

ideas

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Newsletter of the European Research Council



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Editorial by Robert-Jan Smits



I have been fortunate to have been involved in the development of the European Research Council from the very start. It is also a pleasure to have been given the opportunity to open this issue of the ERC newsletter. The theme this time - the Social Sciences and the Humanities - is a firmly established ERC domain since the outset and certainly merits the attention.

The Social Sciences and the Humanities is of great importance and the Commission will therefore place it at the core of the Horizon 2020 programme for 2014-2020. We need research in this field to examine, interpret, and understand today's societal challenges,

and to guide us to possible answers that are both culturally and ethically sensitive, as well as politically and socially relevant. New solutions will only come through ground-breaking research and innovation that brings together the best minds from Europe and beyond. The EU's collaborative research programme in the Social Sciences and Humanities is the world's largest in this area and we are determined to maintain our leading role here.

Under the EU Seventh Framework Programme, we had a specific component dedicated to the Social Sciences and Humanities. However, in Horizon 2020, this research field will be embedded across the programme to optimise its contribution in solving the major issues of our time. In addition to the Marie Skłodowska Curie Actions and the ERC that will continue funding this domain in a bottom-up way, it will be given a key role in the third pillar of Horizon 2020, which addresses societal challenges such as health, demographic change, food security, energy, climate action, and innovative societies.

This, however, requires that both the social science and natural science communities emerge out of their silos and collectively engage in addressing major societal challenges. Horizon 2020 is built on this approach, and we must make the necessary funds available to realise this goal. This novel outlook will be discussed at a conference organised jointly with the incoming Lithuanian EU Presidency in 2013.

The current issue of 'ideas' highlights research in the Social Sciences and Humanities. You will also learn more about other topics, for instance the wider impact of the ERC, and meet with Nobel Prize winning ERC grantee Serge Haroche, as well as the new Scientific Council members.

I hope you enjoy reading ideas!

Robert-Jan Smits, Director-General European Commission, DG Research & Innovation

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A Mainstay in the ERC

Since its inception in 2007, it was established that the European Research Council funds frontier research across all academic fields, including the Social Sciences and Humanities. While encouraging interdisciplinarity, the ERC has divided its budget into three domains; namely Physical Sciences and Engineering (PE), Life Sciences (LS), and Social Sciences and Humanities (SH).

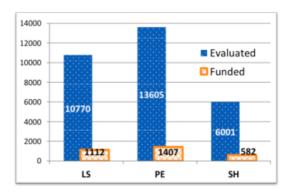
Around 16% of the ERC budget is committed to SH projects, and on average an Advanced Grant in this field is worth around €1.9 million and a Starting Grant approximately €1.2 million. Looking at the distribution of grants, 19% are in the SH domain. This corresponds well to the share of applicants for ERC calls in this field, as the allocation of ERC funds depends on demand. To date, nearly 500 ERC grantees are conducting their research in the SH domain, with a total budget of around €700 million. The ERC is however keen to see more top researchers apply for its grants in the field of SH.

The research disciplines covered by the SH domain are diverse and range from anthropology and archaeology to economics, sociology and psychology (see page 5 for more).

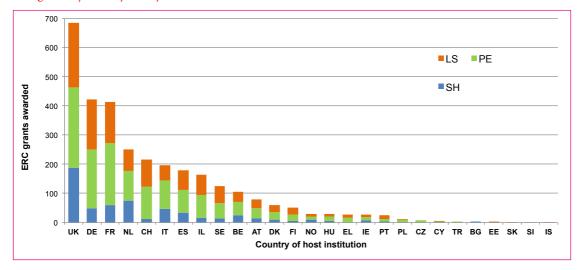
The various research topics are regrouped into six evaluation panels for peer review in the ERC:

- > SH Panel 1: Individuals, institutions & markets
- > SH Panel 2: Institutions, values, beliefs and behaviour
- > SH Panel 3: Environment, space & population
- > SH Panel 4: The Human Mind and its complexity
- > SH Panel 5: Cultures & cultural production
- > SH Panel 6: The study of the human past

Evaluated proposals and funded proposals by domain 19% of all ERC grants are in SH domain



ERC grants by country and by domain





Social Sciences & Humanities

A conversation with Professor Helga Nowotny



Prof. Helga Nowotny is President of the ERC since March 2010 and Professor Emerita of Social Studies of Science at ETH Zurich. We spoke to her about the ERC's support for research in the Social Sciences and Humanities (SH) and more.

