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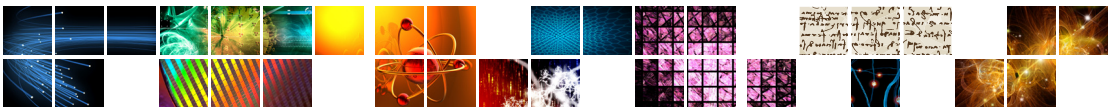

PEER REVIEW

CONTINUING THE CHAIN OF EXCELLENCE

SINCE 2007

Going Global
Heading for Asian longitudes

Researcher in the spotlight
Starting grantee Ján Tkáč

Focus on
Slovakia

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2013 ▪ #2 (June)

Editorial Professor Carl-Henrik Heldin

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The aim of the ERC is to provide generous funding for scientists who want to explore new and original ideas. Brilliant ideas are born in the brains of individual researchers; the ERC has therefore chosen a simple and straightforward policy, i.e. to support investigator-initiated frontier research of any kind, using excellence as the only evaluation criterion. Now more than 3500 top researchers have obtained ERC grants, and the impact of the ERC on the European research landscape can already be noticed. In order to live up to its ambition to promote and fund the best science in Europe, excellence needs to permeate all activities of the ERC, including evaluation of grant applications and administrative routines. Therefore, the ERC has set up an organisation capable of evaluating the applications it receives, and to select those that are most suitable for funding. Clearly, the quality of the evaluation process determines the credibility of the ERC and in the long run the impact of its funded research.

It is generally agreed that applications for research funds are best evaluated through peer review, i.e. active and experienced scientists read and judge the quality of the submitted proposals. The ERC puts a lot of trust in its evaluation panels, and their recommendations are followed without changes. Realising that no evaluation is better than the standard of the scientists who read and judge the applications, the ERC Scientific Council has put a great deal of emphasis and time into the recruitment of excellent scientists to the evaluation panels, from within and outside Europe. Overall, the responses from scientists who have been asked to serve on the panels have been overwhelmingly positive; they realise the importance of the ERC and most of them accept the invitation to serve on a panel with enthusiasm. It is anticipated that the combination of highly qualified members on the evaluation panels, firm quality criteria and strict rules to avoid conflict of interest, will guarantee that the funds of the ERC are used in the most productive and efficient manner.

Various aspects of ERC evaluations, which are of key importance for the success of the ERC, are discussed in this issue of the ERC Newsletter. Enjoy the reading!

Carl-Henrik Heldin
ERC Vice-President and Chair of the ERC Scientific Council standing committee on panels
Chair of the Nobel Foundation Board

In this issue

Peer review

Continuing the chain of excellence

Applying for an ERC grant is generally seen as a stimulating, yet intellectually challenging process. To be part of the small crowd that gets this coveted funding, candidates have to pass the highly competitive selection process based on international peer review. The ERC Scientific Council regards peer review as the optimal way to find and fund the best, as alluded to in the editorial of this issue. There is a crucial "chain of excellence" in which the best select the best. This chain has been growing over the past six years, so it is high time to provide some insights into this core element to the ERC's success.

The ERC's governing body - the Scientific Council - plays an essential role when it comes to the peer review evaluation. Whilst not involved in the actual selection of candidates, its 22 members guarantee the quality both in terms of peer reviewers and guiding principles throughout the evaluation.

The ERC peer review structure consists of 25 panels (see panel list p. 5), grouped under the three ERC domains. Each domain has a Scientific Council member as domain coordinator; ERC President Helga Nowotny is in charge of the Social Sciences and Humanities, Vice President Pavel Exner manages the Physical and Engineering Sciences, and ERC Vice President Carl-Hendrik Heldin oversees the Life Sciences.

The domain coordinators first assess which fields are in need of new peer review experts, and then ask their Scientific Council colleagues to help recruiting them. According to Dr Jose Labastida, head of the ERC Scientific Department, this is one of the key characteristics of the ERC. The ERC believes that the best scientists are able to identify excellence, and therefore continue the chain of excellence; the distinguished Scientific Council members choose the best scientific reviewers, who in turn select the best scientists able to develop excellent ideas.

The ERC peer reviewers come from around the globe, making it one of the most international peer review systems on this scale worldwide; around 11 per cent of panel members are based outside Europe (see graph p. 4). This international aspect is relevant when it comes to the impartiality of the selection. Each ERC panel consists of a chairperson and 12 to 14 panel members who meet in Brussels, and is complemented by remote referees with specific expertise. The overall organisation of the panels is coordinated by the ERC's Scientific Officers.

