



Smiling faces (from left to right): Ernst-Ludwig Winnacker, ERC Secretary General, Fotis Kafatos, President of the Scientific Committee of the ERC, Matthias Kleiner, President of the Deutsche Forschungsgemeinschaft, Annette Schavan, German Federal Minister for Education and Research, Janez Potocnik, European Commissioner for Science and Research

European Research Council (ERC)

## Cheery Start

A conference on European science without any complaints at all about research policy or priorities? Pretty unusual, to say the least. However, this is precisely what happened when the European Research Council (ERC) was officially launched in Berlin on 27 February.

Instead, the speakers talked of “an idea whose time has come”, “a European factory of ideas” and “a champions’ league”. For example, Janez Potocnik, European Commissioner for Science and Research, proclaimed the ERC to be the starting shot for a new era in European research policy, “Today has really set the ball rolling.”

So the politicians are happy but what about the scientists? Although calls for an ERC initially came from the scientific community itself, many were at first quite sceptical about the idea. They thought that it

could become yet another of Europe’s bureaucratic nightmares. However, when it became clear that the ERC would distribute research money based solely on scientific excellence, enthusiasm for the new funding body of the European Union for basic research grew rapidly.

The ERC is part of the 7th EU Research Framework Programme, functions completely independently and will allocate 7.5 billion to basic research by 2013. The 22 members of the ERC’s scientific council are currently working on the individual funding schemes. The first one, called “ERC Starting Grants”, is particularly designed to help young investigators develop independent careers in Europe and has been open for proposals since December.

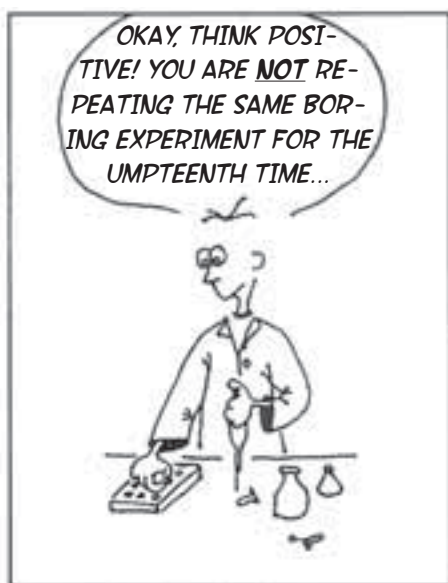
A second programme for experienced research leaders (“ERC Advanced Grants”) will follow later in 2007. According to ERC’s

Secretary General, Ernst-Ludwig Winnacker, it will focus on “high risk” projects and thus constitute another special attraction of the ERC. National research councils, with their lower budgets, are unable to take such risks.

So, there is currently much optimism surrounding the outset of the ERC. So much optimism that at the end of his speech Janez Potocnik outlined the following scenario for 2013, “The ERC is well established and respected in Europe and around the world. Discussions on the next financial perspectives have ended, and the Heads of State and Government have agreed to more than double the ERC’s budget. The decision was consensual and logical. The ERC is well accepted by scientists and its administration is efficient. The corridors in the Madou ▶▶

BY RAFAEL FLORÉS

## PAUL THE POSTDOC



Tower [where the ERC's secretariat is based in Brussels] are vibrant and buzzing, and people are smiling."

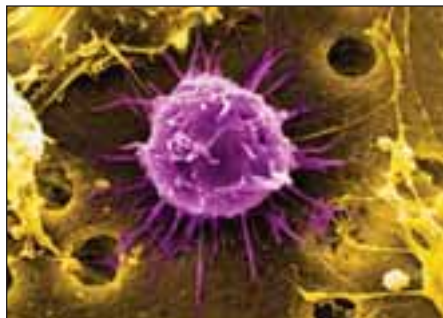
Not more than a vision to aim for at the moment? Well, at least at the launch conference this vision had most people already grinning broadly.

#### Adult stem cells

## Hopeful Paper in Question

The use of human embryonic stem cells (hES) for research is a matter of passionate ethical debate. It is unsurprising, then, that many had hoped to avoid this minefield by showing that adult stem cells would, under certain conditions, be as multipotent as hES cells and thus be able to differentiate into a whole variety of cell types.

A bright ray of hope was a 2002 *Nature* paper by a team from the University of Minnesota led by Catherine Verfaillie, who moved to the Catholic University of Leuven last year. In the paper the authors reported that cells derived from mouse bone marrow, which they called multipotent adult progenitor cells (MAPCs), seemed able to differentiate into "most, if not all, somatic cell types." This paper has since been cited more than 1,200 times, although its widely debated results proved difficult to replicate.