Why is it important for the ERC to support SH research?

From the very start, the ERC Scientific Council has had an integrative understanding of "science" in the tradition of the 19th century German term "Wissenschaft", including the Social Sciences and Humanities. Indeed, many problems of humankind are related to our past and to the fact that we, as individuals, but also as groups, are social beings. Our cultural fabric with all its fascinating diversity shapes us and we continue to shape it, increasingly so through the technologies we use. A better understanding of societies and cultures is absolutely necessary if we are to cope with the challenges that our globalised world faces in the 21st century. Technology is of immense help to us for expanding our radius of action, but technological fixes alone are insufficient to solve the problems that humanity is confronted with today.

Compared to the natural sciences, less ERC funds go to the SH domain; is it under-represented?

The ERC budget allocation to the three domains – Physics and Engineering, Life Sciences, and Social Sciences and Humanities - is primarily demand-driven and we have continually adjusted it over the past years. When the ERC was launched, we began with a rough budgetary division between the three domains. SH started with 15%, but has by now gone up to 18%. The fact that projects in this domain are on average less costly than the resource-

intensive sciences should also be taken into account. When compared to other European FP7 funding schemes, the share of SH in the ERC is much larger and also compares favourably with most national budget allocations. There are no thematic priorities, "no strings attached", except the criterion of scientific excellence. This opens the door to truly ground-breaking research. I expect that the ERC will have a great impact on the SH domain, and on academic institutions in Europe. It took a while for researchers in the field of SH to realise that the ERC is also there for them. I strongly encourage more excellent proposals from top talent in this area.

As a distinguished social scientist you were closely involved in establishing an entirely new SH discipline; please tell us more.

It's true that I belong to the first generation of practitioners of Science and Technology Studies (STS). My initial training was as a lawyer, and this expertise is still good to have! But I soon became interested in how society works and received my Ph.D. in Sociology at Columbia University. Encouraged by my mentors Robert K. Merton and Paul F. Lazarsfeld, and through my profound sociological training, I became intrigued by the relationship between the world of science and scientific institutions, how scientists work, and their relationship with society. Until then, science was mostly handled from a normative, philosophical point of view. But my colleagues and I asked what actually happens in a laboratory, how researchers conduct their experiments, how they write scientific papers about their findings, which in turn may lead to building up a scientific reputation, and that can help them obtain funding and so on. So, a fascinating world opened up to my curiosity and I enjoyed every moment of it. This really helped me understand my colleagues from the natural sciences and I was able to put this to good use when I was professor at ETH Zurich, one of Europe's foremost research universities. It also greatly helped me to better understand research policy, for instance what happens at European level. Therefore, I have become a keen advocate for genuine 'rapprochement' between the social sciences and the natural sciences, which begins with mutual respect, understanding and curiosity towards the 'other world' - for the betterment of the one world that we inhabit.

Research in the spotlight

A glimpse into the world of Social Sciences & Humanities: Some striking ERC projects



South-East Europe, the gateway into human evolution

European paleoanthropolgy still conceals many secrets. One relates to the identity of Europe's early colonisers over a million years ago. Relevant questions concern where they came from, how they adapted to their new environments and dispersed across the continent, and how they interacted with their contemporaries. Evidence shows that Southern Europe was

the gateway through which humans, including the earliest members of our species, Homo sapiens, entered Europe. With her grant, Prof. Dr Katerina Harvati-Papatheodorou from the University of Tübingen (Germany) looks at primate and human evolution in Southern Europe, with a focus on Greece and its neighbours. She aims to identify the earliest human population movements into Europe, exploring adaptation and possible late survival of Neanderthals there, and documenting interactions between Neanderthals and early modern humans both at cultural and biological levels. As South-Eastern Europe remains an underexplored territory for paleoanthropologists, her project, which combines paleontology, paleolithic archaeology, zooarcheology, paleobotany and geology, aims to fill a large research gap and shed light on the course of human evolution.