Finding the Best

Panels are focussed on finding the best research when they evaluate the submitted proposals in the ERC's two-step process. "*The candidates are initially being assessed on a short version of their proposal together with their CV and their ability to deliver their science*", says Prof. Jane Apperley, ERC Panel Chair within the Life Sciences domain and Chair of the Department of Haematology at Imperial College London.

Before their first meeting, panel chairs and panel members familiarise themselves with all proposals in their panel. Then, each proposal is reviewed more thoroughly by three panel members or more. Prof. Apperley clarifies that "*all proposals are discussed, even those with complete agreement on their quality, to make sure that each proposal has been appropriately reviewed and treated fairly.*"

Approximately 25 to 30 per cent of all submitted proposals go to step two. Candidates for the Starting and Consolidator grants will have to come to Brussels to present and justify their proposals to the panels. As Dr Labastida points out: "*The interview is a unique feature of the ERC. It's also crucial, as it is the place were excellence is detected among early-career researchers.*" ERC Starting Grantee Dr Debra Laefer is one of the applicants who successfully went through

the interview: "*I was very impressed with the quality of the reviewers. They asked extremely relevant and highly thoughtful questions.*" It was, however, a nerve-racking process. "*In my entire life I haven't done anything as stressful as this. It was very challenging to convey in such a short time my strengths and the technical aspects of the project.*"

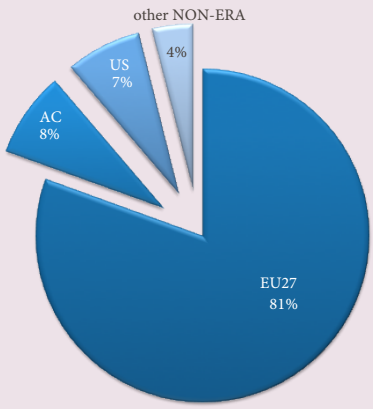
Dr Laefer, based at the University College Dublin, has peer review experience both as an applicant and a reviewer in different organisations. As an American with an international research path, she has also gone through peer review outside Europe. "*The panels of the American National Science Foundation, NSF, are much more domain specific, which generally means that they include more expertise. But, in the case of the ERC there are remote referees to fill this role. They asked thought-provoking questions. So both systems work.*"

Dr Jose Labastida confirms that the ERC panels indeed have a broad definition of areas and adds that "*this was a deliberate choice, so that interdisciplinary proposals are properly evaluated. In the second step of the evaluation, the broad overview of the panels is complimented by remote referees with specific expertise.*" These remote referees are selected by the panel members and are requested to assess proposals during step two.

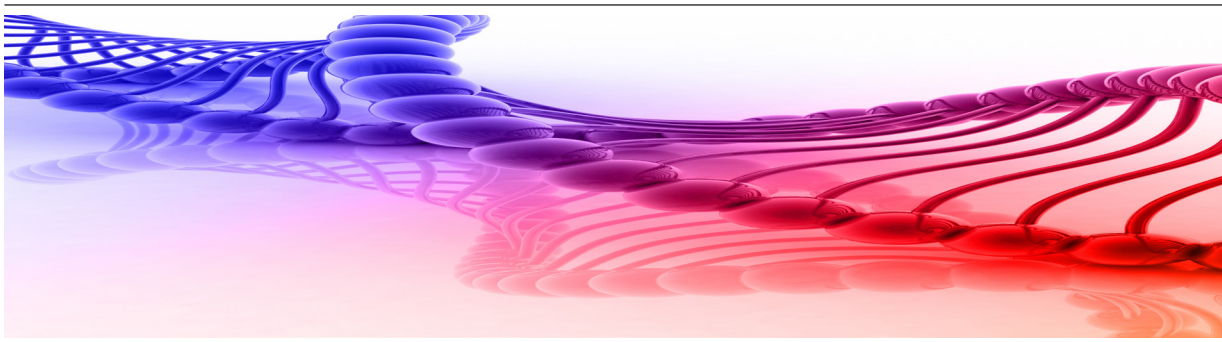
Also Prof. Jane Apperley sees the positive aspects of this model and elaborates on his point: "*Although the panel members are not all experts in identical fields, their experience and skills allow them to assess rapidly the quality of the applicant and the project. To the experienced reviewer good science and true ability is easily recognised. To obtain more subject specific reviews, which enable an assessment of the applicant in the wider context of their topic, the ERC uses subject specific external reviewers, whose opinion is invaluable to the panel members.*" She adds that: "*My experience is that the panel members take their role very seriously, they go to great length to seek expert advice before preparing their report.*".

