European Commission

Horizon 2020
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for Research & Innovation

Annual Report on the ERC activities and achievements in 2014

Prepared under the authority of the ERC Scientific Council

RESEARCH & INNOVATION POLICY

European Research Council

Established by the European Commission

EUROPEAN COMMISSION

Directorate-General for Research and Innovation
ERC EA — The European Research Council Executive Agency
Unit A.2 — Communication

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European Commission, ERC Executive Agency

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Commissioner's introduction

The ERC has flourished since it was set up by the EU less than a decade ago. The unique nature of its mission – to promote superior, frontier research in Europe through competitive funding – embodies the steady pulse of our primary investment.

As a Union of twenty-eight countries, we are charged with creating the most favourable conditions for our community's future prosperity. We are obliged to uphold the most transformative means we have at our disposal. We have to invest more and more in the mainspring of modernity, that is to say we must always invest in fundamental research, science and innovation.

The ERC was the first truly pan-European, scientifically independent body to provide EU grants to cutting edge research. Since its inception, the ERC has been dedicated to giving our most talented minds the chance to explore their theories in complete freedom and with total independence.

This Annual Report presents the activities and achievements of the ERC in 2014, the year in which three more of its leading minds became Nobel laureates and two Fields medallists. Through its vital work, the ERC is helping to generate a wealth of brand new knowledge, an abundance of fresh ideas, contemporary understanding and insight. This is more than a remarkable accomplishment. It is a deserved source of pride among our scientific and political communities.

The ERC brand has almost limitless potential, it epitomises the core values of science diplomacy and provides a strong basis for networking Europe among our international partners. It upholds a standard of excellence that will inspire new discoveries and revitalise industry. Discoveries that will illuminate the path towards the improvement of our citizens' lives, the sustainability of our planet and the protection of its growing population.

Ultimately, the ERC's achievements are down to the many, outstanding scientists it has attracted from across our continent and beyond. Its staggering accomplishments are a direct result of the tireless, enthusiastic contributions of the scientific community, and our mutual commitment to safeguarding this jewel in Europe's crown of scientific leadership.

I would like to thank the ERC and its Scientific Council and all the staff that ensures the efficient work of the institution. We are all very thankful for all the efforts they have made thus far, in becoming one of the great successes of FP7 to worldwide recognition. I will be doing all I can, to create the best conditions for this success to continue under Horizon 2020 and well into the future. To advance as a competitive global partner, we need the world's best to make Europe their laboratory, to make Europe the destination of choice for the world's most ground breaking scientists, researchers and innovators.

Carlos Moedas

European Commissioner for Research, Innovation and Science

Personal message from the ERC President

This Annual Report covers the activities of the European Research Council (ERC) in its first year under Horizon 2020, the framework programme set up by the European Commission for the support of research and innovation over the period 2014-2020.

It is also the first year of my mandate as President of the ERC. Being in charge of an institution that, in just seven years, has established itself as a reference on the international research scene is a real challenge. The success of the ERC is so obvious that, when asked what I would like to change in it, my tendency is to say that my main concern is to make sure that the basic ingredients that brought the ERC to this point persist. What are they? A simple framework for researchers to submit applications in complete freedom and a high level system to evaluate them on the sole basis of quality; and then an efficient management system by the Executive Agency (ERCEA) in charge of ERC operations, that empowers the researchers vis-à-vis their Host Institutions, signatories of the contracts with the ERCEA. The ERC Scientific Council also decided to stage the calls in three categories: Starting Grants (for researchers between two to seven years after their PhD), Consolidator Grants (seven to twelve years after PhD) and Advanced Grants, and to allocate about the same amount of money to each. As a result of this deliberate choice of policy by the ERC Scientific Council, about two thirds of the funding goes to researchers at an early stage of their careers.

Horizon 2020 provides the ERC with an annual budget of EUR 1.7 billion for the years 2014, 2015 and 2016 — a significant amount that is slightly lower than the budget put at its disposal in 2013. Later, a steady increase from 2017 to 2020 will bring it to EUR 2.2 billion.

Technically, the changes that Horizon 2020 brings to the ERC are cosmetic and limited to the IT environment. However, the fact that the Horizon 2020 legislation was signed only at the end of 2013 created some organisational difficulties to the ERCEA that was not able to ensure the evaluation of all three calls during 2014. The Advanced Grant, the last call to be launched in 2014, will be handled in early 2015, leaving less time for evaluation which translates into a lower number of grants awarded.

Independently, in 2014 the Scientific Council introduced more severe restrictions for reapplication, to keep under control the increasing number of proposals received. The effect of such restrictions needs to be monitored over the years.

Meeting ERC grantees in several countries in Europe has been a great opportunity for me to appreciate the impact of the programme on the organisation of their research. They are pushed to imagine and implement ambitious projects. Many of them pointed out the remarkable freedom they are enjoying. They can choose their collaborators and embark on an adventure with a much longer perspective than the one offered by traditional grants. Increasing competition between European countries and institutions to host ERC grantees is also leading to major reforms in the way research funding is allocated, with policymakers at national, regional and local levels becoming more aware of the role of high quality research as driver of development.

Along this line, another interesting feature of 2014 worth pointing out is the remarkable success of the Proof of Concept grant scheme introduced in 2011 by the Scientific Council. It allows ERC grant holders to claim further support to accompany them in their efforts to bring closer to markets and/or to societal needs some developments of their ERC-funded research. Many more applications were submitted this year, and a large number of them of a quality judged very positively by the evaluators, all highly competent experts in research valorisation.

All this shows that the ERC has a truly transformative effect, making Europe a more attractive place both for Principal Investigators and for people who join ERC research teams. This brings a number of highly competent non-Europeans to Europe, but also prevents some of the most talented European researchers from leaving the continent for others where research is presently developed aggressively.

The Scientific Council is committed to discouraging all attempts to alter the principles of the ERC as the scientific community endorses the ERC fully and appreciates the new opportunities it offers.

Prof. Jean-Pierre Bourguignon
ERC President and Chair of its Scientific Council

Highlights - 2014 in review

1.1 Mission

The European Research Council (ERC) was created under the 2007-2013 European Communities framework programme for research and development (FP7) and it is continuing its activities pursuant to the Specific Programme implementing the new framework programme Horizon 2020. Composed of an independent Scientific Council and a dedicated implementation structure in the form of an Executive Agency (ERCEA), the ERC has rapidly gained wide recognition as a world-class research funding agency and has attained an excellent reputation within the scientific community across Europe and worldwide.

Inspiring other funding organisations and policymakers, and having established itself as an essential component of the Union's research funding landscape, its label of excellence has raised the level of science across Europe. Supporting the best researchers in any field of research on the sole criterion of scientific quality aiming at excellence is expected to have a direct impact through advances at the frontier of knowledge, opening the way to new scientific and technological results that can lead to innovation.

Three grant schemes designed by the Scientific Council form the core of its activities: Starting Grants (StG) support researchers at the early stage of their careers, with the aim of providing working conditions that enable them to become independent research leaders; Consolidator Grants (CoG) support researchers who are at the early stage of their careers, but very often already working with their own group (while the 'starters' are usually still in the process of setting up their own research group); Advanced Grants (AdG) are designed to support outstanding and established research leaders by providing the resources necessary to enable them to continue the work of their teams in expanding the frontiers of scientific knowledge.

An increasing part, though still modest of the ERC budget is dedicated to the Proof of Concept (PoC), which offers ERC grant holders the possibility to establish the innovation potential of ideas stemming from their existing ERC grants. This funding scheme is aimed at helping them to bridge the gap between research and social or commercial innovation.

The ERC Work Programme [1], which is established annually by the Scientific Council and adopted by the European Commission, aims at reinforcing excellence, dynamism and creativity in European research by providing attractive long-term funding to support the best investigators and their research teams to pursue ground-breaking, high-risk, high-gain research. Research funded by the ERC is expected to lead to advances at the frontiers of knowledge and to set clear and inspirational target for frontier research across Europe.

By promoting excellence, the ERC has a fundamental role in reinforcing and making more coherent the whole system of research and innovation. Its curiosity-driven, competitive approach has allowed the ERC to fund a broad project portfolio, including projects which address current grand challenges and fundamental questions. The ambition is to lay the foundations for solutions to future, unpredictable challenges that European society is facing or may face.

[1] The ERC annual Work Programme is the legal document which sets out how the ERC will allocate its funding for the corresponding year.

1.2 Main outcomes in 2014

The year 2014 marks the start of Horizon 2020, the new EU framework programme for research and innovation for the period 2014-2020. The ERC's budget in Horizon 2020 is EUR 13.1 billion over a period of seven years. This represents around 17 % of the entire Horizon 2020 budget.

The budget implemented by the ERC under the previous framework programme (in the FP7 'Ideas' specific programme) was EUR 7.5 billion over a period of seven years (2007-2013). As ERC came into existence in 2007, the budget grew linearly from a very small amount to 1.7 billion Euro in 2013, representing around 15 % of the entire FP7 budget.

In the implementation of the FP7 programme in 2014, payment credits of EUR 915 million were fully executed. In 2014 Horizon 2020 commitment credits of EUR 1.7 billion and payment credits of EUR 8.3 million were also fully executed.

In December 2013 and during 2014, the ERC launched the calls for proposals announced in its 2014 Work Programme for all of the main ERC schemes: Starting, Consolidator and Advanced Grants; and for Proof of Concept. The first three competitions yielded a total of 8 084 proposals, representing a 14 % decrease compared to 2013 (2 % decrease for Starting, 31 % decrease for Consolidator and 5 % decrease for Advanced Grant). 375 Starting and 372 Consolidator projects have been selected for funding through a rigorous peer review process. The proposal evaluation was divided as usual into 25 different evaluation panels per call, involving more than 1000 panel reviewers and over 6500 external reviewers.

At the same time 120 Proof of Concept projects have been selected for funding following the two 2014 deadlines of the call.

A glance at the list of ERC grant holders who received international scientific prizes and awards in 2014 [2] provides a good example of how ERC funding schemes have attracted top researchers in this year too. Several ERC grantees have received prestigious international scientific prizes and awards, including three Nobel Prizes and two Fields Medals. The ERC counts eleven Nobel laureates and five Fields medallists among its grantees.

ERC-funded projects are highly productive and ERC-funded research is largely present in high-impact journals. By December 2014, the ERCEA collected more than 33 000 articles and reviews acknowledging ERC funding from Thomson Reuters' Web of Science [3]. 7 % of these publications are among the top 1 % most highly cited in their scientific discipline and year of publication.

The efficient operation of all the calls during 2014 underlines the successful organisational development of the ERCEA, which at the end of 2014 counted 389 staff members.