Understanding, measuring and anticipating financial risks

Financial instability has clearly been at the centre of the economic and political scene lately; with the fall of Lehman Brothers in 2008 and the subsequent distress triggered amongst American and European financial institutions. ERC grantee Prof. Augustin Landier from the Toulouse School of Economics (France), is looking at systemic risk, i.e.

the way financial institutions experience negative shocks and contaminate each other till the collapse of the entire financial system. Combining theoretical and empirical work, he investigates linkages and incentives at the root of such contagion. His research focuses on five different branches: the role of liquidation spirals and operator risk-shifting, the optimal level of transparency and the dynamics of rents in the financial sector, and the impact of politics on the economy. Through this project, he aims to foster interaction between researchers in economics, and European regulators and international bodies such as the ECB, IMF, EBA, Banque de France and Moody's. By delving into the "black box" of financial institutions, Landier aspires to enrich the ongoing debate with new ideas for optimising regulation of this sector.

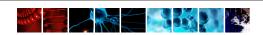
The iconology of textiles

Textile fabrication is one of the oldest cultural technologies that transmits meanings and values across historical times and cultures. ERC grantee Dr Tristan Weddigen from the Institute of Art History at the University of Zurich (Switzerland) explores both the cultural function and



the meaning of textile as a medium in European art and architecture, from the Middle Ages to the present. He analyses textile as an artistic material using a multidisciplinary approach. The study of textiles is not bound by traditional techniques and materials involved in making the textiles themselves; it draws on their figurative and metaphorical meanings in visual works. The research aims to chart an iconology of textile, to trace the history of its ideas and uses as well as to set it within a broader aesthetic discourse. The project has contributed to the enrichment of the visual theory of textiles through its work on Medieval, Early-Modern and 19th century tapestries, , the place of textiles in medieval liturgy and in contemporary art and on their symbolic function in Dutch Golden Age painting. This project will contribute to the better understanding of our artistic and cultural heritage.

See for instance some ERC **Projects** in Anthropology & Archaeology





ERC wider impact

Fostering a new generation of leading researchers: Team members in ERC-funded research



The ERC has contributed towards changing the European research landscape since its conception by providing grants to individual researchers. However, it also has wider positive impacts. One interesting example is that the ERC helps to train a new generation of researchers that work in research teams set up by the grantees. The ERC took a closer look at this to get the full picture of the nature and composition of these teams.

An estimate based on the sample group (a total of 635 projects) shows that each ERC project, led by a Principle Investigator, on average employs six team members. By the end of the EU Seventh Research Framework Programme next year, it is estimated that the ERC will have supported - in addition to over 4,000 funded grantees - more than 23,500 team members, including nearly 6,500 doctoral students and 8,500 postdoctoral researchers. They represent tomorrow's generation of excellent researchers, personally mentored by the best scientists of our time, in new research techniques at the frontier of knowledge.

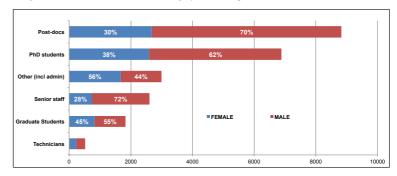
The ERC-funded research teams vary a great deal between the two grant schemes and the three domains. Advanced Grant projects on average engage over seven team members while Starting Grant projects have five. Almost half of the team members are in the Physical Science and Engineering domain, a good third in Life Sciences, while the rest are in Social Sciences and Humanities.

The estimates for the gender-balance of the teams show that around 37% are women, which is a higher share than the number of women grantees (20%). The majority of female team members are at the start of their research careers, and this can therefore be

seen as an encouraging sign for the future of women in cuttingedge research.

Through the training of excellent young researchers, the ERC is achieving another important goal in terms of internationalisation widening participation. Around 50% of all ERC team members hold a nationality different from that of the Principal Investigator. Furthermore, out of the 41 countries part of the European Research Area (ERA), the ERC team members are of 38 different nationalities. In addition to these, another 55 nationalities from outside ERA are part of the teams working on ERC projects. They represent as much as 18% or some 4,000 team members by the end of FP7 - with Americans, Chinese, Indians and Russians taking the lead. Just over half (54%) of the non-ERA nationals came to Europe for a postdoctoral position. These findings demonstrate the truly global character of the ERC and affirm that today's science knows no boundaries.

Forecast: Number of ERC team members at the end of FP7 (simple head count, estimate based on 4000 projects to be signed until the end of FP7)





Meet with

The new Scientific Council Members

In December, the European Commission appointed eight new members for the governing body of the ERC, the Scientific Council. This is part of a staged renewal of its 22 members, who represent the European research community at large. Highly distinguished in their respective fields, the new members, starting in the beginning of 2013, will both carry forward the legacy of the first Scientific Council and bring with them new ideas, enthusiasm and expertise.