Last month it was leaked that the University of Minnesota has conducted an inquiry into the study following more specific accusations. The investigation concluded that the paper contained "significantly flawed" data, and that the paper's conclusions are "potentially incorrect". Details referred to erroneously-duplicated data in the *Nature* paper and a second paper in the *Journal of Experimental Hematology*; to technical flaws in flow cytometry experiments that call into question the real identity of the cells as MAPCs; and conclude that claims of cell versatility might be exaggerated and unreliable.

The panel, however, clearly stated that no doubts about Verfaillie's scientific integrity were raised and that she had been very helpful during the investigations. The university plans to take no further action.

Verfaillie is sticking up for her results, though, arguing that the data in question don't affect the paper's conclusions. Her argument is that whatever the identity of the cells really was, functionally they behaved like multipotent adult stem cells.

Some colleagues agree, others do not. In the light of the inquiry, evidence to support the *Nature* paper's conclusions has become rather poor, they say. A matter now left to the scientific community's better judgement.

#### Scientific publishing

## Back and Forth

What do politicians usually do when under pressure from opposite directions? Easy! Avoid awkward decisions and ask for more research and debate.

That is exactly what happened at a conference held by the European Commission (EC) on ways to improve the dissemination of scientific information in Europe.

One side of the battlefield produced a petition, signed by almost 14,000 EU researchers and 500 research organizations. The petition was presented at the start of the meeting and asked the EC to take action on open access publishing, to make scientific papers available to everyone for free, instead of only from publishers at a price.

Apart from publishing in free access journals, another way to achieve this goal would be to ask researchers to make a copy of each paper freely available online, perhaps on their institute's website. In fact, "self archiving" within six months of publication had already been made a mandatory precondition for funding by five research councils in the UK as well as other science agencies across Europe and the USA.

No wonder proponents of open access were optimistic that the European Union would join in and require the same from the scientists it funds through its €50 billion Seventh Framework Programme. Particularly because these hopes were fuelled last November by an EC expert report concluding that the scientific publishing market is inefficient, restricts the flow of scientific communication, and thereby slows down the advance of international research.

To the frustration of the open access camp, these hopes were quickly dashed.

Shortly before the meeting their opponents took the stage. The leading scientific publishers presented a joint statement telling the European Commission to stay out of their business. The group issued a 10-point "Brussels Declaration" asserting the industry's value to science and society, culminating in the warning that "nobody will benefit if a major European industry is undermined and with it the peer review system upon which science and society depend."



The publishers also questioned whether the concept of free online journals would ever work economically. They are free to read, but the scientist or university pays a submission fee. The private publishers argue that such business models are unsustainable, as they won't generate enough revenue to pay for the expensive but important process of peer review that the scientific community expects of reputable journals. Such a business model is too immature to be predictable, they said.

It seems that the EC was impressed. In a policy statement, it acknowledged that data from publicly funded research "should in principle be accessible to all" but it didn't endorse a mandate to self-archive. Instead the Commission will "support experiments with open access in its recently-launched research programme (by, for example, refunding the project costs of open access publishing)." It also noted that it has already set aside about €50 million in 2007/08 "to support and help coordinate infrastructures for storing scientific data across Europe and €25 million for research on digital preservation."

In other words, more research and more debate.

#### New bacteria

## Playing the Name Game

Remember our *Name It As You See It* editorial in *Lab Times* 4/2006? Erko Stacke- ▶▶

## Recently Awarded

▶ Three projects financed by the European Commission were awarded a share of this year's 1 million Descartes prize for Research. Beside two other projects, one on astronomy and the other about environmentally friendly production of hydrogen, the third lucky winner was a team of European cell biologists working in the so-called **APOPTOSIS** consortium led by **Guido Kroemer** from the CNRS Institut Gustave Roussy in Villejuif, France. Six laboratories from France, Austria, Denmark, Germany, Italy and Sweden have been working together in this consortium since 2001 to unravel the mysteries of cell death. One of the team's main contributions to the field was the discovery of how the control of cell death is linked to the permeability or leakiness of the mitochondria. Altogether the team's research papers have been cited by other journals over fifty thousand times to-date.

▶ **F. Ulrich Hartl**, director at the Max-Planck Institute of Biochemistry in Munich, and **Arthur L. Horwich**, professor of cellular and molecular physiology at the Yale University School of Medicine, were awarded the Wiley Prize in Biomedical Sciences. According to the jury the two "were chosen for their elucidation of the molecular machinery that guides proteins into their proper functional shape, thereby preventing the accumulation of protein aggregates that underlie many diseases, such as Alzheimer's and Parkinson's". The award includes a US\$25,000 grant.

▶ The Max Planck Research Award 2007, worth €750,000, goes to the Irish neuroscientist **Ray Dolan**, professor of Neuropsychiatry at University College London, and the German neurophysiologist **Hans-Christian Pape**, director of the Institute of Physiology I at Münster University. They receive the award for their research in the field of neuromodulation and behaviour. The award recognises outstanding academic achievements in international collaboration and is granted annually to one researcher working in Germany and one working abroad.

