her least successful has been on the ERA. Despite grand plans to "complete" the ERA by the end of her term, it remains as incoherent and amorphous a concept in 2014 as it did in 2009. "The Commission is still stuck on how to make member states coordinate national spending," says Hull.

Allowing lobby groups to have a bigger influence on policies by creating the ERA Stakeholder Platform was a good move, some observers say, and Geoghegan-Quinn also succeeded in getting ERA topics on to the agenda of the European Semester, the EU's annual cycle of economic policy guidance and surveillance. But according to Deketelaere, her mistake was failing to pressure member states with legislation on ERA topics earlier in her term. By the time she did, in mid-2012, it was just an empty threat.

This, coupled with an onset of political lethargy, might explain an apparent loss of momentum later in her term. "She ticked a few boxes and that was it," says a Brussels lobbyist. "She had a golden opportunity to move science up through the portfolios, but it remains a lowly priority at the Commission. She hasn't really inspired."

But she gained respect for being hard-nosed on issues such as financial simplification and the use of full costing in Horizon 2020. Having decided that the Framework programme would only include a flat funding rate for research, Geoghegan-Quinn refused to cave in to pressure from universities, research organisations and the Parliament. "We hung on for an option on real costs until the end," says Hull. "But she stuck to her guns, and it worked."

So, how will the commissioner be remembered? For some, she was defined by her Irish sense of humour, charm and interesting private conversation. For others: "Like a Sunday afternoon football game that finished 0-0. She didn't cause any trouble, but she didn't really engage." But, above all, she will be remembered as tough in negotiations. "She took a line and she stuck to it, and you had to respect that," says Hull.

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'Horizon 2020 would be nothing if not for her tremendous work for simplification.'

uk & ireland

Adviser's power grows as officials depart

The UK government's chief scientific adviser has been taking on a more influential role in government ahead of the departure of the most senior civil servant for science, Whitehall insiders have said.

Reports have emerged that Mark Walport is becoming more politically powerful than his predecessors—such as John Beddington and David King—by increasing his involvement in tasks that are usually overseen by officials in BIS, the Department for Business, Innovation and Skills, including science funding. This is despite Walport having previously said that it was not his job to “lobby the government” on science funding. The shift has come at the same time as a number of officials have been leaving BIS.

“I imagine it reflects the wishes of the minister to seek input from beyond the department, as much as the [desire of the] government CSA to offer support,” says Sarah Main, the director of the Campaign for Science and Engineering. Asked about Walport's role, business secretary Vince Cable said he was a “very influential voice”. Greg Clark, minister for science, universities and cities, said that Walport had played a “very important role” in the development of the government's forthcoming Science and Innovation Strategy.

On 3 November, an internal BIS email revealed that John O'Reilly, BIS's director-general for knowledge and

by Adam Smith

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innovation, had “decided to leave” his post in January. His departure will follow other staff changes at BIS. Jeremy Clayton's job as director of the research base has been split between two other officials as he has taken on the role of director of knowledge and innovation strategy and international. And Maddalaine Ansell, deputy director for international knowledge and innovation, and Matthew Hilton, director of higher education, are both leaving soon. Whitehall sources are concerned about a lack of continuity in science policy—Walport's position notwithstanding—in the run-up to the general election and the spending review in 2015.

James Wilsdon, a researcher at the Science Policy Research Unit at the University of Sussex, says it is understandable and inevitable that the government CSA will always be pressured by scientists to be an internal voice on science funding. But Wilsdon says it is important for a government CSA to distinguish between his or her work on funding and advice on the use of science in policy-making. “If you slide between the two, there's a risk to the integrity of the role. I don't object to the government CSA playing that role, but they need to be clear and transparent about whether they're operating in favour of science funding or giving scientific advice.”

uk&i in brief

Shale gas network planned

The UK government is to set up a network of colleges and centres to carry out R&D and train specialists in shale gas. The Department for Business, Innovation and Skills has pledged £750,000 in funding, which it says will be matched by industry bodies and education providers.

Hauser calls on Catapults to pull in more academics

The UK should increase the number of Catapult centres over the next 15 years and ensure that they improve their links with universities, according to technology entrepreneur Hermann Hauser. In a review of the innovation networks, written 4 years after their launch, Hauser suggests that about 30 centres should be operational by 2030—up from the seven in place today. He says the centres, which are modelled on Germany's Fraunhofer institutes, should work more closely with universities through the secondment of researchers.