[2] http://erc.europa.eu/projects-and-results/prizes-and-awards/prizes-and-awards-2014
[3] An online subscription-based scientific citation indexing service maintained by Thomson Reuters that provides a comprehensive citation search.

1.3 Highlights – 2014 in review

The ERC celebrates its 4 000th funded researcher

The 4 000th top scientist funded by the ERC to pursue frontier research in a European Host Institution (HI) was announced in March 2014.

Dr Manuel Arruebo, is an Associate Professor in Chemical Engineering at Zaragoza University in Spain. He is one of the 313 researchers selected out of 3 673 applicants in the 2013 ERC competition for Consolidator Grants. Previously, he was awarded one of the coveted 'Ramon y Cajal' contracts from the Spanish Government. He has an international profile and has worked as a postdoctoral researcher at the Massachusetts Institute of Technology (MIT), the University of Colorado at Boulder and the Hong-Kong University of Science and Technology.

The research of Dr Arruebo and his team may one day put an end to the use of conventional analgesics for patients with chronic pain. They are looking at a new drug delivery system to improve the daily lives of patients. A new device would inject nano-capsules capable of releasing drugs on-demand and remotely, removing, in many cases, the need for surgery.

Relieving chronic pain with nanodrugs

Chronic pain affects millions of people worldwide and the current treatments are often inadequate: they don't adapt either to the patients' changing day-to-day physical activities or to the level of pain relief they require. With the support of the ERC grant, Dr Arruebo intends to overcome these limitations by developing a pioneering method of drug delivery — which is reversible and releases drugs only where and when they are needed. The drugs take the form of injectable and biodegradable nano-capsules released in response to a specific stimulus — such as heat, light or electrical or magnetic fields. In the course of the project, Dr Arruebo will test the biocompatibility and efficacy of these nano-capsules in vitro and in vivo. The new technology will offer better care for the many patients who need an on-demand release of their prescribed medication: sufferers from diabetes, hormonal disorders, sciatica, or patients receiving localised chemotherapy treatments, for example.

ERC grantee: Manuel Arruebo

Host Institution: University of Zaragoza (Spain)

ERC project: Biomedical Applications of Plasmonic Nanoparticles (NANOHEDONISM)

ERC call: Consolidator Grant 2013

ERC funding: EUR 1.5 million for five years

The ERC meets world leaders in Davos 2014

In January 2014, the ERC attended the World Economic Forum (WEF) in Davos, Switzerland. The forum, which has taken place annually since 1971, is one of the most well-known platforms for leaders from governments, business, civil society and academia to discuss pressing global issues. With the overarching goal to 'improve the state of the world', the forum this year gathered over 2 500 participants.

The ERC attended the 2014 meeting with Sir Tim Hunt, Nobel Laureate and ERC Scientific Council member, and Prof. Helga Nowotny, ERC President until the end of 2013, both representing the ERC's newly appointed President, Prof. Jean-Pierre Bourguignon, who was unable to travel due to an incapacitating injury.

The ERC delegation also included two outstanding scientists — ERC Advanced Grant winner Prof. Wolfgang Lutz, Founding Director of the Wittgenstein Centre for Demography and Global Human Capital, and Prof. Dr Elizabeth Blackburn, Morris Herzstein Professor in Biology & Physiology at the University of California in San Francisco and Nobel laureate for Physiology or Medicine (2009).

Under this year's Davos theme, 'The Reshaping of the World: Consequences for Society, Politics and Business', the ERC took part in six sessions and organised a press conference on the theme of investing in R & D and the most creative ideas in and beyond times of budgetary restraint.

Also attending the WEF meeting, Belgian Prime Minister Elio Di Rupo applauded the ERC for its landmark role in science and innovation in Europe in the context of the ERC press conference.

The ERC at AAAS

In February 2014, for the seventh year, the ERC participated in the Annual Meeting of AAAS (American Association for the Advancement of Science), the world's largest and most influential general scientific society. This year's conference took place in Chicago with the theme 'Meeting Global Challenges: Discovery and Innovation'.

At the AAAS meeting, the ERC was represented by President Prof. Jean-Pierre Bourguignon, two ERC Scientific Council members, Prof. Klaus Bock and Prof. Nils Chr. Stenseth, as well as two ERC grantees. The President explained how the ERC has been able to accomplish solid achievements by building on its close relationship of mutual trust with the scientific community and the European Commission. The ERC aimed to encourage top scientists to carry out innovative and high-risk research in Europe.

The ERC took part in one public policy symposium, one exhibitor-sponsored workshop, two press briefings and several side-events. Topics highlighted by the ERC at the event included everything from ERC grant schemes to the evolution of spotty fish and the use of nanowires for solar energy — subjects researched by ERC grantees Prof. Walter Salzburger (Starting Grant 2007 and Consolidator Grant 2013) and Prof. Anna Fontcuberta i Morral (Starting Grant 2009), both present in Chicago.

The ERC at the Innovation Convention

In March 2014, the ERC took part in the second edition of the Innovation Convention, an essential part of the Innovation Union flagship initiative, the European Union strategy aiming to create an innovation-friendly environment that makes it easier for great ideas to be turned into products and services stimulating economic growth and creating jobs.

The Convention provides a platform to debate policies that will contribute towards the building of a research and innovation eco-system in Europe. The event, organised by the European Commission's Directorate-General for Research and Innovation, gathers a large audience including high-level policymakers, top researchers, business leaders and the general public.

ERC President Prof. Jean-Pierre Bourguignon shared his insights in a session on 'Global challenges, global collaboration' alongside two research ministers amongst others. The ERC was also represented by Scientific Council members Dame Athene Donald and Prof. Reinhilde Veugelers, as well as several grantees, including Nobel laureate Prof. Serge Haroche, all contributing to the discussion in various sessions of the event.

Creation of an Expert Group on Monitoring and Evaluation

In March 2014, the ERC appointed an Expert Group for Programme Monitoring and Evaluation with the following tasks:

- to advise the ERC in the further development of its Monitoring and Evaluation Strategy in the context of Horizon 2020;
- to assist the ERC in the design of studies and analysis which could be commissioned externally or undertaken internally by ERC;
- to conduct small scale analysis and studies on selected topics based mainly on the ERC's Monitoring and Evaluation strategy, but also taking into account good practice and experience from monitoring and evaluation activities of national research systems, in particular regarding the ERC's complementarity and added value.

The group consists of ten experts with broad experience in science evaluation: Prof. Paula Stephan, Dr Ghislaine Filliatreau, Prof. Christine Kosmopoulos, Dr Terttu Luukkonen, Prof. Patrice Laget, Dr Félix de Moya-Anegón, Prof. Gunnar Öquist, Dr Michael Stampfer, Prof. Otto Toivanen and Prof. Anthony Van Raan. It will be active until 31 October 2015 and will work under the guidance of the Scientific Council Working Group on key performance indicators.

The ERC at the European Business Summit

The European Business Summit (EBS) is an annual event gathering influential individuals such as EU Commissioners, Prime Ministers, business leaders and policymakers to debate and develop business strategies that can help to shape Europe's future. More than 1 500 high-ranking participants attend the meeting every year.

In May 2014, to bring the voice of science into the debate, the ERC took part in the summit for the first time, where policymakers and business leaders presented their ideas towards a more competitive and

better-functioning Europe, and discussed possible political scenarios ahead of the 2014 European and national elections.

Prof. Jean-Pierre Bourguignon spoke at the plenary session 'How Does Europe Win the Global Race', which addressed Europe's competitiveness in a world of emerging economies. He highlighted the need to push the frontiers of knowledge and to back top, young talent in Europe to help them become the next generation of world-class research leaders. He underlined that the ERC plays a central role in supporting high-risk, high-gain science, which the private sector is less inclined to invest in as it cannot appropriate all the benefits and has highly unpredictable results.

New Identification Committee

In May 2014, European Commissioner for Research, Innovation and Science Máire Geoghegan-Quinn appointed seven high-level scientists to identify the future members of the ERC Scientific Council. The Committee consists of seven highly respected personalities in European research:

- Sir Leszek Borysiewicz (chair) — Vice-Chancellor, University of Cambridge, UK
- Alice Dautry — Institut Pasteur, France
- Hans-Joachim Freund — Fritz-Haber-Institute, Max-Planck-Society, Germany
- Louise J. Gunning-Schepers — University of Amsterdam, the Netherlands
- Xavier Vives — IESE Business School, University of Navarra, Spain
- Joseph Weiler — European University Institute, Italy
- Agnieszka Zalewska — Henryk Niewodniczański Institute of Nuclear Physics of the Polish Academy of Sciences, Poland

The mandate of this independent committee is firstly to identify members for the renewal of the ERC Scientific Council membership in early 2015 and secondly to maintain a pool of candidates for future membership of the Scientific Council. Based upon the suggestions of the report prepared by the Committee, the European Commission would appoint new members of the Scientific Council in early 2015.

The ERC at the Global Research Council

Prof. Jean-Pierre Bourguignon represented the ERC at the 3rd Annual Meeting of the Global Research Council (GRC), which took place in Beijing, China from 26 to 28 May 2014. The Chinese Academy of Sciences (CAS) and the National Natural Science Foundation of China (NSFC) were the host organisations. The Natural Sciences and Engineering Research Council of Canada (NSERC) was the co-host organisation. This was a high-level event bringing together the heads of around 60 research councils from around the world as well as observers from organisations such as AAAS, ESF, EUA, LERU, Nature and WEF.

The main topics for discussion were the implementation of the Action Plan on Open Access to Publications (which had been agreed in 2013) and a Statement of Principles and Actions on Shaping the Future: Supporting the Next Generation of Researchers. The GRC agreed to repeat the review of open access implementation periodically and requested regular updates on progress at the Annual Meetings by selected countries or groups of countries. The GRC participants also agreed on a statement on promoting

the attractiveness of research careers for new talent, providing opportunities for professional career development for researchers, and considering the types of skills and training that will be needed by researchers over the coming decades. The summit had been prepared at a set of regional meetings, including a meeting in Paris to which the ERC contributed.

The Governing Board of the Global Research Council selected Japan to host the 4th Annual Meeting of the Global Research Council in 2015. The Japan Society for the Promotion of Science (JSPS) will be the host organisation. The National Research Foundation (NRF) of South Africa will be the co-host organisation. The topics to be discussed will be research funding for scientific breakthroughs and building research and education capacity.