Prof. Klaus Bock is presently Chairman of the Danish National Research Foundation, and was also President of the Danish Academy of Technical Sciences. His latest scientific interests focus upon proteincarbohydrate interactions, particularly the

synthesis and structural analysis of glycopeptides.



As Professor of Experimental Physics at the University of Cambridge, Athene Donald's research area is soft matter and biological physics, which is inherently interdisciplinary work. She was elected to Academia Europaea in 2009, and was

made a Dame Commander of the British Empire in 2010.



Dr. Barbara Ensoli is Director of the National AIDS Center at Istituto Superiore di Sanità (Italy). She is also Vice-President of the National AIDS Committee at the Italian Ministry of Health. Her current research interests are

HIV pathogenesis and the development of HIV/AIDS preventative and therapeutic vaccines.



Nuria Sebastian Galles is Professor in Psychology at the Department of Technology in Universitat Pompeu Fabra Barcelona, Spain. Her current work focuses on the study of neural and cognitive mechanisms underlying

learning and language processing, with a special emphasis on bilingual populations.



Prof. Reinhard Genzel is a leading researcher in infrared astronomy. At present, he is Director at the Max Planck Institute for Extraterrestrial Physics (Germany) and Full Professor in the Physics Department at University of

California, Berkeley (USA).



Prof. Dr.-Ing. Matthias Kleiner is President of the German Research Foundation (DFG) and has played a vital role in numerous international interdisciplinary research projects and global science networks. From January

2013, he will return to the Technical University of Dortmund (Germany) as head of the Institute of Forming Technology and Lightweight Construction.



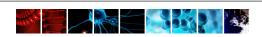
Eva Kondorosi is presently Research Professor at the Biological Research Centre of the Hungarian Academy of Sciences. She is also Research Director of the Plant Science Institute at CNRS (France). Her primary research field is

Rhizobium-legume symbiosis with a recent focus on the plant controlled differentiation of bacteria.



Prof. Dr. Reinhilde Veugelers is Full Professor at KU Leuven (Belgium) in the Faculty of Economics and Business. Her research is concentrated in the area of science and innovation, industrial organisation, and international strategy.

See press release of 13 December 2012



Interview with

New Nobel laureate Professor Serge Haroche



Serge Haroche receiving his Nobel Prize from His Majesty King Carl XVI Gustaf of Sweden at the Stockholm Concert Hall, 10 December 2012.

Last week, the world's attention turned to the Nobel Prize ceremony that took place according to the tradition, with all its grandeur, in the presence of the academic cream of the crop. Professors Serge Haroche and David J. Wineland received this year's Nobel Prize in Physics, awarded for their groundbreaking experimental methods on the measuring and manipulation of individual quantum systems. Based at the CNRS (Centre national de la recherche scientifique) in Paris, Professor Haroche holds an ERC Advanced Grant since 2009. He gives us an insight into his ERC-funded research and shares with us his vision of the future of European research.

Tell us about your ERC project and its possible connection to your Nobel Prize winning research?

Our project, funded by an ERC Advanced Grant, is entitled "Exploring decoherence of light in cavities" (DECLIC). It aims to explore the fuzzy boundary between the quantum and classical worlds. Quantum systems can be in state superpositions, suspended between different classical realities. Such strange situations are never found in the classical, macroscopic world, due to the 'decoherence' mechanism, which rapidly transforms quantum superpositions (one state AND the other) into mere probabilistic alternatives (one state OR the other). In our project, we prepare quantum states at the mesoscopic scale, using the techniques and methods of cavity quantum electrodynamics, which have been recognized by the Nobel committee. We store a mesoscopic field, made of a few photons, in a modern equivalent of Einstein's photon box, a superconducting microwave cavity. And, we manipulate and probe this field with exquisitely sensitive atomic states. We can prepare exotic quantum states of the field and monitor their 'decoherence'. We can also combat efficiently this 'decoherence', extending into the quantum realm the feedback methods ordinarily used in complex classical systems. This is an important step for the preservation of fragile quantum resources, which are of interest for applications in quantum information processing.

What is the impact of the ERC for the research community and for Europe at large?