Scotland consults on university governance

The Scottish government has launched a consultation on proposed statutory changes to make the governance of Scottish universities more accountable. The proposed changes include ending the role of the Privy Council in

the governance of Scottish universities, ensuring that governing bodies are representative, making the selection of university court leaders more transparent, and producing a wider definition of academic freedom.

Metrics-based REF could lead to dirty tricks

Using metrics as the base for research assessment could lead to game playing by academics to increase their citation counts, researchers have warned. Academics expressed their concerns about the formation of ‘citation rings’—in which groups of researchers agree to cite each other in order to increase their citation counts—in their responses to a review of research metrics commissioned by the Higher Education Funding Council for England.

Ireland confirms ambitious Horizon 2020 target

The Irish government has launched an initiative to identify large-scale projects suitable for Horizon 2020 funding. Research minister Damien English announced the formation of a Horizon 2020 Strategic Research Proposals Group to help Irish-based researchers achieve their target of €1.25 billion over the programme's 7 years. This is more than double the €600-million target that Ireland set for Framework 7 funding, which has now been achieved.

Spanish research council targets young stars

The Spanish government is to pilot tenure-track recruitment at the national research council, the CSIC, in an effort to attract successful young researchers.

The move, announced by CSIC president Emilio Lora-Tamayo, will involve the council hiring 25 researchers in 2015 and a further 25 the following year. These employees will be subject to evaluation to determine whether their contracts are renewed and what their salaries should be, according to a spokesman for the ministry of economy and competitiveness.

The council will select the recruits from the winners of the Ramón y Cajal fellowship, which is awarded to the brightest national researchers on the basis of scientific excellence. Previously, council employees were recruited as civil servants with positions secured for life—but researchers have said that this has led to an ageing workforce and a lack of productivity.

The shake-up in recruitment practices comes as the council emerges from a period of serious budgetary constraint, having suffered a cut of 32 per cent in its budget since 2009. During this time, the council has been unable to hire staff or replace all the employees who have retired. A labour union estimated that the CSIC lost 810 researchers last year.

However, Carlos Andradas, the president of the Confederation of Spanish Scientific Societies, says that

by Cristina Gallardo

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the planned number of tenure-track positions is not sufficient to prevent further ageing of the workforce or counteract the loss of employees. "This is a ridiculous number," says Andradas. "At this pace, we would need 100 years to recover the levels of research personnel that we had before the crisis."

The government says that existing employees will also be offered the opportunity to move on to the tenure track, as long as they are willing to abandon their civil service status. It is hoped that the offer of tenure track will appeal to leading young researchers, who may be willing to sacrifice a secure contract in favour of greater recognition of their success.

But Andradas says that for the reforms to be effective, the government will have to guarantee certain conditions for the tenure track, which should include an initial contract of at least 5 years and an independent evaluation carried out by international review panels. This will be important to guarantee fair recruitment decisions and prevent favouritism from becoming a problem, he says.

The government is expected to provide clarification of the rules for the CSIC's tenure track under a specific bylaw in the coming weeks.

nations in brief

States fail to reinvest extra funds in universities

Germany's association of rectors, the HRK, has warned that

extra funding at state level, derived from changes to the national student support system, is not being fed back into higher education. Earlier this year, the federal government took on full responsibility for paying student support, in order to provide relief to the cash-strapped state governments. But according to the HRK, states are spending the funds on areas other than higher education.

French researchers make little headway

Laboratory directors have come away disappointed after meeting government adviser Vincent Berger to ask for better conditions for researchers in France. Among the requests made at the meeting on 4 November were a review of laboratory funding and a restructuring of R&D tax credits, as well as an increase in the number of jobs. But Berger indicated that the government would be unlikely to change its policies in response to the demands.

Canada and France increase space cooperation

France's space agency, the CNES, has signed a cooperative agreement with the Canadian Space Agency. The partners will increase their joint work on remote sens-

ing of the ocean and Arctic climate, healthcare R&D, and space-based search and rescue systems.

Council calls for more support for medical institutes

Germany should increase the budgets of the BfS institute for radiation protection and the BfArM institute for drugs and medical devices, according to the Wissenschaftsrat, a science advisory council. The institutes' excellence is internationally recognised and their outputs yield important information for policymakers, the council said.