ERC Proof of Concept grant holders present their ideas to investors

In July 2014, nine ERC grantees holding PoC grants were first trained and then invited to present their ideas to investors in three-minute long 'elevator pitches' to a network comprising leading innovators in industry and academia as well as some venture capitalists. This is the second event of this type organised by the ERC in collaboration with the media company ScienceBusiness. The first took place in February 2013.

The projects covered a broad range of technologies, from 3D-printing tools for nanostructures, to enzymes able to recognise nucleotide sequences in RNA molecules.

The challenge for the PoC grantees was to present what they had done and why it was commercially interesting in three minutes (strictly timed). The session was chaired by experts who did this with a timer and good humour.

The event was preceded by a training session the day before with a few experts in communicating to investors. All grant holders invited considered this to be of high value since most of them are certainly trained in communicating science, but might not be expert in presenting their projects to industry and investors.

The PoC grant holders were also invited to engage in a broader policy discussion about the slow and risky process of getting new ideas to the market in a debate with other participants of the event: ERC President Jean-Pierre Bourguignon, Peter Gudmundson, President of the Royal Institute of Technology, Laura Montagna, Director of SKF's Engineering & Research Centre, and Robert-Jan Smits, Director-General of DG Research and Innovation at the European Commission.

Exploring Open Science through events with external stakeholders

2014 saw many important developments related to Open Access, Open Data and more generally Open Science, both in terms of policy developments across Europe and in practical terms through the launch of Horizon 2020, which makes open access to publications mandatory. In order to stay abreast of this rapidly evolving area, the Working Group on open access of the ERC Scientific Council organised or was otherwise involved in a wide range of activities with relevant external stakeholders.

In the framework of the ERC–DNRF Joint Workshop 'Fostering academic excellence in a changing world' which took place in June as satellite event to ESOF 2014, a session on open access and scientific excellence was organised.

Later on, in September, a two-day workshop on research data management and sharing attracted more than 140 participants from across Europe. Other events included several seminars with representatives from specific open access infrastructures such as the data repositories Dryad and figshare, from the OAPEN foundation that is running a platform for open access books, and from the Reproducibility Initiative. In cooperation with STM, the International Association of Scientific, Technical & Medical Publishers, two further seminars took place, one on the pricing of journals, the other on long-text format publishing in a digital environment.

The ERC and gender equality

Since its beginning, the Scientific Council has considered gender balance an important objective of the ERC and has established a dedicated working group to monitor it. The group's work is based on the fundamental view that women and men are equally able to perform frontier research at the highest level.

Despite efforts to increase their number, applications to ERC calls from female researchers continue to be rather low, representing an overall 25 % of all applications in the ERC calls 2007-2013, accompanied also by a relatively low success rate of 8 %.

In an attempt to continue tackling these low numbers, the ERC Scientific Council, during its plenary meeting in June 2014, adopted the ERC Gender Equality Plan 2014-2020. The document, drafted by the working group on gender balance, is intended to take further the objectives of the 2007-2013 ERC Gender Equality Plan. The following six main aims are identified for the period 2014-2020:

i) To continue raising awareness about the ERC gender policy among potential applicants;

ii) To improve the gender balance among researchers submitting ERC proposals in all research fields and within the ERC teams;

iii) To continue identifying and removing any potential gender bias in the ERC evaluation procedure;

iv) To continue monitoring possible differences in gender specific careers and academic posts, following the ERC grants;

v) To embed gender awareness within all levels of the ERC processes — from creating awareness about the ERC to grant signing — while keeping the focus on excellence;

vi) To strive for gender balance among the ERC peer reviewers and other relevant decision-making bodies, aiming at a minimum participation of the underrepresented gender while taking into account the situation in the field of the action.

Moreover, the working group on gender balance commissioned an independent study, the ERCAREER project, to look into the differences and similarities in the career paths and patterns of male and female ERC grantees. The idea for the study originated from the Gender Equality Plan 2007-2013.

Within the context of the project, career patterns and conventions in science were studied and CVs were analysed. The project team ran also a career history survey and conducted interviews with ERC applicants and grantees. A main objective of the study was to map the road to excellence, by looking at unconventional careers and to chart the institutional role in shaping research careers for those with care responsibilities.

Based on the research conducted, in 2014 the study formulated a number of recommendations, including the following:

• Optimise and standardise the career information section in the ERC application forms;

• Improve the allowance for and communication about unconventional careers;

• Optimise exemption and extension calculation and decision-making processes;

• Optimise the review process with more consideration for dual careers.

The ERCAREER project suggests also that the ERC maintains a dialogue with Host Institutions and through that dialogue incentivises employer excellence by promoting dual career policies and compensation policies for time to care for applicants and grantees.

The ERC Scientific Council has already implemented some of the recommendations by coming forth with a model CV template for applicants to use, improving exemptions and extensions calculation and providing targeted briefing to peer reviewers in which gender-related issues are explained.

The ERC at Summer Davos (China)

The WEF Annual Meeting of New Champions (AMNC), dubbed the 'summer Davos', took place in Tianjin, China in the second week of September 2014. The ERC was present with Prof. Jean-Pierre Bourguignon and Prof. Sierd Cloetingh, as well as 10 ERC Starting Grant holders.

The conference took place for the eighth time and gathered a record number of 2 000 participants largely from the private sector, but also from government and academia.

Thanks to Prof. Jean-Pierre Bourguignon being a 'mentor' of the AMNC — one of the eight VIPs of this conference — the ERC enjoyed very good visibility, including on the press side, with two press conferences.

Prof. Bourguignon met with high-level representatives of government such as the Chinese Premier Li Keqiang (together with CEOs), the Chinese Minister of Science and Technology Wan Gang, the former Japanese Minister of Science and Technology Ichita Yamamoto, as well as a number of CEOs and Klaus Schwab, Founder and Chairman of the WEF. He took part in several sessions, including one on the 'Global Science outlook', featuring also Thomas R. Insel of the US National Institute of Mental Health; Chen Zhangliang, Vice President of the China Association for Science and Technology; Ichita Yamamoto former Japanese Minister for Science and Technology, and Tan Chor Chuan, President of the National University of Singapore.

Prof. Cloetingh also had the opportunity to represent the ERC and its role in innovation and to explain the PoC scheme in two different, very interesting sessions, and in particular at a session on 'New

Business Models for Science'. The section aimed at defining the emerging new business model for science by building understanding of the various trends that describe the shifting nature of how science is funded and rewarded; and at describing roadblocks that delay the transfer of technology from the R & D labs to the market and society, and strategies for overcoming them.

Fields Medals to ERC grant holders

In August, the two mathematicians connected to Europe being awarded the 2014 Fields Medals were ERC grantees: Prof. Artur Avila (Brazil-France), an ERC Starting Grant holder since 2010, and Prof. Martin Hairer (Austria) selected for funding under an ERC Consolidator Grant in 2013. They received the prize respectively for their work on dynamical systems and probability, and on stochastic analysis. The medals were announced at the International Congress of Mathematicians (ICM) taking place from 13 to 21 August in Seoul, South Korea.

Nobel Prizes to ERC grant holders

On 6 October, the 2014 Nobel Prize in Physiology or Medicine has been awarded with one half to John O´Keefe and the other half jointly to May-Britt Moser and Edvard I. Moser, for their discoveries of cells that constitute a positioning system in the brain. Professors Edvard I. Moser and May-Britt Moser, from the Norwegian University of Science and Technology in Trondheim, both hold ERC Advanced Grants for their research in neuroscience.

A week later, the 2014 Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel was awarded to Prof. Jean Tirole, an ERC Advanced Grant holder, for his work on examining competition, and analysing how large companies should be regulated to prevent monopoly behaviour and protect consumers.

This year's Nobel Prize awards follow that of two ERC grantees in 2010 and 2012. In addition, the ERC is currently funding six researchers who were already Nobel Prize laureates when they won their ERC grants.

2014 Nobel Prize

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Professor Edvard Moser
and Professor May-Britt Moser
Nobel Prize in Physiology or Medicine
for contributing to the discovery of the brain's inner "GPS system"

Professor Jean Tirole
The Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel
for his analysis of market power and regulation

With his ERC funding, Edvard Moser has studied the functionality of the grid cells by switching cells 'on' and 'off' and by testing how this affects the firing of nerve cells in rats. His research has been funded by the ERC since 2008 with two consecutive Advanced Grants.

Host Institution: University of Science and Technology in Trondheim (Norway)

ERC projects:

- Neural circuits for space representation in the mammalian cortex (CIRCUIT) funded with a EUR 2.5 million grant for five years, AdG 2008
- Cortical maps for space (GRIDCODE) funded with a EUR 2.5 million grant for five years, AdG 2013

May-Britt Moser's research focuses on the hippocampus, a region in the brain for memory formation. During her ERC-funded project, she has planned to identify key principles for the dynamic representation and retrieval of episodic memory in the mammalian hippocampus. Her research could have applications in healthcare, e.g. to better understand early memory deficits in infantile amnesia.

Host Institution: University of Science and Technology in Trondheim (Norway)

ERC project: Neural mechanisms for memory retrieval (ENSEMBLE) funded with a EUR 2.5 million grant for five years, AdG 2010

Bringing together behavioural economics with disciplines such as psychology and sociology, in his ERC project Jean Tirole explores cognition during the decision-making process. His research looks particularly at two factors related to limited awareness — cognition costs and motivated beliefs — and how they apply to economics.

Host Institution: Toulouse School of Economics (France)

ERC project: Cognition and Decision-Making: Laws, Norms and Contracts (COGNITION) funded with EUR 1.9 million for five years, AdG 2009

ERC and ERT jointly express concerns to European Commission 2015 budget cuts

On 7 November 2014, the ERC and the European Round Table of Industrialists (ERT) published for the second time a joint letter addressed to European leaders expressing their concerns about the significant cuts of payment appropriations proposed by the Council of Ministers to the European Commission's draft budget 2015, notably in key areas supporting growth such as research and innovation.

Both organisations shared the view that the prosperity of Europe depends on maintaining its competitive edge and securing global innovation leadership positions. Scientific discovery and technological progress will produce new products, processes and services, and new industries will be created in their wake.

They explained that Europe's R & D budget must serve the purpose of making Europe an attractive place for research, investment and entrepreneurship. The fact that the US, Japan and South Korea invest significantly more in research and development relative to GDP than the EU is a clear warning signal that Europe should not cut its R & D budget. Europe is at the forefront in many scientific areas, while maintaining industrial leadership across multiple sectors.

They concluded by underlying that the adopted budget for the EU's framework programme Horizon 2020 is already the bare minimum necessary for European research and industry, including SMEs, to meet the many societal challenges that face us at this time. Indeed, to keep the momentum and the perspective for European research and to put Europe back on a path of sustainable growth and employment requires avoiding any cut in the spending originally proposed for education, research and innovation.