The ERC has a tremendous impact on the development of research in Europe and I very much hope

that it will be given the financial means of continuing and extending its action. The ERC schemes have quite unique features. First, the scientific call is totally open. Any field of research is eligible. The only required criterion is excellent science. This is particularly important for fundamental research, such as our own. It could lead to important applications, but this is most probably a long-term perspective. It is thus not eligible for programmes with definite short-term goals and mandatory requirements for applications and connections with the industrial world. The ERC grants are thus a unique funding possibility also for humanities. The grants also allow for a long term effort, providing enough support to start ambitious projects with the best chances for success. It might be interesting to extend the duration of the Starting Grants. For major experimental developments, five years is very short. The ERC grants open many opportunities for doctoral stud-

As one of the Nobel Laureates who signed an open letter to EU leaders and Presidents ahead of their special summit in Brussels, what would be your message to EU decision-makers at a time when the EU budget for research is threatened?

ies and post-doctoral mobility which, in addition to

other EU programmes, help in structuring the EU's

research community.

I certainly understand that the EU budget is under stress, as are those of the national governments. We are going through a severe crisis which implies difficult choices. I do think, nevertheless, that cuts in the research budget, and particularly in the ERC's budget, would be a severe mistake that could have far reaching negative consequences. We are facing enormous problems, even more serious than the economic struggle of today. The shortfall in resources, water availability and global climate change can most probably be overcome only with radically new ideas. Curiosity-driven research is a fertile ground for the birth of these ideas.

Cutting the ERC and EU resources would lead to a considerable recession in fundamental research at the European scale and, as a consequence, we would risk losing the brightest individuals. It should also be stressed that fundamental research is, in many cases,

"Cutting the ERC and EU resources would lead to a considerable recession in fundamental research at the European scale and, as a consequence, we would risk losing the brightest individuals."

rather low-cost. An ERC Advanced Grant is a small-scale project, with a possibly tremendous long-term return on investment. Let me mention one historical example. The advent of the purely curiosity-driven quantum theory led, tens of years later, to the development of our information society and to a major source of economic development: without quantum physics, no computers, no lasers and hence no net economy!

For the ERC Press release, click here





Focus on Italy

Italian researchers at home and beyond



vnibal Irejo,

Italian researchers are amongst the top five in terms of ERC grants awarded, and they have been granted around €425 million in ERC funding to date. However, almost one third of the Italian ERC grantees conduct the research outside their country, and only 20 grantees working in Italian laboratories are foreign nationals. This situation was highlighted by ERC President Helga Nowotny during an information event in Rome in June this year: "I see many brilliant Italian researchers going abroad, but few foreign scientists coming to Italy." Urging Italy to be more international, she pointed to countries that attract a lot of foreign talent such as the United Kingdom and Switzerland.

On this occasion, Italian Minister for Education, Universities and Research Francesco Profumo, stated that he wishes to reverse this trend and improve the working conditions of international scientists with a new legislative proposal. Some legislative measures already exist to fight "brain drain". A provision of the Italian law 230/2005 gives universities the opportunity to attribute some positions as lecturers and associate professors, to researchers having received international scientific distinctions. Last month, La Sapienza University in Roma was the first university to apply this measure and give the status of associate professors to six ERC grantees.

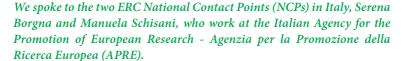
Key Italian personalities in the ERC

The ERC Scientific Council has 22 distinguished members, of which two are Italian: Prof. Anna Tramontano, who is Chair Professor of Biochemistry at the Sapienza University in Rome; Dr. Claudio Bordignon, who is Full Professor of Haematology at the Vita-Salute San Raffaele University in Milan. The new member starting next year is Dr. Barbara Ensoli, Director of the National AIDS Center at Istituto Superiore di Sanità.



Serena Borgna

Two questions to the Italian NCPs





Manuela Schisani

As an NCP, what is your role and mission?

Agenzia per la Promozione della Ricerca Europea hosts all the Italian NCPs for EU Research and Innovation programmes. The information about ERC calls and rules is widespread amongst scientists. We regularly send information to Italian research institutions and universities, allowing them to stay informed regarding the ERC. Researchers receive all kinds of assistance from their Contact Points through info-days, training sessions, personalised meetings, and support on financial, legal and administrative aspects of the grants. As NCPs, we also assist Italian ERC grantees for the management of their grants and try to act as a bridge between the Principal Investigator and Host Institution, and the ERC Executive Agency. In the course of 2012, we organised 12 training sessions for potential applicants. We have so far given information and assistance to about 2,500 interested researchers. In June 2012, we also organised an event in Rome for the ERC's five year anniversary celebration, which attracted about 500 attendants. APRE, in conjunction with the Italian Ministry of Research, periodically organises specific working groups related to FP7 and Horizon 2020, and the ERC has

been included as a topic of great interest for the Italian research landscape.