EU funds Spain's small businesses

The European Investment Fund is to finance loans worth €200 million to small and medium-sized companies in Spain. The deal, signed with the Spanish bank Bankinter, was made through the InnovFin SME Guarantee Facility, which is funded by Horizon 2020.

Germany begins national health study

The German government has launched the largest long-term health project in the country's history, involving 200,000 people and 18 research centres. The study will track participants for 20 years to find out more about genetic, environmental and social influences on health. The aim is to gain a better understanding of common diseases such as diabetes, dementia and cancer.

nordic

Sweden must improve links between research policy and evidence, says academy report

Sweden's politicians should commission a higher number of relevant scientific studies and incorporate more evidence into research policy, a study has concluded.

There is no reliable structure in place in Sweden to ensure that evidence is used consistently in policy-making, the study found. And the answers to a questionnaire sent out to a variety of people in academia and politics showed that they considered their peers' understanding of the aims of research policy to be "nonexistent", according to the findings.

The Royal Swedish Academy of Engineering Sciences commissioned the study, which was carried out by the Nordic research consultancy Damvad.

"If you look at the number of central decisions taken in Swedish research policy, there is almost a blindness to using research," says Bo Rothstein, a political scientist at the University of Gothenburg and a former research adviser for the Swedish government. "It's difficult when we argue to the rest of the world that they should base decisions on research in environmental policy or social policy, when we don't do that."

A large part of the problem stems from an unclear relationship between commissioners of research and

by Jenny Maukola

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the people who perform it, the study found. The questionnaire revealed that many organisations did both, and that the difference between the two was less clear in Sweden than in Denmark or Norway. Introducing a clearer distinction could improve independent analysis and evidence for politicians, the final report said.

Sweden spends 3.6 per cent of GDP on research: much more than the EU average of 2 per cent. However, the report criticised the fact that a lot of this money was being distributed without any impact analysis.

"They spend a lot of money on recruiting leading scholars from abroad, but the research base for this is zero," says Rothstein. "Honestly, if you're a leading scholar, why would you go to Sweden and not Paris or London? There's a risk that you'll recruit falling stars."

The report recommended that the government take a greater interest in research-based evidence. Rothstein suggests that it could establish an expert council for research, as councils for international aid and economics are already in place. "It works in other areas so it could also work in this field," he says.

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Finding a signal

Finland's national self-confidence has been hit hard by Nokia's decline, but Juha Ylä-Jääski has some firm ideas about how it can recover. **Jenny Maukola** reports.

The Millennium Technology Prize, a €1-million award given out by the foundation Technology Academy Finland, is a source of pride for Finns. It recognises international researchers who have contributed significantly to technological advances worldwide.

Juha Ylä-Jääski, the foundation's president, is keen to highlight the prize's track record. Winners have included Tim Berners-Lee, inventor of the World Wide Web, and two Nobel laureates: Shuji Nakamura, the inventor of the blue LED, and Shinya Yamanaka, a stem cell researcher.

However, the foundation is now turning its attention to problems at home: Finland's innovation competency withered along with the telecommunications company Nokia. "We are not happy about the innovation capabilities of Finland," says Ylä-Jääski.

Ylä-Jääski was once head of strategy planning at the Nokia Research Center. He says that, contrary to popular belief, few Finnish companies have excelled in consumer market innovation. "Maybe the only big exception is Nokia, and now that story is partly already over," he says.

Nokia grew from a toilet paper manufacturer to a global leader in mobile phones, and remained a top innovator in communication technologies for a decade. However, it fell away after missing out on some important developments—including touch screens—and was partly bought up by Microsoft in 2013.

Ylä-Jääski is optimistic that Nokia will see better days again: "There is already a new Nokia," he says. "The mobile network business is still with Nokia, and the company is actually doing well." He adds that it also makes maps for satellite navigators for cars, an income stream that is "healthy and doing quite well".

As Finland's foremost technology and innovation promoter, Technology Academy Finland aims to turn Finland's innovation performance around. When the foundation was established in 2002, its only job was to manage the Millennium Technology Prize. However, its activities quickly grew to include lobbying the government on research and innovation policy, encouraging young people to take up maths, science and technology subjects at school, and promoting the image of Finnish companies abroad.