The ERC at Euroscience Open Forum (ESOF)

ESOF, Europe's largest general science meeting, held its biennial gathering in June 2014 in Copenhagen (Denmark), bringing together researchers, entrepreneurs, innovators, policymakers and the public from all over Europe to discuss new discoveries and debate the direction that science is taking.

Headed by President Jean-Pierre Bourguignon (ESOF key note speaker), the delegation of the ERC at ESOF has been this year stronger than ever before: some 40 ERC grant winners highlighted their cutting-edge research at the event, on topics such as how to assess childhood risks of developing cancer; the usefulness of climate information for policymakers; the design of spaces for disabled people; how fossils can uncover the evolution of life; the relation between ecosystems and environmental management; the interdependence between species in nature; and the prediction of epidemics.

The ERC was also represented by three members of its Scientific Council: ESOF2014 Champion Prof. Klaus Bock, Prof. Nils Chr. Stenseth and Prof. Isabelle Vernos.

The ERC organised seven scientific sessions and a career workshop and took part in several debates.

Simulating epidemics spread on a global scale

With an ERC Starting Grant, Dr Vittoria Colizza has determined what information is required, and precisely how it should be used, to predict epidemics accurately and on a global scale. The project team analysed vast datasets on the spread of viruses and the movement of people throughout the world to identify how a virus spreads and what factors influence its advance.

The result was the Global Epidemic and Mobility Model (GLEAM) – a body of algorithms that predicts epidemics of viruses such as SARS, influenza and Ebola. The computer model can ultimately be used to create customisable scenarios, which accurately replicated the outbreak of the H1N1 virus in 2009 during testing.

This research has led to fruitful collaborations with European public health institutions during the emergence of epidemics. The project has enabled policy officials to make better plans for the threat of viral infections (influencing decisions on whether to deliver vaccinations or introduce travel restrictions, for instance), assess novel health emergencies in real-time, and predict the future unfolding of an epidemic.

Dr Vittoria Colizza was one of the ERC grant winners present at ESOF 2014.

ERC grantee: Vittoria Colizza

Host Institution: Fondazione Istituto per l'Interscambio Scientifico (I.S.I.), Italy

ERC project: Complexity and predictability of epidemics: toward a computational infrastructure for epidemic forecasts (EPIFOR)

ERC call: Starting Grant 2007

ERC funding: EUR 684,000 for five years

Research highlights

This part of the Annual Report showcases research across the three domains, Life Sciences; Physical Sciences and Engineering; and Social Sciences and Humanities. The section offers a brief analysis of a specific area of research in each domain. The aim is to provide a 'snapshot' of the kinds of grants the ERC funds. The research fields chosen this year are: neurosciences and neural disorders; systems and communication engineering; environment, space and population.

Overview of ERC projects in neurosciences and neural disorders

As many as 40 % of Europeans suffer from a mental or neurological disorder, according to the latest study by the European College of Neuropsychopharmacology and the European Brain Council. Neurological pathology is an important public health issue and research is vital for coping with it. Neuroscience is a fast evolving field. Studying and understanding the functioning and the pathology of the nervous system has improved our capability to better analyse, diagnose and treat human brain-related diseases and neurological and psychiatric disorders.

In the seventh framework programme, the ERC funded 216 projects in the research area of neurosciences and neural disorders, with a total budget of EUR 411 million (and, in total, more than 320 research projects with a strong neuroscience component have been supported by the ERC with a granted budget of almost EUR 600 million). The 216 projects can be subdivided into eight global themes: (1) sensation and perception; (2) neural networks; (3) neural development and plasticity; (4) neural cell communication and signalling; (5) neural bases of cognition; (6) neural bases of behaviour; (7) bases, diagnosis and treatment of neurodegenerative diseases and trauma; and (8) bases, diagnosis and treatment of mental disorders (see Fig. 2.1).

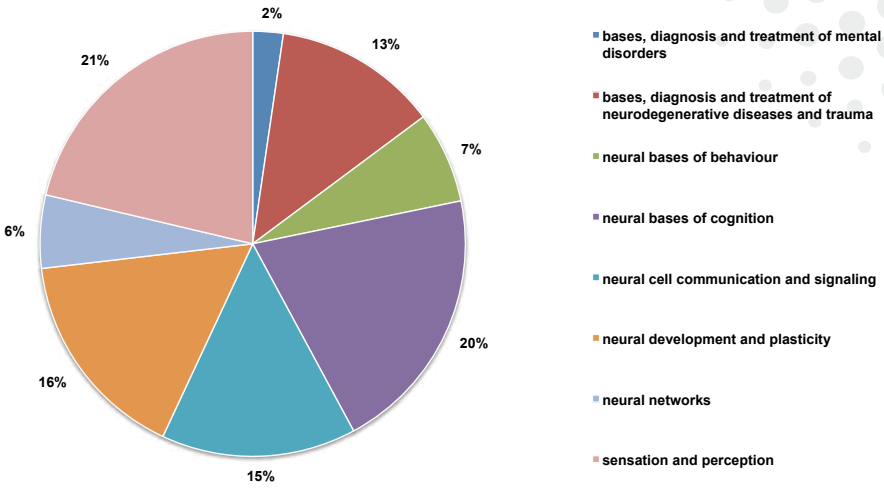
These projects aim to advance knowledge of the nervous system in health and disease conditions; contribute to the development of new cellular, molecular, genetic and animal models, and tools to investigate the activity of the nervous system at different levels in normal and pathological situations; and test new concepts, ideas and techniques before transferring them to patients. Many of the projects address research and public health challenges, and emerging areas in neurosciences. Over 20 Proof of Concept grants, which bridge the funding gap between research and the earliest stage of innovation, directly link basic research to industrial applications in the domain of innovative diagnostic or therapeutic tools for neurological diseases.

Questions addressed by ERC-funded projects deal with memory; information coding and processing in the brain; genesis and repair of the nervous system; neuronal circuits in drug addiction; cell and gene therapy for Parkinson's disease and Alzheimer's disease; computation models for man-machine interaction; novel diagnostic techniques for epilepsy or retinal degeneration and blindness. Many of the projects have applied research components and in 20 % of the cases the study is directly related to humans. Globally, the thematic areas are fairly balanced: diseases of the nervous system (15 %), cognition and behaviour (27 %), cellular neuroscience (15 %), neural development and networks (22 %) and sensory perception (21 %).

Even though neuroscience can be considered a specific branch of biology, it has become a strongly interdisciplinary science that collaborates with many other fields such as chemistry, computer science, engineering, psychology or medicine. The research areas of neuroscience utilise approaches and techniques also used in other areas or adapted for use in neurosciences research, at the molecular, cellular, developmental, structural, functional, computational and medical levels. This diversity of aspects and the different interactions with other fields of science are indeed perfectly reflected in the large portfolio of neuroscience projects funded by the ERC.

In 2014, the Nobel Prize in Physiology or Medicine was awarded in the field of neuroscience to May-Britt Moser and Edvard I. Moser, and John O'Keefe '*for their discoveries of cells that constitute a positioning system in the brain*'. Professors May-Britt Moser and Edvard I. Moser, from the Norwegian University of Science and Technology in Trondheim, both hold ERC Advanced Grants for their research in neuroscience.

Figure 2.1: ERC funded projects in the area of neurosciences and neural disorders



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Exploring what happens in the brain when we are unconscious

How does the brain switch between different states of consciousness? Is the state of the brain during sleep the same as during anaesthesia or a coma? Understanding the brain mechanisms that allow conscious experience is one of the central unsolved problems in neuroscience. Identifying reliable "signatures" of consciousness would have major clinical implications for general anaesthesia and patients in a coma, for example.

Prof. Stanislas Dehaene's ERC-funded project aims at identifying such "signatures" of consciousness from recordings obtained from different neuroimaging techniques. Prof. Dehaene's research team has studied the consciousness of patients while sleeping, awake and under anaesthesia. They found that the conscious processing of information coincides with a certain activity pattern in the brain, which is lost during sleep or under anaesthesia.

Prof. Dehaene's research also asked at which point in the development of children this kind of conscious processing first occurs. Surprisingly, the team found that this signature can already be detected in two month old babies, whose brains are not yet fully developed. They then turned to studying consciousness in patients who were either in a coma, in a so-called minimally conscious state or in a vegetative state.

The research team investigated whether consciousness as determined by this signature is unique to humans. Prof. Dehaene performed neuroimaging on macaque monkeys and obtained the same result as in humans: the consciousness signature was detectable in animals that were awake, but was not apparent when the monkeys were anaesthetised. In future studies the team would like to investigate more distant relatives of humans and test whether rats also possess these signatures of consciousness. This would enable them to better understand the evolutionary origin of consciousness.

The project results have led to an ERC Proof of Concept grant, intended to help Prof. Dehaene realise his project's commercial potential and bring its results to market. Drawing on the research findings, the team is now developing a bedside monitor to detect a patient's consciousness in real time. With such a device, clinicians will be able to better classify patients with disorders of consciousness, from coma to vegetative state and minimally conscious state. The product in development is more reliable than existing commercial monitors of consciousness and could be used in particular to monitor patients under general anaesthetic. There is also potential for the device to be adapted for personal use in monitoring sleep quality or vigilance while driving, for example.

ERC grantee: Stanislas Dehaene

Host Institution: Atomic Energy and Alternative Energies Commission (CEA) (France)

ERC projects: Converging Criteria for Consciousness: Using neuroimaging methods to characterize subliminal and conscious processing (NEUROCONSC) + Automatic detection and monitoring of consciousness (CoMonIn)

ERC call: Advanced Grant 2009 + Proof of Concept grant 2013

ERC funding: EUR 2.5 million for five years + EUR 150 000 for one year

An alternative therapeutic approach for epilepsy

Epilepsy is a neurological disorder involving recurrent seizures caused by disruptions in the nerve cell activity in the brain. Untreated epileptic seizures are associated with a high risk of adverse neurological, cognitive, and psychological outcomes. Despite advances in medical therapies, pharmaceutical or surgical treatments that could control seizures have little or no effect for one third of patients.

Dr Antal Berényi, from the University of Szeged, advances the hypothesis that time-targeted and localised Transcranial Electric Stimulation (TES) could be used to interrupt abnormal neuronal activity in the brain, which could reduce the frequency and duration of seizures. This non-invasive, painless technique entails sending electric signals to specific parts of the brain through electrodes placed on the skull.