Regarding the selection process, ERC Starting grantees Dr Debra Laefer and Dr Jan Tkáč (the latter interviewed for this issue's Researcher in the Spotlight) stress the importance of perseverance. Both researchers did not get the grant at their first attempt. "*The feedback from my first application helped me to improve the quality of the second proposal considerably*", says Dr Tkáč.

ERC international panel members



ERC panel members - country of institutional affiliation
All funding schemes 2012 & 2013 (In total 1901 panel members)
AC: Associated Countries



Funding the Best

All grant applicants are individually evaluated in two review areas. First, the potential of the applicant and the quality of his or her research record are evaluated. Secondly, the evaluators assess the ground-breaking nature of the proposal and its potential impact. They are especially looking for exciting, new ideas. Panel chair Prof. Apperley says: "*Without wishing to state the obvious, an excellent proposal will tick both boxes. A very good candidate is likely to write a very good proposal. If any of the two aspects is not satisfactory it casts doubt on the project as a whole. The proportion of projects that can be funded is obviously limited and excellence in both areas is necessary for success.*" So, excellence is the sole evaluation criterion. There are no quotas; geographical or other aspects do not play a role. And, there are no preferred research topics; this 'bottom-up' approach has also become an ERC trademark.

At the end of steps one and two, the evaluation panel defines a ranked list of all proposals in the panel at that step. The overall success rate is, depending on the grant scheme, between 10 and 12 per cent. The proposals finally fall within one of the following three categories:

- The main list: the top ranked proposals that fit within the budget;
- The reserve list: these proposals are next in ranking order. Some of the reserve proposals are funded, but not all, due to budgetary reasons;
- The proposals that failed to meet the ERC quality threshold.

It is interesting to note that more than a dozen countries have launched initiatives to fund ERC reserve list candidates who passed the strict quality threshold, but whose proposals were left unfunded due to the ERC's budgetary constraints. These countries do this without further peer review at the national level, which can be seen as a strong vote of confidence for the ERC peer review process.

ERC Panels

LIFE SCIENCES

- LS1 Molecular and Structural Biology and Biochemistry
- LS2 Genetics, Genomics, Bioinformatics and Systems Biology
- LS3 Cellular and Developmental Biology
- LS4 Physiology, Pathophysiology and Endocrinology
- LS5 Neurosciences and Neural Disorders
- LS6 Immunity and Infection
- LS7 Diagnostic Tools, Therapies and Public Health
- LS8 Evolutionary, Population and Environmental Biology
- LS9 Applied Life Sciences and Non-Medical Biotechnology

PHYSICAL SCIENCE AND ENGINEERING

- PE1 Mathematics
- PE2 Fundamental Constituents of Matter
- PE3 Condensed Matter Physics
- PE4 Physical and Analytical Chemical Sciences
- PE5 Synthetic Chemistry and Materials
- PE6 Computer Science and Informatics
- PE7 Systems and Communication Engineering
- PE8 Products and Processes Engineering
- PE9 Universe Sciences
- PE10 Earth System Science

SOCIAL SCIENCES AND HUMANITIES

- SH1 Individuals, Institutions and Markets
- SH2 Institutions, Values, Beliefs and Behaviour
- SH3 Environment, Space and Populations
- SH4 The Human Mind and Its Complexity
- SH5 Cultures and Cultural Production
- SH6 The Study of the Human Past

Going Global

Heading for Asian longitudes

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The ERC's awareness-raising campaign "ERC goes Global", led by ERC Secretary General Prof. Donald Dingwell, continues the worldwide tour to forge closer ties and to inform top researchers about the ERC's attractive funding opportunities. In March, India was at the centre of attention.

Building on the previous ERC visits to this country, which has tremendous science potential, Prof. Dingwell further developed relations with Indian counterparts and met scientists from leading universities in Chennai, Bangalore, Pune, Mumbai and New Delhi. The Secretary General said "*We are delighted with the open-mindedness with which we have been welcomed here. The climate of science, education and research in India is very positive*". He was accompanied by Indian ERC grant holder Dr Ramesh Pillai, who underlined that "*the ERC is a fantastic opportunity for young and senior Indian scientists, as it provides significant financial backing for their creative ideas*". Since 2007, around 13 Indian researchers have been awarded ERC grants. Furthermore, estimates show that – in addition to grantees – the ERC supports some 22,000 team members in the funded projects, of which close to 500 are of Indian nationality.