How do Italian researchers in general view the ERC?

The ERC grants are recognised as the most prestigious European grants. In particular, the Starting Grant is perceived as an excellent opportunity to boost the careers of highly promising young researchers. The bottom-up approach and the possibility to set up a very high level research proposal independently gives researchers a great deal of freedom for building up their research groups and in choosing the most appropriate institution. So far, Italian researchers have demonstrated a great interest in ERC grants, and the calls often attract a very high number of submissions from research talent in Italy . As a result, Italy hosts a fair number of ERC grantees. However, a remarkable percentage of Italian Principal Investigators are currently carrying out their ERCfunded research outside Italy. Unfortunately, this brain drain is mainly caused by some national and institutional constraints and bureaucracy, which directly influence the careers of researchers staying in the country.

ERC grants and Italy (after the completion of ten calls)

- > 296 Italian researchers have received an ERC Starting or Advanced Grant, representing a total of €425 million
 - 170 work in Italy and 126 work abroad
- > 190 researchers based in Italy have been selected for funding, representing a total of €276 million
 - 170 are Italian and 20 are non-Italian nationals
 - 95 grantees based in Italy are in the Physical Sciences and Engineering domain, 46 in Life Sciences and 49 in Social Sciences and Humanities
 - 115 Italy-based grantees have Starting Grants and 75 hold Advanced Grants
 - 4 grantees have been awarded an ERC Proof of Concept Grant

The complete list of ERC-funded projects in Italy is available on the ERC website



Did you miss this?

Nobel laureates rally against research cuts

A widespread campaign started in October when 44 Nobel laureates and 6 Fields medallists signed an open letter addressed to EU leaders, against research budget cuts. Young researchers rallied in support and launched a petition (http://no-cuts-on-research.eu/index.php?file=list2.php), gathering 150,000 signatures to date. In November, a delegation led by Nobel laureates, presented the letter and petition to the Presidents of the three EU institutions to carry the cause forward.

To find out more, click here

Demand for Starting Grants up by 50%

The trend of increased demand for the ERC grants continues for the third successive year. In the sixth ERC Starting Grant competition for 2013 the number of applications rose with over 50% compared to the corresponding group in last year's Starting Grant call. These submitted proposals are now being assessed by the ERC's peer review evaluation system, and the call results will be published in 2013.

To find out more, click here









ERC Synergy Grants fund 11 projects

In the first call for the ERC Synergy Grants, a new pilot scheme, 11 projects have been funded involving 38 scientists. The scheme aims to enable outstanding researchers and their teams to bring together complementary skills, knowledge and resources to jointly address research questions that go beyond what could be achieved without such synergies. Each grant unites two to four Principal Investigators and is on average worth €11.5 million.

To find out more, click here

ERC at European Gender Summit

As part of its efforts to encourage the best female scientists in frontier research, the ERC participated in the European Gender Summit (http://www.gendersummit.eu/) 2012 in November in Brussels. Professor Teresa Lago, ERC Scientific Council member and Chairwoman of the Gender Balance Working Group, spoke on the integration of gender equality recommendations in ERC's daily practices.

To find out more, click here



Excpected dates for the upcoming calls

Call for proposals	Publication date	Deadline	Funding
ERC 2013 Synergy	10 Oct 2012*	10 January 2013*	Up to €15 Mio per grant
ERC 2013 Consolidator Grant	7 Nov 2012*	21 February 2013*	Up to €2.75 Mio per grant

Stay informed via the ERC website and the Participants' Portal



ERC upcoming events

14/02 - 18/02/2013	AAAS Annual Meeting 2013	Boston, US	ERC President Helga Nowotny speaks alongside Chief Scientific Adviser to the Commission President Anne Glover and Director-General of DG Research and Innovation Robert-Jan Smits. Scientific session by ERC grantees. Press briefing.
23/2/2013	MIT - European Career Fair (ECF)	Boston, US	ERC session and stand
28/02- 01/03/2013	Widening Participation Event	Klosterneuburg, Austria	Presence of ERC President Helga Nowotny and ERC grantees.