With his ERC grant, the young neuroscientist is performing in vivo experiments on rats to test TES in two types of seizures. Electric stimulation is applied on specific brain regions which have been identified in previous studies as focal points in the mechanism of epilepsy. This project is at the crossroads of different disciplines, combining neurophysiology, electronics and informatics, and employs unique and advanced methods such as high resolution recording and optogenetics, a cutting-edge technique to control brain activity with light.

The first findings are very promising and seem to confirm Dr Berényi's hypothesis. If successful, this research could significantly advance the understanding of the neural mechanisms involved in seizures and could pave the way for an alternative therapeutic approach for epileptic patients, complementing currently used treatments.

ERC grantee: Antal Berényi

Host Institution: University of Szeged (Hungary)

ERC project: Therapeutic Mechanisms and Long Term Effects of Directed Transcranial Alternating Current Stimulation in Epileptic Seizures (OSCILLINTERFERENCE)

ERC call: Starting Grant 2013

ERC funding: EUR 1.4 million for five years

Overview of ERC projects in systems and communication engineering

Research in the area of systems and communication engineering supports the science that may introduce a paradigm shift in areas such as healthcare, lighting, telecommunications, robotics, etc. In order to achieve this goal, significant advancements are necessary for the development of sophisticated components and systems that would fulfil today's and tomorrow's societal and industrial needs. This research intends to radically develop new concepts and technologies that will enable us to turn these new components and systems into affordable and sustainable commodities.

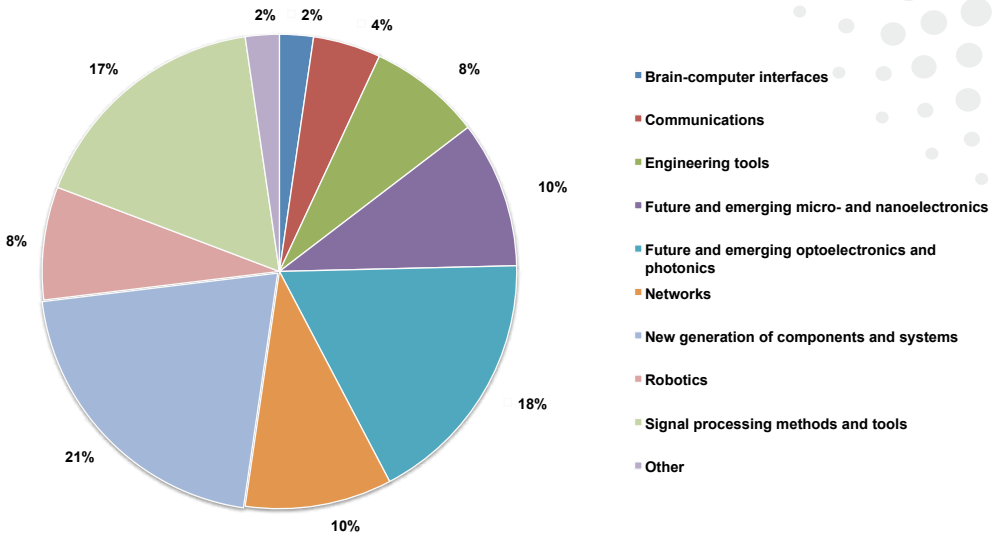
In the seventh framework programme, the ERC funded 130 projects in the research area of systems and communication engineering, with a total budget of EUR 240 million. These projects can be subdivided into nine major global themes: (1) brain-computer interfaces; (2) communications; (3) engineering tools; (4) future and emerging micro- and nanoelectronics; (5) future and emerging optoelectronics and photonics; (6) networks; (7) new generation of components and systems; (8) robotics; and (9) signal processing methods and tools (see Fig. 2.2). Several of the projects also pursue research that goes beyond these global themes and some also impact on the growth-enhancing policies set out in the Europe 2020 Strategy.

Research focused on the development of new micro- and nanoelectronics, optoelectronic components and systems has the potential to generate great societal impact. These developments aim to explore elementary concepts and technologies that can become as ubiquitous as mobile phones. These new technologies would allow the development of miniature, low-cost micro- and nano-systems which could also be used to monitor air or water quality, to detect disease markers in body tissues, to simulate critical signals in our body or other systems, etc. ERC-funded projects would allow these systems to become commonplace in the near future in every home, in every medical practice and, perhaps, as an implant in the body of some patients with chronic diseases.

Another area of intense research relates to wireless technologies as these are becoming our de facto mode of connectivity. Scientific advances will allow wireless networks to become more reliable, efficient and secure, and consequently respond to the ever increasing demand for more efficient bandwith use, enhanced security and higher transmission rates. Mobile speed is not expected to increase at the same pace as mobile traffic, making it crucial to fundamentally understand and explore new techniques and schemes that can complement existing practices. Recently, research was carried out in projects that can significantly reduce operational complexity and battery usage, and increase multi-fold the throughput and reliability of wireless communications.

These are just a few examples of the research outcomes in the area of systems and communication engineering, which encompasses a much broader range of fields of research within electrical engineering, micro- and nanoelectronics, communications and network technologies, robotics and man-machine interfaces, signal processing, and simulation and control engineering.

Figure 2.2: ERC funded projects in the area of sytems and communication engineering



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Microrobotics meets nanomedicine for improved eye surgery

With an aging population, Europe sees a rapid increase in the number of people affected by visual impairment and vision loss, accounting for a large impact on medical, healthcare and societal costs. The most common adult visual disorders are blindness, age-related macular degeneration (AMD), cataracts, diabetic retinopathy (DR), retinal vein occlusion (RVO), glaucoma and refractive errors. Surgical procedures for these disorders must be extremely precise and safe as the particular difficulty of eye surgery brings a high risk of damage to the retina.

Prof. Bradley Nelson, a specialist in the integration of microrobotics and nanomedicine, focuses on wireless microrobotic tools with medical and surgical applications. With this ERC project, he intends to develop new, minimally invasive diagnostic and therapeutic microtechnologies with concrete applications for eye surgery. This project builds on the recent advances in robotic assistance in surgical and diagnostic procedures as well as in precisely targeted drug delivery therapies. Prof. Nelson and his team have used wireless microrobotic devices to pursue a variety of specific ophthalmic therapies, including the delivery of drugs to the retina to treat AMD and RVO, two major causes of vision loss around the world and for which there is no effective treatment. The researchers also started animal trials on rabbits. The hope is to open the way to clinical trials on humans in the last year of the project, if the animal trials are successfully completed.

These novel procedures, based on the development and integration of many state-of-art technologies, could reduce the risks related to manual-performed eye surgery. They could also result in less trauma and faster recovery times for the patients, and could enable new therapies that have not yet been conceived. Beyond ophthalmology, the pioneering microrobotics therapies Prof. Nelson considers clearly have the potential to be applied in many systems in the body — such as the digestive, the circulatory, the urinary, the respiratory and the female reproductive systems. The project could lead to a major breakthrough in the use of microrobotics in medicine and surgery.

ERC grantee: Bradley Nelson

Host Institution: ETH (Switzerland)

ERC project: Microrobotics and Nanomedicine (BOTMED)

ERC call: Advanced Grant 2010

ERC funding: EUR 2.5 million for five years

The way we move: breaking the neural code of our movements

From the moment we decide to walk, what happens in our brain, our nerves, and our muscles that finally makes us take a step? Prof. Dario Farina aims to better understand the chain of electrical signals transmitted by our cells that leads to our bodies' movements. This succession of events can be seen as a neural code for movements, which Prof. Farina set out to decode with his ERC project.

He focuses in particular on bridging the gap between the detailed knowledge we have of what happens at the individual neuron (micro) level and our understanding of the overall mechanics of the human motor system at the macro level. At the micro level, scientists have been able to simultaneously analyse only a small number of cells during the movements of the people they were observing – they have been thus limited in identifying the effect of cell behaviour on the motor functions. Similarly, at the macro level, scientists have usually described the human movement with biomechanics, as a combination of joint moments acting on the skeletal segments, while neglecting the cell mechanisms that ultimately define a motor action.

Prof. Farina and his team have developed new bio-electrodes and methods for neuro-computation that will provide the link between the cellular mechanisms and the behaviour of the motor system. Placed on several points of the body (both non-invasively and implanted in muscles), the electrodes will record the muscular and nerve signals during natural movements as they happen. Once processed, these signals will help researchers to deduce a "neural code" that controls movements and the way this code is generated.

This code could then be used by man–machine interfaces that can reproduce it. One of the applications is the control of artificial systems that become a natural extension or a replacement of patients' lost limbs to re-establish missing motor functions.

Specifically, the team has explored applications for intuitive artificial prostheses for arms and hands tailored for each patient and directly connected to their nervous systems. A similar approach may also be used for other neuro-rehabilitation methods using robotic devices for rehabilitation training.

ERC grantee: Dario Farina

Host Institution: University Medical Center Goettingen (Germany)

ERC project: Decoding the neural code of human movements for a new generation of man-machine interfaces (DEMOVE)

ERC call: Advanced Grant 2010

ERC funding: EUR 2.4 million for five years

Overview of ERC projects in environment, space and population

Global challenges, such as energy consumption and climate change, demographic change and migration, and land use change, have a significant impact on society and the environment. These challenges are key issues for scientists, decision-makers and civil society.

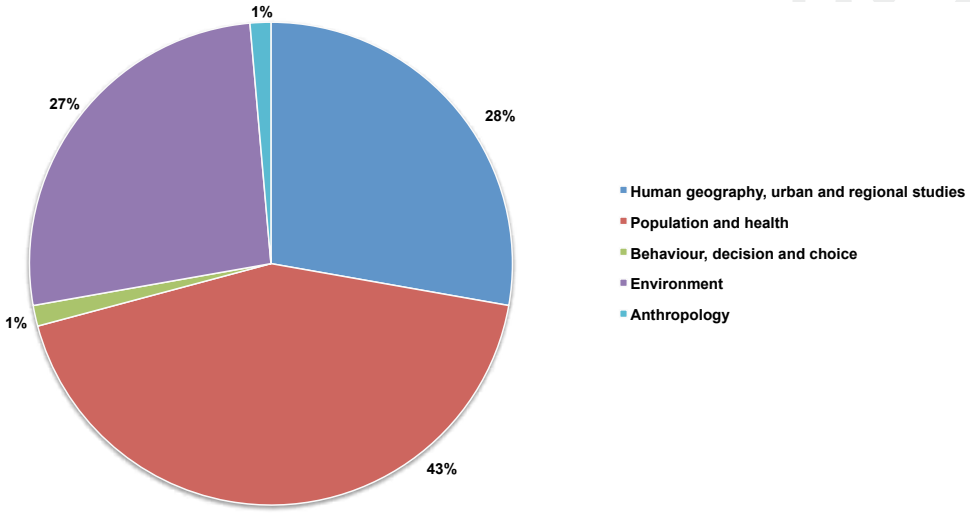
In the seventh framework programme, the ERC funded 72 projects in the research area of environment, space and population, with a total budget of EUR 110 million. These projects can be subdivided into three major global themes: (1) environment; (2) population and health; and (3) human geography, urban and regional studies (see Fig. 2.3).