After India, the ERC, represented by Massimo Gaudina, was also present at the EU–Japan career days in Tokyo and Kyoto at the end of May. Four events were organised by the EU Delegation in Tokyo, which were attended by some 2000 participants.

What's on the cards?

Following the spring visits to India and Japan, the ERC will return to Asia after the summer to continue its quest to foster 'brain circulation' and to make the ERC better known. Prof. Dingwell plans to visit China together with a Chinese ERC grantee, as well as ERC Scientific Council member Prof. Alain Peyraube, who is a distinguished scholar in Chinese Linguistics. Stops are foreseen in several research hubs around the country. What's more, a strong ERC delegation, headed by President Helga Nowotny, has been invited to speak at the Annual Meeting of the New Champions, often tapped the 'Summer Davos', organised by the World Economic Forum. This year's edition will be held in Dalian, China, in September. Stay tuned for more on this in the next newsletter!

Video with Donald Dingwell

Global Research Council moves ahead

The Global Research Council (GRC) met again from 27 to 29 May 2013 in Berlin, which resulted in the adoption of an action plan towards open access, as well as a statement of principles for research integrity. Established in Washington DC in May last year, the GRC is a forum involving more than 70 research funding agencies worldwide. They pledge to find mutually acceptable paths to greater international research collaboration. The next meeting will be held in China in 2014.
As last year, ERC President Helga Nowotny attended the forum. To read more about her thoughts on the outcome of this meeting, please see this statement.

Researcher in the Spotlight

First ERC grantee in Slovakia - Dr Ján Tkáč

© Dr Ján Tkáč

Based at the Institute of Chemistry in the Slovak Academy of Sciences, Dr Ján Tkáč is the first ERC grantee in Slovakia. After his postdoc experience at the universities of Lund and Linköping in Sweden, and later Oxford University, he returned to his home country to continue his career in glycobiotechnology. Last year, he was awarded a Starting grant, which allowed him to set up a team of four PhD students and one postdoc from Slovakia and Czech Republic. With this funding, he is currently developing innovative biochip sensors that can detect changes in 'glycosylation'. Glycans are sugar molecules which carry the information that human cells need to fight infections. They are a vital early-warning system for triggering an organism's natural defense system at the first sign of attack. With the biochips, Dr Ján Tkáč and his team want to gain a better understanding of glycan recognition, which can help to develop new vaccines against diseases such as cancer. This approach has a "must have" feature of tomorrow´s diagnostic devices.

What has the ERC grant meant to you and your research?

An ERC Starting grant is the highest quality mark a young scientist in Europe can get. It is without any doubt very important for my future career to get such a label of excellence. The best outcome of having the grant is that I can do my own research with the group of people I chose, with funding that exceeds my experience as a postdoc in Linköping, Lund and Oxford. Plus, five years of funding is a key element on the way to bring ideas into something that can be useful for people.

How would you describe the current academic climate in Slovakia?

A darker side of the story is how underfinanced science is in my country, which discourages people to do research here. However, the situation has changed considerably in the past two to three years. A world-class infrastructure, financed by the EU Structural funds, makes the life of scientists much easier. Another very positive development is an initiative launched by the Slovak Academy of Sciences to attract high-quality scientists to Slovakia by means of competitive fellowships.

How do you see the role of the ERC for researchers in your country ?

I know that there is one ERC grantee of Slovak origin established abroad. A combination of already available infrastructure and the very substantial funding via the ERC granting schemes has a real potential to attract top researchers to come back here. My personal experience is that scientists in Slovakia are now more aware about the ERC funding schemes and have an enhanced interest to apply for them. I expect that it is only a question of time before other applicants will also be funded by the ERC in this country.

Any message you'd like to pass to fellow Slovakian researchers who consider applying?

It is important to allocate considerable time to the preparation of the project proposal. I think that two months of hard work (in my case) in exchange for five years of generous funding is a very good deal. I applied for ERC funding twice and the feedback from my first application helped me to improve the quality of the second proposal considerably. Thus, it is important not to give up easily. I wish them good luck!