▶ **Erko Stackebrandt**, Director of the German Collection of Microorganisms and Cell Cultures GmbH in Braunschweig, recently came up with another good example of eye-catching nomenclature. He and his team isolated two strains of a novel bacterial genus from a hard-water sample collected in the Westerhöfer Bach in Lower Saxony, Germany and named it *Deefgea* gen., with *Deefgea rivuli* as the type species.



**Erko Stackebrandt:**  
Special way of saying "Thank you".

The name refers to the DFG acronym of the Deutsche Forschungsgemeinschaft. Stackebrandt explains why: "During my research work, the DFG has consistently funded projects about bacterial systematics and species diversity; not least the project during which we found *Deefgea*. Therefore it was just about time to say thank you."

Former DFG president Ernst-Ludwig Winnacker was particularly delighted that the name was given to a highly mobile, flagellated bacteria, taking it as an analogy for the funding organisation.

*Deefgea* also secretes slime, Stackebrandt responded. However, before incorrect analogies could be drawn he emphasised that this is a very important feature enabling bacteria to form and grow in productive biofilm communities.

Now that Stackebrandt has led the way, it remains to be seen whether researchers from other countries will follow and thank their funding organisations similarly. So keep your eyes open for *Ceeneressia*, *Wellcomtrusia* and *Esseneffia*.

*Romania and Bulgaria*

## Welcome on Board

Scientists were probably among those who cheered the loudest when Bulgaria and Romania joined the European Union (EU) on 1 January.

Since the collapse of the Warsaw Pact, the two countries have scraped along near the bottom of European rankings for research and development (R&D) spending. Aca-

demically communities were suffocating and high tech industry hardly existed at all.

For instance, since its transition to a market economy R&D expenditure in Bulgaria has dropped from 2.7 per cent of gross domestic product (GDP) to 0.2 per cent in 2002. Since 2004, spending has risen slightly to 0.5 per cent of GDP, whereas private R&D expenditure remains amongst the lowest in Europe.

Furthermore, university research is fragmented. Bulgaria has 43 universities in a population of less than 8 million. It is not hard to understand why young science graduates usually leave the country.

Recently, the situation in Romania has improved slightly. R&D spending reached only 0.4 per cent of GDP in 2006, but is expected to hit 0.6 per cent by the end of 2007.

Biomedical research, however, has been particularly weak. From 1994 to 2004 Romanian scientists co-authored about 1,300 research articles whilst their Bulgarian colleagues arrived at 3,500. Sweden and the Netherlands, comparable by population size, produced more than 78,000 and 95,000 publications, respectively, in the same period.

EU accession will now give the two countries greater access to EU R&D programmes, including the newly launched, seven-year Framework Programme 7. Romanian and Bulgarian researchers hope it might also put pressure on their countries' leaders to focus more on R&D. However, the research infrastructures in both countries are far from reaching the critical mass



necessary to sustain themselves. Therefore, the focus has to lie predominantly on encouraging collaboration with other European scientists. A task with which the EU can surely help.

*UK research funding*

## Breach of Principle

The agencies responsible for funding British science are angry. The Department of Trade and Industry (DTI) has announced that it will reduce the budgets of re- ▶▶

*Incredible Science (6):*

*From the secret archives of the IgNobel-committee*

## Happy With Your Job?

**Y**ou've heard it all before. Whereas one colleague enjoys his job a lot, another fritters away the entire day either chain smoking, drinking tea or doing anything else just to skive wherever possible. How come? It's all in your genes!

At least, that is what three US psychologists of economics think.

In 1999 they were trying to substantiate what had already been established, namely, the connection between self-confidence and choice of profession. The researchers therefore chose 107 individuals, who, from childhood had performed periodic experimental personality tests. These test persons had to report whether they were happy with their current jobs or not.

In the 1980s it had become clear that people with high self-confidence usually land better jobs. Such top jobs, however, had nothing to do with money or fame but rather with the following five attributes: (a) The requirements of the job have to be versatile. The employee has to (b) identify with the (c) preferably self-determined tasks of the job. He has to (d) receive feedback from others in order to (e) perceive one's own work as relevant and important.



The author, **Mark Benecke**, ([www.benecke.com](http://www.benecke.com)) is co-editor of the *Annals of Improbable Research* that annually award the **IgNobel Awards** in Cambridge/USA

At that time, it remained an open question as to why there was still a conspicuously high number of grumblers, even in jobs judged as perfect when determined by objective criteria. The personality tests finally provided the answer. People with high self-confidence who at the same time succeed in keeping everything under control don't give up when solving difficult tasks. Thus, the person becomes involved in ever more complex projects which, in turn, always correspond to their disposition and capabilities. Therefore he/she usually ends up working in a profession corresponding to the five top job attributes (see above) as well as matching one's own taste. Other people may have perfect jobs as well – these, however, might not fit their dispositions.