The global theme of environment brings together projects in the areas of environmental and sustainability studies, and climate and environmental change, and addresses their impact on society. A large group of projects investigates the impacts of ecosystems or changes in ecosystems on society, including natural resource management and resilience. Socio-ecological systems, policy measures, energy, climate change and transport are often analysed in the projects. Several projects analyse questions of how economies, societies and individuals react to environmental changes and shed further light on adaptation and mitigation strategies. Economic, governmental and socio-cultural perspectives are considered. To address the complexity, most of the projects are interdisciplinary, in which researchers from natural sciences work together with social scientists. Around 70 % of these projects have a global dimension beyond Europe, the focus often being on Asia, Africa and America.

Projects under the global theme of population and health deal with demographic change, migration, globalisation and social studies of health. The most represented research area is family studies (a quarter of all projects in this global theme address this area) and includes studies on intergenerational relations, family formation and childhood. Social studies of health is a secondary area in around 20 % of projects in this global theme. Further, fertility, mortality and migration are important areas of study. With respect to research methodology, the majority of the population and health projects are quantitative and employ modelling. However, in individual cases, qualitative research designs are applied, life histories or surveys are used, prevention or clinical studies are conducted or an epistemological study is carried out. Most population and health projects cover Europe as their geographic reference; about one third take a global approach or work with data from Europe and countries from other continents; 10 % exclusively focus on African case studies.

The global theme of human geography, urban and regional studies covers projects in the fields of human and social geography (35 %), urban and regional studies (40 %), transport (20 %), spatial data analysis and geographical information systems (5 %). The projects under this global theme are usually interdisciplinary and have links to environmental change or health in some cases. The majority of projects look at spatial patterns, in particular, urban development trends; they cover different geographical scales and methodological approaches. Some projects focus on urban evolution and model development at a theoretical and global level, with a strong quantitative orientation (spatial

Figure 2.3: ERC funded projects in the area of environment, space and population



data analysis). Others look at the regional and local scale, and address global trends and their impacts on aspects of urban development in case studies, such as information and communications technology-driven, diverse and inclusive cities in multiple countries. In these cases, urban issues are studied by using a combination of quantitative and qualitative methods. Projects in the field of social geography often address urban challenges as well, sometimes at a neighbourhood scale, looking at minority groups, social inequalities and deprivation, sometimes more globally, for example, investigating the geographies of food. Most transport-related projects seek to improve transport models or traffic forecasting, or analyse transport networks and have links to behaviour economics and consumer choice. The projects under this global theme mostly focus on Europe but about a third extend their focus beyond Europe.

Strategies to prevent child abuse in sub-Saharan Africa

To date, 20 million children have been orphaned by HIV/AIDS, with 12 million of these in sub-Saharan Africa. An estimated further 70 million children in the sub-continent are living with AIDS-affected caregivers. Research shows that physical, emotional and sexual abuse of children is considerably higher in AIDS-affected families. Dr Lucie Cluver's ERC-funded research is developing evidence-based intervention strategies to prevent and reduce child maltreatment within AIDS-affected and other high-risk families.

Dr Cluver's research will develop intervention programmes in a real-world setting, starting in South Africa. Interventions will include a group programme for guardians of AIDS-affected children, peer-support meetings and greater access to social support. The intervention programmes will result from an innovative collaboration between scientists, policymakers, and civil society. The research is testing the efficacy of an intervention for reducing child abuse and exposure to transactional sex, and examines feasibility when implemented by community health workers at low-cost.

In 2013 researchers conducted qualitative research and expert consultation in order to develop an intervention programme, which has since been improved following tests with 300 participants in rural and urban sites in South Africa. These pilot tests showed that after the programme families reported lower rates of neglect and physical and emotional abuse. They also demonstrated reduced depression and adolescent aggressive behaviour, more positive parenting, and better parental monitoring and social support. A randomised controlled trial is to start in 2015 and, if successful, the World Health Organisation and UNICEF will expand the programme and trial it throughout low and middle income countries, including Tanzania, the Philippines, and an Arab-Israeli collaboration in the Middle East will also be formed.

This research addresses an issue which is highly stigmatised — in part due to the sensitivity of the topic — and has major implications for children in the developing world. It is also the first study to empirically test established theoretical predictors of child abuse in sub-Saharan Africa. The involvement of a variety of other stakeholders in the intervention process also represents a pioneering approach to this under-researched issue.

ERC grantee: Lucie Cluver

Host Institution: University of Oxford (United Kingdom)

ERC project: Preventing Abuse of Children in the context of AIDS in sub-Saharan Africa (PACASSA)

ERC call: Starting Grant 2012

ERC funding: EUR 1.5 million for five years

Making an impact: does environmental knowledge help individuals?

What is the role of culture in shaping human adaptation? Has culture enabled our species to adapt better to our surroundings? Or are our cultural habits maladaptive practices that will eventually result in the loss of skills and societal collapse? These are some of the questions addressed by Dr Victoria Reyes-García, who is leading a research team spread across the world. With an ERC Starting Grant, she and her team will empirically and comparatively investigate how culture, and specifically knowledge related to the environment, shape human adaptation.

Cultural knowledge embodies skills and know-how that no single individual could ever figure out in a lifetime. Anthropologists suggest that this cumulative knowledge has enhanced human adaptive strategy: better collective understanding of medicinal plants and animals makes it easier to maintain good health, for example. Dr Reyes-García and her team are studying how collective knowledge of our environment evolves and what difference it makes to the life of the individual in three indigenous societies — the Tsimane' in the Amazon, the Baka in the Congo Basin, and the Punan Tubu in Borneo. The research has gathered socio-demographic, economic, relational, and cultural data to test the conditions under which local environmental knowledge enhances individual health and productivity.

The research has already been able to contribute to a number of peer-reviewed articles about the relations between schooling and local environmental knowledge, the rate of loss of traditional ecological knowledge, and ethnoclimatology for instance. By using comparative data and a cross-cultural framework to provide a first empirical test of the adaptive nature of culturally transmitted information, this project represents a ground-breaking opportunity to advance our knowledge about the role of culture in shaping human adaptation.

ERC grantee: Victoria Reyes-García

Host Institution: Universitat Autònoma de Barcelona (Spain)

ERC project: The adaptive nature of culture. A cross-cultural analysis of the returns of Local Environmental Knowledge in three indigenous societies (LEK)

ERC call: Starting Grant 2010

ERC funding: EUR 1 million for five years

Advancing frontier research

An overview of the ERC in FP7

During the course of FP7 (2007-2013) the ERC launched 18 calls for proposals, evaluated 43 528 eligible applications, and awarded 4 556 grants with an overall success rate of 10.5 % (see table 1 below). The highest number of grants (around 45 % of all grants under the three main funding schemes — StG, CoG, AdG) were awarded in the domain of Physical Sciences and Engineering, followed by Life Sciences (36 %), and Social Sciences and Humanities (19 %).

Table 1: ERC calls for proposals

ERC Call	Applications received	Of which		
		Evaluated *	Funded	Success rates (%) **
Starting Grant 2007	9 167	8 787	299	3.4
Starting Grant 2009	2 503	2 392	245	10.2
Starting Grant 2010	2 873	2 767	436	15.8
Starting Grant 2011	4 080	4 005	486	12.1
Starting Grant 2012	4 741	4 652	566	12.2
Starting Grant 2013	3 329	3 255	300	9.2
Consolidator Grant 2013	3 673	3 604	313	8.7
StG and CoG total	30 366	29 462	2 645	9.0
Advanced Grant 2008	2 167	2 034	282	13.9
Advanced Grant 2009	1 584	1 526	245	16.1
Advanced Grant 2010	2 009	1 967	271	13.8
Advanced Grant 2011	2 284	2 245	301	13.4
Advanced Grant 2012	2 304	2 269	319	14.1
Advanced Grant 2013	2 408	2 363	291	12.3
AdG total	12 756	12 404	1 709	13.8
StG, CoG and AdG total	43 122	41 866	4 354	10.4
Proof of Concept 2011	151	139	51	36.7
Proof of Concept 2012	143	120	60	50.0
Proof of Concept 2013	292	279	67	24.0
PoC total	586	538	178	33.1
Synergy Grant 2012	710	697	11	1.6
Synergy Grant 2013	449	427	13	3.0
Synergy total	1 159	1 124	24	2.1

data as of 12/01/2015

* Ineligible and withdrawn proposals not taken into account

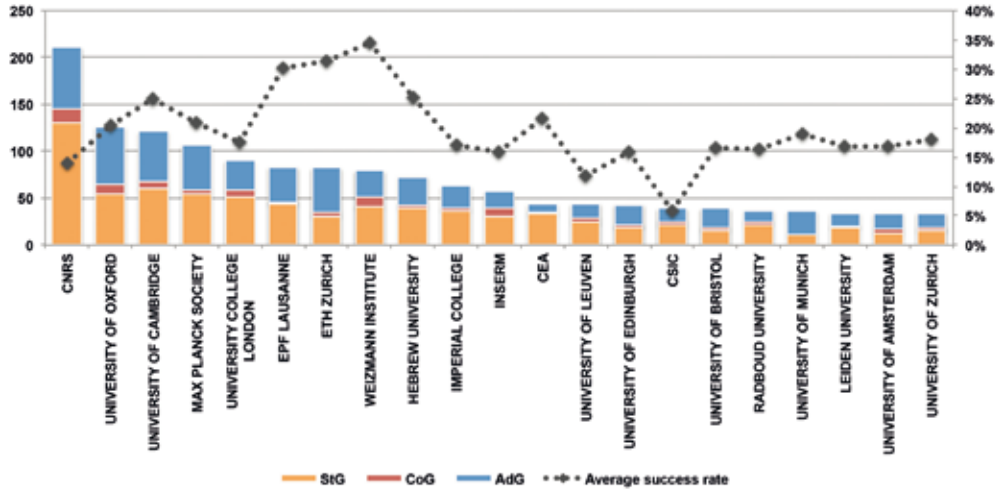
** Basis: evaluated proposals

Host Institutions

Almost 600 research-performing entities from 30 different countries, including the most prestigious higher-education institutions and all prominent research organisations of the European Research Area, hosted at least one ERC grantee, while 113 of those entities hosted 10 or more with a success rate ranging from 4 % to more than 70 %.