Read more about his ERC project

Watch him speak about research in Slovakia

Focus on: Slovakia

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Meeting Slovak research talent

On 17 and 18 June, the Scientific Council met in Bratislava. At this plenary meeting, the first to be held in Slovakia, the Scientific Council established the ERC work programme for 2014, which falls under the new 'Horizon 2020' programme. The Scientific Council gathers for its plenary meetings around five times a year; in Brussels, but also across Europe. This approach was agreed from the outset as the members found it very important to keep in touch with national research communities and policy makers across the continent.

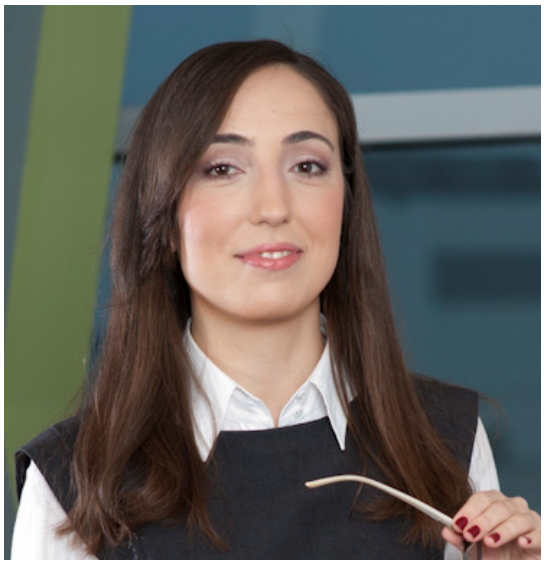
On the eve of the plenary in Bratislava, the ERC also seized the opportunity to meet Slovakian researchers and the media. The ERC President Helga Nowotny and Slovakia's State Secretary of Education, Science, Research and Sport Štefan Chudoba first held a press conference. During the public information event that followed, the Slovakian research community showed great interest in the ERC. The first grantee based in Slovakia, Ján Tkáč, encouraged his fellow researchers to apply for ERC grants. Both Prof. Nowotny and State Secretary Chudoba underlined the importance of investing more in R&D. Prof. Nowotny also noted that it is very positive that the first ERC grantee in this country has been able to compete with the very best and added: "*Science is like sports – you need an example!*". Mr Chuboda concurred and said "*we hope that this will have a multiplying effect on Slovakian researchers!*".

See **press release**

ERC grants and Slovakia

> Currently there are two ERC grantees that hold the Slovakian nationality.
> Dr. Ján Tkáč carries out his research at the Institute of Chemistry, Slovak Academy of Sciences, in Bratislava. His project "Electrochemical lectin and glycan biochips" was selected for funding in the Starting Grant 2012 call.
> Dr. Eva Benkova carries out her research project "Hormonal cross-talk in plant organogenesis", in the domain of life sciences, at the Institute of Science and Technology (IST) Austria. She was the first Slovakian researcher to be awarded an ERC grant (Starting Grant 2007).
> To date, four Slovakian scientists have served or are serving as ERC panel members, remote referees or external experts involved in the evaluation of proposals and the selection of grantees.

Some questions to Mária Lichvárová, ERC National Contact Point in Slovakia



© Mária Lichvárová

How can the ERC funding schemes benefit Slovakian researchers?

The most important thing is that ERC funding is focused on research excellence; not on research in general. This is key in order to stimulate competition amongst the best in Slovakia. It's excellent news that an ERC grant has been awarded to a scientist based in Slovakia. Success of one researcher is very motivating for others. So I do hope that this can have a domino effect.

Why is the participation of Slovakian researchers in ERC calls low? What's the way forward?

There are several reasons for why there are still few applicants from Slovakia in the ERC calls. So far, I think one of the main causes is that the ERC is not enough known amongst the Slovakian scientific community. Another point that possibly plays a role is that slightly more accent is put on the excellence of the scientific track than on the excellence of the project proposal. I wish that Slovakian research talent would be aware that the ERC also supports young scientists and researchers with new, fresh ideas. I'd also like to encourage Slovakian researchers who applied for an ERC grant, but did not succeed, to try again.

Information is essential here, and practical seminars for applicants would be useful. Our scientists need to learn how to write an ERC project proposal and deal with the interview. As the National Contact Point, we would like to organise a series of practical training courses for researchers in cooperation with the ERC.

It must also be noted that the pool of top talent is not as big; many Slovakian researchers who studied abroad did not come back, due to better conditions and infrastructure there. In the last few years this situation has changed though, so that's encouraging. Thanks to the EU Structural Funds many laboratories are now equipped with modern infrastructure, which can increase our participation in the ERC competitions. Support of successful (but not financed by ERC) project proposals from national sources would also be motivating for the researchers.