It is funded partly by the Finnish government, which donates money for the technology prize every other year. The rest of the money comes from industry.

One approach the foundation takes is to get people interested in research and innovation at an early age.

It is involved with several projects aimed at capturing the imaginations of schoolchildren, including an annual competition in which primary school students have to design a moving toy. "We teach them the innovation process and give them a lot of freedom," says Ylä-Jääski. "You should introduce youngsters to a creative and innovative way of working very early."

Ylä-Jääski speaks frankly when explaining what he thinks is wrong with the political approach to innovation in Europe. "Finland and other European countries tend to speak about research and innovation as if they are more or less the same. In many respects they are similar, but in one respect they are totally different," he says.

He explains that research involves putting money in and getting knowledge out, whereas innovation is about putting knowledge in and getting money out. "Innovation must lead to money, and often this is not understood [by politicians]," he says. "If you try to cope with the two processes through the same instruments and also with the same people, it often doesn't work."

Since the economic recession began in 2008, the foundation has been trying to persuade the government to increase its research spending rather than make cuts. "This is maybe our main agenda: to convince the decision-makers that this is not where we should reduce it," Ylä-Jääski says.

He explains that during the early 1990s, when Finland was in the middle of its previous economic recession, the government increased funding for research and innovation. "This and Nokia's success were the two things that pulled Finland out of its problems," he says.

Lobbying the government is easier in Finland than in some other countries, because of the accessibility of local policymakers, Ylä-Jääski adds. "Finland is not a country; it's a club," he says, explaining that "people know everybody so it's not complicated to talk to a cabinet member or a member of parliament. I can easily organise a meeting even with the highest decision-makers."

But finding ways to make them listen to the foundation's recommendations, he admits, is a more difficult proposition.

Something to add? Email comment@ResearchResearch.com

Juha Ylä-Jääski

- ★ **2013-present** President and chief executive, Technology Academy Finland
- ★ **2004-2013** Director, Federation of Finnish Technology Industries
- ★ **1999-2004** Head of strategy planning, Nokia Research Center
- ★ **1984-1999** Research professor, VTT technical research centre
- ★ **1979-1983** Phd in solid-state physics, ETH Zurich, Switzerland

usa

Biology and physics findings win millions

Six biologists and 54 physicists have been awarded Breakthrough prizes worth a total of \$27 million (€21.5m) for work on topics ranging from the expansion of the universe to Parkinson's disease.

Leading the physics awards were Saul Perlmutter of the University of California, Berkeley, Brian Schmidt of the Australian National University and Adam Riess of Johns Hopkins University for their discovery that the acceleration of the universe was increasing. They won \$3m each and shared the prizes with 51 collaborators. The three earlier won the 2011 Nobel prize for the same research, and split the \$1.1m award.

In the life sciences, six researchers each won \$3m for work on four different projects. Alim-Louis Benabid of the Joseph Fourier University in France developed brain implants to treat Parkinson's disease. Charles David Allis of the Rockefeller University in New York identified how modifications to proteins activate genes. Victor Ambros, of the University of Massachusetts, and Gary Ruvkun, of Massachusetts General Hospital and Harvard University, each received a prize for their discovery of microRNAs. Jennifer Doudna of the University of California, Berkeley, and Emmanuelle Charpentier of the Helmholtz Centre for Infection Research in Germany copied a method used by bacteria to edit the genome.

by Sam Lemonick

news@ResearchResearch.com

Actors including Cameron Diaz and Benedict Cumberbatch presented the 2015 Breakthrough prizes in life sciences and physics at a ceremony hosted by comedian Seth MacFarlane in Silicon Valley on 9 November. The inaugural mathematics awards were announced earlier, in June.

The 3-year-old prizes are funded by technology stars such as Facebook's Mark Zuckerberg, Alibaba's Jack Ma and Google's Sergey Brin. Zuckerberg told Bloomberg Businessweek: "I feel like the thing we can do is celebrate people doing great work and create more cultural momentum and awareness that this is an important thing in the world. So when the next economic crisis hits and people are talking about where to cut from the budget, science isn't the thing."