The list of the 20 most successful research-performing entities in terms of total numbers of hosted ERC grantees includes large governmental research-performing organisations like the French CNRS, INSERM, CEA and the Spanish CSIC, non-governmental associations of research institutes like the German Max Planck Society, and prestigious higher-education institutions like the British universities of Oxford, Cambridge, UCL, and Imperial College or the Swiss Federal Institutes of Technology. Fig. 3.1 below presents the numbers of currently hosted grantees by funding scheme and the average success rates of the ERC top Host Institutions.

Figure 3.1: Number of Starting, Consolidator and Advanced Grants and average success rates for top ERC Host Institutions



While some research-performing organisations host ERC grantees in research fields that span almost the entire spectrum of science as mapped by the 25 ERC peer-review evaluation panels, others exhibit much more concentrated excellence in certain scientific fields. Table 2 below shows the current numbers of ERC grants of the top ERC Host Institutions by evaluation panel, while the overlaid heatmap presents the grants attained by these institutions under each panel as a percentage of their total grants. From this table it becomes evident, for instance, that the French CNRS and, in a similar pattern, the Swiss Federal Institutes of Technology (EPFL and ETH) and the Spanish CSIC attract grantees from a large spectrum of scientific fields, but more than half of them in the domain of Physical Sciences and Engineering; the German Max Planck Society and the Israeli Weizmann Institute attain more than half of their grants in the domain of Life Sciences; the Dutch Universities of Leiden and Amsterdam exhibit a particularly high concentration of grants in certain fields of Social Sciences and Humanities with at least half of their total grants in this domain; while the Universities of Oxford, Cambridge, Edinburgh, Leuven and Munich have more evenly distributed numbers of grants across panels.

Table 2: Number of ERC grants by evaluation panel for top ERC Host Institutions

		LS1	LS2	LS3	LS4	LS5	LS6	LS7	LS8	LS9	PE1	PE2	PE3	PE4	PE5	PE6	PE7	PE8	PE9	PE10	SH1	SH2	SH3	SH4	SH5	SH6	Total
FR	CNRS	7	8	11		6	9	1	16		14	21	23	6	6	10	8	9	11	14		3	2	15	2	9	211
UK	UNIVERSITY OF OXFORD	8	4	3	2	5	4		8	4	8	7	3	4	6	9	1	2	4	9	3	6	4	7	3	12	126
UK	UNIVERSITY OF CAMBRIDGE	3	8	7	6	3		7	7	3	3	3	10	5	9	4	1	6	7	7	2	2		5	5	8	121
DE	MAX PLANCK SOCIETY	12	6	9	3	9	5		10	3	1	12	2	8	6	1		1	11	2		3		3			107
UK	UNIVERSITY COLLEGE LONDON	2	2	4	3	17	2	5	3	2	1		2	3	3	3	2	1	4	3	10	7	2	4		5	90
CH	EPF LAUSANNE	2	1	4	5	4	4	3	2		6	2	6	5	8	12	8	6	1	2			1		1		83
CH	ETH ZURICH	7	3	3	2		1	3	4	3	6	5	7	6	5	7	3	7		6	1	1	2				82
IL	WEIZMANN INSTITUTE	5	14	6	5	9	2	1	1	2	1	6	6	7	5	4			2	2				1			79
IL	HEBREW UNIVERSITY	1	7		4	9	5	2	2	4	11	1	1	2	5	3			2		4	2		1	2	5	73
UK	IMPERIAL COLLEGE	2	4	2	5		1	4	4	3	7	5		5	6	3	6	6									63
FR	INSERM	2	5	1	12	16	9	8	1					1									1	1			57
FR	CEA	2		1		1		3		1		9	8		2	1	5	2	7	1				1			44
BE	UNIVERSITY OF LEUVEN			1	1	2		5	2	1	3	2		3	2	3	2	4	2	1	2	3	1	1	1	2	44
UK	UNIVERSITY OF EDINBURGH		4	1		1		2	2	1	2		1	1	3	5	1		4	2	2	5	2	3		1	43
ES	CSIC	1		1		5	2	1	1	2	7	1	2	3	2			3	2	1					2	3	39
UK	UNIVERSITY OF BRISTOL	2				2			2	2	4	4	1	1	3	4				7		1		3	2	1	39
NL	RADBOUD UNIVERSITY	1	4		1	1	2	4	2				3	4	2	1			1			1		8	2		37
DE	UNIVERSITY OF MUNICH	5	2		1	3	1	2	1			7	2	2	3					2		2		2	1		36
NL	LEIDEN UNIVERSITY										2		2	4	3				6			2		6	2	7	34
NL	UNIVERSITY OF AMSTERDAM								3		2	3		1	3				2			11	1	5	1		34
CH	UNIVERSITY OF ZURICH	7	3	1	1	4	1		2	1	2			1	2		1				5			1	2		34

Data as of August 2014.

Panel names are described on page 94

In the course of FP7, 86 % of ERC grantees were hosted by research-performing entities located in 25 EU Member States and the remaining 14 % in 5 Associated Countries. More than a fifth of the ERC grantees under the three main funding schemes (StG, CoG and AdG) were hosted by institutions in the UK, more than 13 % in each of Germany and France, and between 8.5 % and 5.5 % in the Netherlands, Switzerland, Italy, Israel and Spain. It is worth noting that two Associated Countries, Switzerland and Israel, hosted more than 90 % of grantees in their group, and, in absolute numbers, more grantees than large EU Member States like Italy or Spain respectively. The distribution of grantees hosted by each country across the ERC evaluation panels is shown in table 3. The intensity of colour in the overlaid heatmap represents the grants attained by each country under each evaluation panel as a percentage of the total number of grants hosted in that country [4].

Table 3: Number of ERC grants by evaluation panel and by country of Host Institution

	LS1	LS2	LS3	LS4	LS5	LS6	LS7	LS8	LS9	PE1	PE2	PE3	PE4	PE5	PE6	PE7	PE8	PE9	PE10	SH1	SH2	SH3	SH4	SH5	SH6	All
AT	5	6	9	4	9	2		7	1	6	16	6	5	1	7	1	4		2		1	7	4		5	108
BE	2	5	4	10	9	4	9	3	6	8	4	1	5	4	8	13	13	4	5	7	9	1	6	4	6	150
BG																									3	3
CH	23	14	17	15	21	19	11	16	6	19	19	20	16	18	24	12	14	3	11	8	2	4	4	4		322
CY		1					1									1	1	1	1	2			1			9
CZ	1									1		1	2	2	2		1		1							10
DE	35	21	35	26	35	30	24	20	19	33	46	33	33	45	27	16	20	17	23	10	13	4	21	15	13	614
DK	6	3	1	2	1		8	5	4	7	8	1	5	1	3	2	3	3	5	1	5	1	2	3		80
EE							1	1													1					3
EL	1		1	4	1	2	3			1	1	1		1	3	2	3	1	1		1					36
ES	6	12	10	16	5	7	10	8	10	12	15	14	10	20	6	4	17	5	2	19	3	3	7	5	7	233
FI	1	2	2	4	2		3	4	3	5	2	7	1	2	2	1	3	2	3	1	4		3			64
FR	21	25	26	19	34	40	15	21	3	41	36	45	11	16	48	19	15	25	29	20	14	4	26	4	16	571
HR						2												1								2
HU	1				3	1	1	1	1	3	2	3	1		1		1			3	1		3		1	36
IE		2			1	1	3	2	1	1	1	1	2	3			3		1	1	1	1		1	3	34
IL	7	23	7	12	20	8	10	8	12	23	9	9	12	16	28	7	1	6	2	6	4	1	6	2	6	245
IS		1																								1
IT	5	3	4	9	6	10	23		6	23	23	12	6	8	6	5	12	8	9	12	11	7	16	12	6	253
LU																	1									1
LV															1											1
NL	16	15	11	11	5	11	23	11	8	7	9	23	21	25	7	12	19	17	11	1	23	11	35	7	13	356
NO			1		6	1	3	2	1	4			2		2	1		2	4	2	3	1	4	1	2	42
PL	2	1									2	1	1		3			2			1				1	14
PT			3	1	4	3	1	1			2				1		3	1		1	3			2		33
SE	3	10	4	13	14	3	13	9	1	2	5	8	12	7	7	10	9	4	4	5	7	1	4		1	155
SI												1							1							2
SK								1																		1
TR				1							1			1		2	2									6
UK	39	31	28	30	40	24	40	50	31	39	40	27	35	64	33	22	32	48	48	38	72	26	49	30	53	969
All	176	179	165	177	218	169	210	169	116	238	243	215	180	233	218	130	190	150	163	143	183	72	191	90	136	4354

Data as of August 2014.

Panel names are described on page 94

[4] The most intense colour (red) represents values falling within the 90th percentile of the distribution of grant percentages across panels, i.e. values equal or higher than 90 % of all other values.

Geographical perspective

From a territorial perspective, ERC grants are concentrated in a relatively small number of regions: only 287 NUTS 3 [5] regions out of a total of 1 462 (less than 20 %) are home to an ERC Host Institution, and only 103 of those have managed to attract 10 or more ERC grantees. The most successful NUTS 3 regions in that respect are the ones that encompass important urban agglomerations in their territory, such as the department of Paris, West Inner London, the district of Munich, the county of Cambridgeshire, the canton of Zurich, the county of Oxfordshire, the province of Barcelona, the region of Greater Amsterdam, the canton of Vaud, and the province of Madrid.

At the larger scale of NUTS 2 regions, ERC grants appear to be less geographically concentrated (see choropleth map in Fig. 3.2): 184 out of a total of 317 NUTS 2 regions are home to at least one ERC host institution (58 %). The 10 most attractive NUTS 2 regions for ERC grantees are the region of Île-de-France (which encompasses the Parisian metropolitan area), Inner London, East Anglia (which encompasses Cambridgeshire), the Lake Geneva region (which encompasses the Swiss cantons of Geneva, Vaud and Valais), the region of Berkshire, Buckinghamshire and Oxfordshire, the metropolitan region of Zurich, the autonomous community of Catalonia, the administrative region of Upper Bavaria (which encompasses the city of Munich), the province of South Holland (which includes in its territory the cities of Leiden, Delft and Rotterdam), and the region of Rhône-Alpes (which encompasses the metropolitan area of Lyon). Within the group of NUTS 2 regions with more than 20 grantees, the highest aggregate success rates were attained by three Swiss regions, those of Northwestern Switzerland (with a success rate of almost 30 %), Lake Geneva and Zurich, East Anglia, the administrative region of Upper Bavaria, the region of Berkshire, Buckinghamshire and Oxfordshire, Île-de-France, Inner London, and the provinces of North Holland and Gelderland (with a success rate of more than 15 %). The choropleth map in Fig. 3.3 presents the success rates of all NUTS 2 regions.