All of this is initiated and mediated by traits acquired in childhood. And, as most of us know, these are half genetic, half environmental (according to the wisdom of traditional biology). So one can say that even if things are running smoothly in the job – it doesn't matter! Crucial is one's own satisfaction.

IgNobel's final assessment: This might all be true. Therefore, regrettably, the paper is no candidate for an IgNobel award. Anyway, the authors themselves have apparently already found their dream jobs – and that should be reward enough.

(S. Kanazawa and M. Still (2000), *Evol. Hum. Behav.* 21(3), p185-190)

► search councils in the current spending review from £196 million to £128 million. According to the Department the money is needed to pay for “exceptional” and ongoing costs resulting from the collapse of the Rover car company and the unexpected increase in support needed to cover British Energy’s nuclear liabilities.

The BBC reported that Julia Goodfellow, who heads the Biotechnology and Biological Sciences Research Council (BBSRC), claims the DTI has used money specifically protected and earmarked for investment in science to pay for departmental failures.

Martin Rees, the current President of the Royal Society, entered the fray, saying: “It’s particularly disappointing because there’s been a tradition that the science budget has been ring-fenced against encroachment from other areas of the department’s budget, and that principle seems to have been breached in this case.”

Colin Blakemore, who leads the Medical Research Council (MRC), goes even further, stating that it might be time to take science funding out of the DTI’s hands altogether.



“I think there’s a strong and growing case for science to be handled and administered and funded really quite distinctly and separately from the rest of government; perhaps even the establishment of an independent department of science with its own protected budget”, he said.

Cuts to the BBSRC and MRC will total £6.7 million and £10.7 million, respectively.

### Private funding in Italy

## Two New Centres

Italian life science research is currently receiving two helping hands from the private sector.

In Verona a new Center of Functional Vegetable Genomics has just been opened, thanks to the support of the Savings Bank Foundation of Verona, Vicenza, Belluno and Ancona. The new structure intends to develop both basic research and research applied to the genetic improvement of vegetables. This includes, for example, product quality, adaptation to the environment and resistance to disease.

A second new research centre, this time to study paediatric diseases and oncology, will be established in Padua by the Città della Speranza Foundation. The project will be funded almost entirely through private investors and banks. 700 researchers from around the world will work in the research tower. Among them will be Paolo de Coppi, who recently demonstrated how to isolate stem cells from amniotic fluid.

## Do You Need Sex to Be a Species?

Asexual invertebrates show the same pattern of species variation as sexual groups.

From the human perspective, bdelloid rotifers (microscopic invertebrates widely distributed in freshwater repositories across the world), have been leading boring lives for a very long time: the last time they had sex was 100 million years ago.

Yet, bdelloids have apparently diverged into nearly 400 species since then, even without sex. This is in sharp contrast to the traditional view of species diversification, which says that interbreeding promotes cohesion within a population, thus maintaining the species, and barriers to interbreeding (causing reproductive isolation) promote species divergence. With no interbreeding to maintain cohesion, the thinking goes that asexual taxa tend not to diversify into distinct species. How, under this premise, bdelloids in particular have avoided the pitfalls of a lifestyle widely regarded as evolutionary suicide, has remained an enduring enigma.

A collaborative study by Italian and English teams, led by first author Diego Fontaneto, Zoologist at the University of Milan, set out to shed light onto these questions (*PLoS Biology* Vol. 5(4), e87). They predicted that if factors other than interbreeding (such as niche specialization, controlled species cohesion and divergence) were also important, then asexual taxa should diverge along the same lines as sexually reproducing organisms. If this were the case, they would expect to find genetic and morphological cohe-

sion within independently evolving populations and divergence among them.

That is exactly what Fontaneto *et al.* found after collecting bdelloids of the genus *Rotaria* from diverse habitats around the world and subjecting them to a combined genetic and morphological analysis. First they identified separate genetic clusters indicative of independently evolving populations (rather than variations within a single asexual population), which allowed the construction of a distinct evolutionary tree for the genus *Rotaria*. In a second approach, they measured and compared jaw morphology that corresponded well to the genetic data. Species identified as being closely related on the DNA-based trees typically had similar morphology.

Taken together these results show a high variation in morphological traits among *Rotaria* species and low variation within single species, indicating that bdelloids have indeed experi-

enced ecological divergence by natural selection at the species level.

The authors conclude that “the main causes of speciation in sexual organisms, population isolation and divergent selection, have the same qualitative effects in an asexual clade”. Or, in other words, sex is not a *necessary* condition for speciation.



(More research results from European labs on p. 28-33)