After the inaugural Breakthrough prizes in 2013, many scientists—including Breakthrough recipients—questioned the value of such large prizes. One common refrain is that winners are already likely to be well known and well funded. Others pointed out that many recipients have already or will soon receive a Nobel prize. In short, they wondered whether tens of millions couldn't be better spent on funding research.

usa in brief

Energy department funds research into coal gasification

The Department of Energy has awarded \$16 million (€13m) to four companies studying ways to make gas, for fuel or chemical manufacturing, from coal and other fossil fuels. The funding, which comes from the DoE Office of Fossil Energy's National Energy Technology Laboratory, is aimed at reducing the costs of gasification technologies. Two of the projects focus on turning coal into synthesis gas, a mixture that can be used to generate electricity or to power vehicles.

First winner of award for women in biotech named

The Biotechnology Industry Organization is to give its inaugural Rosalind Franklin award to Debbie Yaver, a microbiologist at one of the world's largest industrial-enzymes companies. Yaver is the director of expression technology, genomics and bioinformatics at Novozymes, a Californian biotechnology company. In its announcement, the BIO cited Yaver's work on genetic engineering of fungus to produce biofuels.

Biologist defends work with lions

A researcher lampooned by Republican Senator Tom Coburn for putting mountain lions on treadmills has said that Coburn's "misinformed" critique will damage

wildlife conservation. Coburn accused Terrie Williams, a biologist at the University of California, Santa Cruz, of wasting her \$850,000 (€681,000) National Science Foundation grant. But Williams says the treadmill testing was a necessary step in calibrating wildlife monitoring collars.

Darpa streamlines biotech funding

Biotech researchers can apply for as much as \$700,000 (€561,000) in seed funding with just a two-page proposal under a Defense Advanced Research Projects Agency programme designed to bring in new blood. Rather than having to submit 40 to 60 pages focused on a specific problem, Darpa says, applicants can now seek funding on any biotechnology problem with a brief description of the project, plan, goals and expected costs.

NIH lab director punished for falsifying data

The National Institutes of Health is to put Bijan Ahvazi under close supervision for 2 years for manipulating and misrepresenting data in three papers in 2004 and 2006. The former director of the X-ray crystallography laboratory at the National Institute of Arthritis and Musculoskeletal and Skin Diseases will need to prove that his work is being overseen to receive any public funding. He will also not be allowed to sit on NIH peer-review boards during the 2 years.

African partners propose SKA research fund

Nine African countries who are partners in the Square Kilometre Array project have proposed the creation of a fund to support research into radio astronomy and the training of scientists in Africa.

Senior officials from science ministries in Botswana, Ghana, Kenya, Madagascar, Mauritius, Mozambique, Namibia, South Africa and Zambia proposed the fund at a steering committee meeting in Kenya this month.

The countries will contribute a joint total of \$6 million (€4.8m) to the fund every year if it is approved at the SKA ministerial meeting in March 2015, says Moses Rugutt, the director of Kenya's National Commission for Science, Technology and Innovation. The ministerial meeting is a forum of African science ministers involved in the project.

"Astronomy is a relatively new field for many countries in this project. A lot of money will be needed to convert existing telecommunications infrastructure to be able to operate and gather data for radio astronomy and later build capacity," Rugutt says.

The money would also be used to help scientists gather data and conduct experiments, says Phil Mjwara, the director-general of South Africa's Department of Science

by Maina Waruru

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and Technology. "Once radio equipment is in place, there will be a lot of data to be interpreted and we will need a pool of young people capable of performing this task," he says.

Botswana's Ministry of Infrastructure, Science and Technology plan to draft a proposal to detail how the fund would operate. The document will be discussed by senior officials before being submitted to the SKA ministerial meeting for approval, says Val Munsami, the chief director of astronomy and African space science at South Africa's Department of Science and Technology.

"We hope that donors, development partners and African institutions such as the African Development Bank will donate money to this fund," says Munsami.

The SKA is under construction in South Africa and Australia. The costs of the project's first phase are estimated at €650 million, provided by the two host nations and the SKA's international partners and funders. The project's headquarters are at the Jodrell Bank Observatory in the UK.

world in brief

Science portfolio split in early Modi reshuffle

India's science minister Jitendra Singh has been moved on to

a role developing the country's north-eastern region in a reshuffle just 6 months after the election of the Bharatiya Janata party government. On 9 November, prime minister Narendra Modi changed several ministers and expanded his cabinet by 21 posts. Singh was replaced on the science and technology brief by Harsh Vardhan, a former health minister under Modi and a member of the reigning BJP.