How do Slovakian researchers view the ERC in general?

It often happens that Slovakian researchers are not aware of the fact that ERC grantees are the best of the best in their research field. Also, some may think that researchers from the EU15 countries may have an advantage in the evaluation process because they are more experienced and familiar with proposal writing and the evaluation process. On the other hand, they understand that ERC grants are the most prestigious and can boost their careers.

What are the strengths of the Slovakian research landscape?

Slovakia has a long and strong tradition in science and research. Among the strongest areas are material research, nanotechnologies, biomedicine, ICT, energetics and environmental research. From a geographical point of view most of the research organisations (Slovak Academy of Sciences, universities) are situated in the western part of the country– Bratislava, Košice (mostly ICT, material research and biomedicine) and Žilina (transportation and industry research). In the last decade, new innovative Small and Medium Enterprises (SMEs), connected to research or providing research, were created. Cooperation between academia and industry is also starting to improve.

Did you miss this?

European Inventor Award winner

ERC grantee Prof. Patrick Couvreur won the **European Inventor Award** in the category research. He was awarded for his research on nanomedicines, more precisely the use of nanotechnologies to improve the delivery of drugs to targeted disease cells. The tiny "Nano-capsules" have had an enormous impact by being a less aggressive, but more effective form of therapy. Every year the European Patent Office honours the world's brightest innovators in business, politics, media and the sciences.

© Patrick Couvreur

Conference on European Brain research

The European Commission organised the conference 'European Brain Research: Successes & next challenges' on 14 May. The ERC actively participated in the event, with three grantees presenting their research at the conference. Grantees were also featured in a special **brochure** on brain research. In addition, a **Google Hangout** was organised, where people asked questions to experts from around Europe through YouTube and Google+.

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High demand for ERC Consolidator grant

With a 48 % increase in the number of applications from researchers with over 7 and up to 12 years of experience after their PhD, the ERC's new Consolidator grant kicked off to a good start. Last year, the ERC Starting Grant scheme was split in two: the new ERC Consolidator grant, and the ERC Starting grant. Some 3670 proposals were submitted in total to this Consolidator grant call and the results are expected in December 2013/January 2014.

Read more

Partnership with Gates Foundation

The European Commission and the Gates Foundation have agreed to work together on developing treatments for poverty-related diseases, such as malaria, HIV/AIDS and tuberculosis. EU Research Commissioner Máire Geoghegan-Quinn and Bill Gates signed the Memorandum of Understanding on 10 June 2013 in Paris. The partnership includes support for frontier research work initiated by investigators through the activities of the ERC.

Read more

Future calls

In April, **the ERC Scientific Council gave a Statement on the future calls,** without any commitment, in an effort to provide provisional information for the convenience of the scientific community:

"As the EU's Seventh Research Framework Programme (FP7) will finish at the end of this year, the main ERC calls for proposals within FP7 are now closed. The next ERC calls will be made under the future programme, 'Horizon 2020', which will take over from FP7 for 2014 to 2020.

However, 'Horizon 2020' has not yet been adopted. As is normally the case during the transition from one framework programme to another, the schedule for the next ERC calls (and ERC Work Programme) is very likely to differ from previous years.

The ERC Scientific Council has discussed the issue and, based on the current state of play, it can provide the following possible scenario on a purely **indicative basis**:

- Publication of the provisional schedule for the new calls (ERC Work Programme 2014), late in 2013;
- Opening and submission deadlines of new ERC calls throughout 2014:
    - Opening and submission deadline for Starting grants; first and second quarter of 2014
    - Opening and submission deadline for Consolidator grants; second quarter of 2014
    - Opening and submission deadline for Advanced grants; fourth quarter of 2014
- No further calls for Synergy grants in 2013 and 2014;
- Normal schedule for Proof of Concept grants (one call with two deadlines in 2014).

The ERC will do its utmost to make the transition as smooth as possible and provide the necessary continuity for the research community."

No further information is available at this stage on the calendar, budget or rules of the next calls.

Stay informed on the **ERC website** and the **Participant Portal**.

Editorial Board:
Massimo Gaudina, Madeleine Drielsma
Noélie Auvergne, Samantha Christey, Maud Scelo
Scientific Council members: Pavel Exner, Danny Dolev, Isabelle Vernos

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For comments:
erc-info@ec.europa.eu

European Research Council Executive Agency
16 Place Charles Rogier
BE-1210 Brussels
Belgium

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