Iran's parliament still to approve science minister

President Hassan Rouhani of Iran has proposed Fakhroddin Ahmadi Danesh-Ashtiani as the country's next science minister, following the Iranian parliament's decision to refuse his previous choice in August. Danesh-Ashtiani, a civil engineer specialising in seismology, has previously held the position of education minister.

Government sets goals for science minister

New Zealand's science minister has been told to focus on encouraging more R&D investment by industry and furthering plans for regional science institutions. A government briefing, published on 12 November, said that Steven Joyce should lead efforts to raise R&D investment by industry to 1 per cent of GDP by 2018. He was also advised to help establish four further Centres of Research Excellence to be funded from 2016 to 2020.

Asia's rise continues as OECD influence declines

China is poised to become the world's biggest R&D spender by 2020, according to the latest figures from the OECD. The OECD predicts that China will overtake the United States in 2019 in terms of absolute spending on R&D. The Asian nation is already on a par with the EU's 28 member states combined, with its gross domestic expenditure on R&D reaching \$397 billion in 2012, the OECD says. The rapid rise in China's spending has contributed to a decline in OECD countries' proportion of global R&D spending, as China is not a member country.

UN agency launches online archive

Unesco, the UN's education branch, has created a World Library of Science to share scientific papers with researchers and students globally. The library, launched in conjunction with the publisher Nature Education and the diagnostics company Roche, will contain articles, books and videos. As well as making scientific information freely available, it will provide educational resources for students and teachers.

South Korea shows nuclear ambitions in Europe

An atomic consortium from South Korea is to upgrade a nuclear reactor and build a cold-neutron research facility at Delft University of Technology in the Netherlands, in a deal worth \$23.6 million (€19m). The two countries signed an agreement to update the capacity of the nuclear reactor from 2 megawatts to 3 megawatts. The Korea Atomic Energy Research Institute will lead the work.

WORKING THROUGH THE RANKS University rankings are often criticised as a gross simplification of university performance, and this might exemplify why. One university, we are reliably informed, told the HRK, Germany's rectors' association, that it improved its position by 20 places in one well-known league table just by reporting the value of its buildings based on their true market value instead of what was written on its balance sheet.

PARTING SHOT The webpage of the chief scientific adviser at the European Commission was immediately branded with a large 'archive' stamp on 1 November, the day after Anne Glover's role officially ended, despite other departing officials' pages remaining active. Glover's contract doesn't end until February so, if she's so inclined, she might be twiddling her thumbs in Brussels for a while. Perhaps she could spend her time making an educational video along the lines of the Commission's infamous "Science: It's a girl thing" campaign. Our suggested title is "Science Advice: It's a vital thing".

ABRACADABRA After meeting foreign affairs ministers on 7 November, the UK chancellor George Osborne rashly claimed he had halved the country's €2.1-billion extra-costs bill from the EU. Luckily the Twittersphere wasn't fooled by this assessment. Some likened Osborne's trick to that of a child opening their Christmas presents

early. Others gave him a magician's persona: The Great Osbornio. However, as one contributor pointed out, Osborne did at least achieve something remarkable: he put Nigel Farage, the leader of the UK Independence party, in the right.

NAPPING ON A COMET The Philae lander, part of the European Space Agency's Rosetta mission, has become the first spacecraft to go to sleep on a comet, after landing in the shadows and running out of battery sooner than expected. Scientists have tried to fix the problem, caused by an unfortunate landing position that prevents the lander's solar panels from receiving enough light, by rotating it. After a 10-year journey to catch the comet, Philae only saw 57 hours of action. Rosetta will continue to track the comet's progress, however.

BETTER OFF IN As the prospect of an EU in-out referendum looms in the UK, it's a good time to revisit the benefits of EU membership—and this month the *Daily Mirror* newspaper did just that. As well as conferring the right to work and live in other member states, the paper points out, membership prevents citizens having to pay for costly visas, such as £125 to visit Russia. It also gives access to state healthcare and cheaper roaming phone charges—and, of course, those EU-only queues at passport control. Not too bad for only £34 each a year, the paper says.



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