[5] The NUTS (Nomenclature des unités territoriales statistiques) classification system is the geocoding standard used by EUROSTAT for statistical purposes, and extends to all EU28 member states, as well as to the former Yugoslav Republic of Macedonia, Iceland, Norway, Switzerland and Turkey. The NUTS-2 regional level roughly corresponds to the OECD territorial level 2, which is the most typical country sub-division in macro-regions, while the NUTS-3 level roughly corresponds to the OECD territorial level 3, which describes micro-regions often coinciding with 'provinces'.

Figure 3.2: Current number of grants by NUTS 2 region

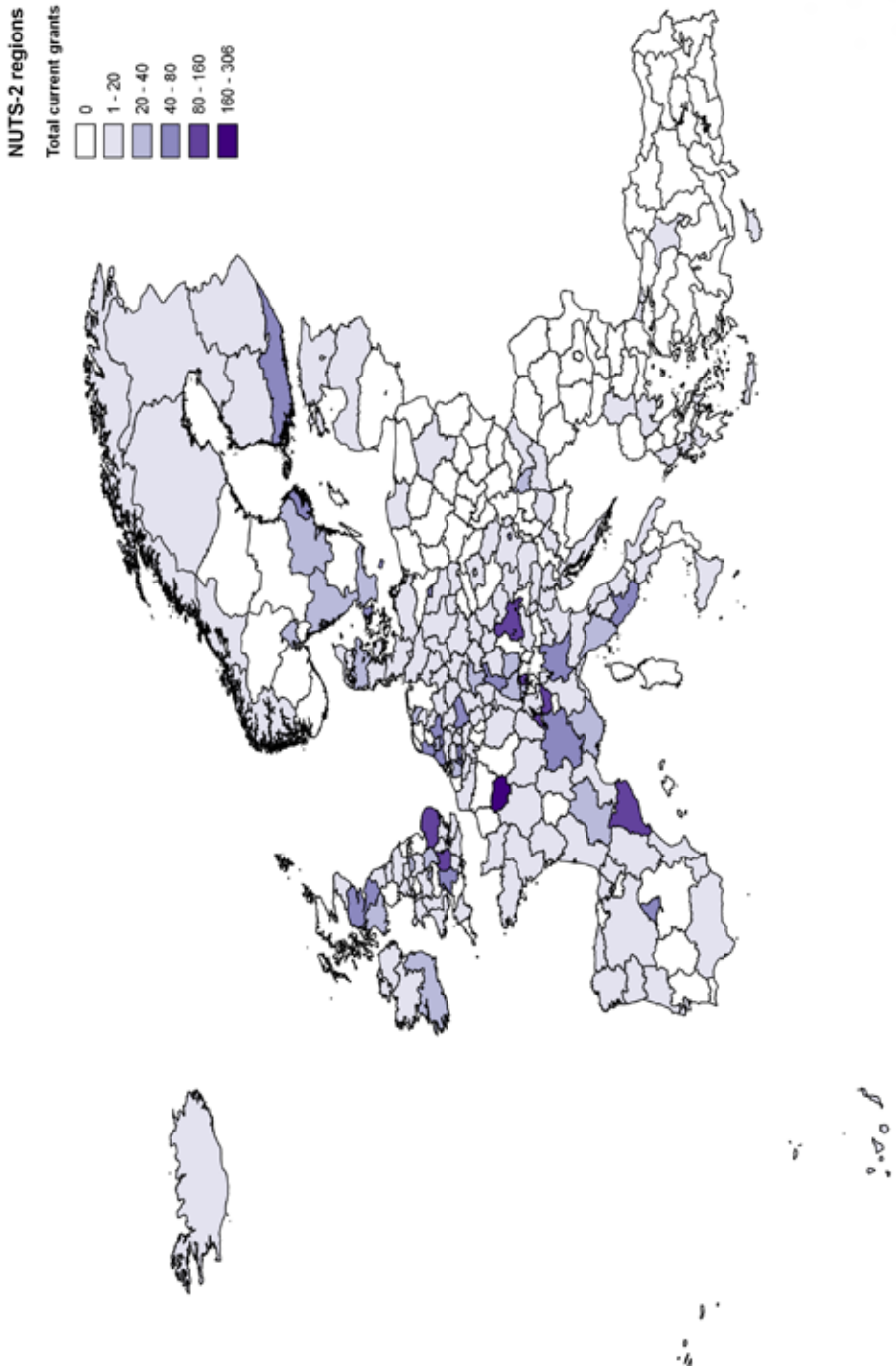
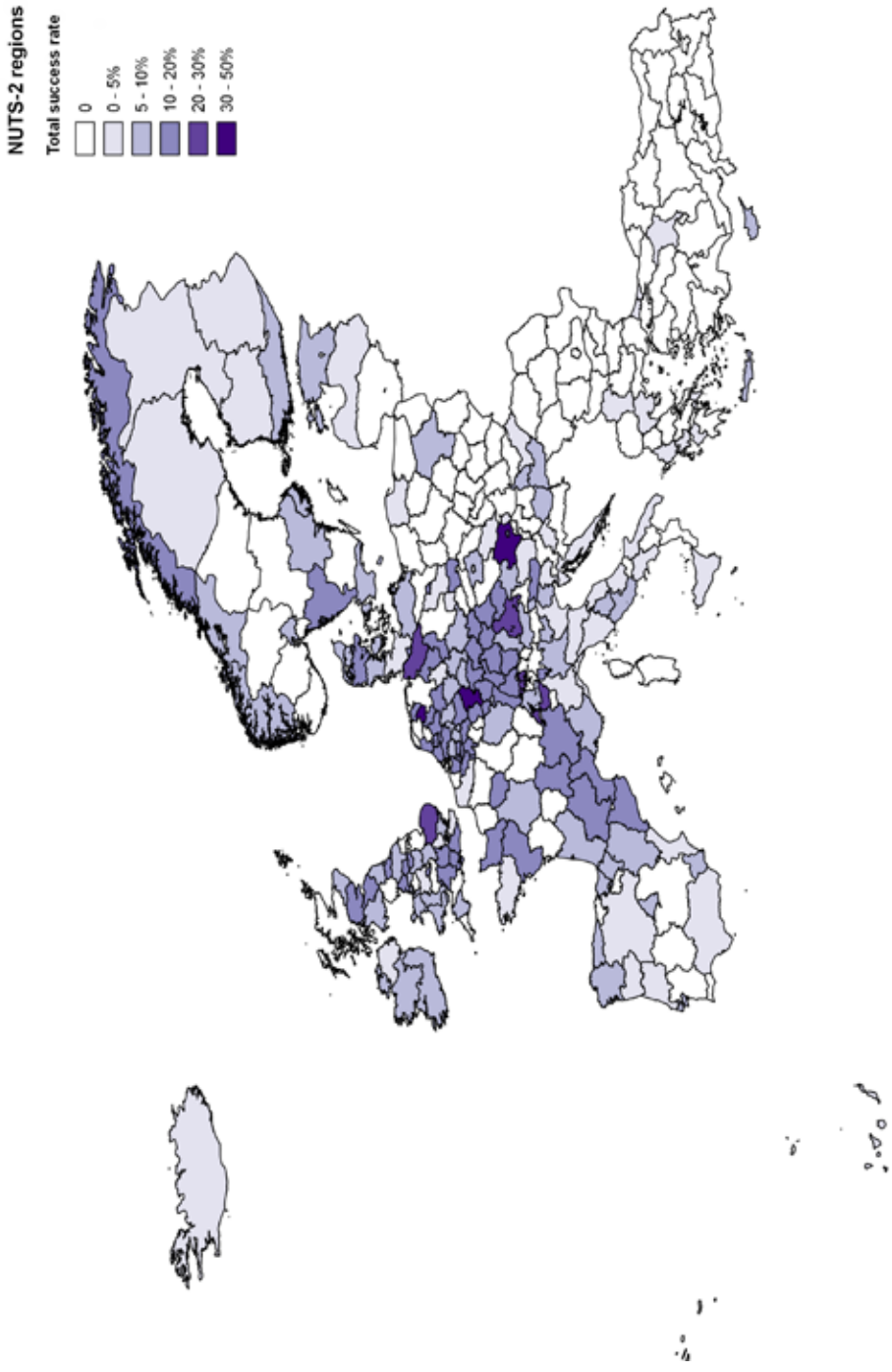
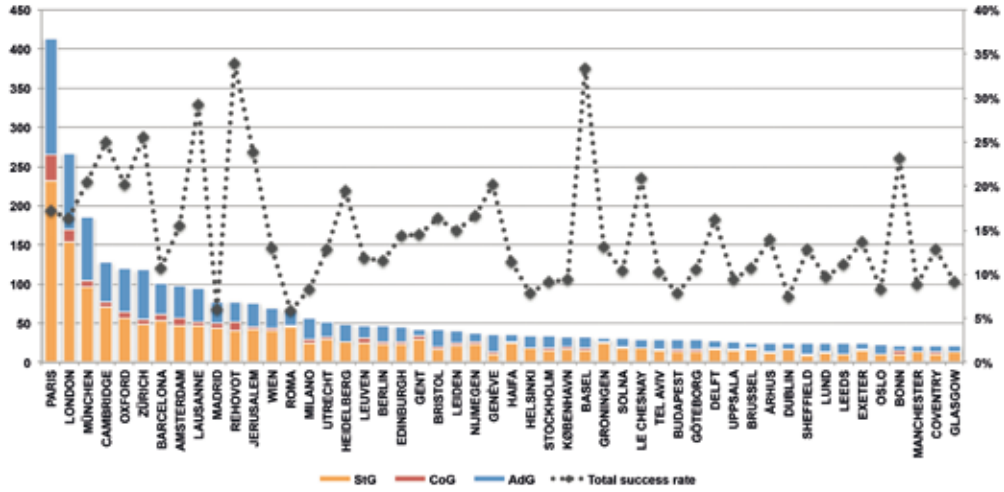


Figure 3.3: Success rate in ERC calls by NUTS 2 region



At the sub-regional scale, the 10 localities with the highest numbers of hosted ERC grantees are the cities of Paris, London, Munich, Cambridge, Oxford, Zurich, Barcelona, Amsterdam, Lausanne and Madrid, with varying success rates, while the most successful localities (with success rates exceeding 25 %) are the cities of Rehovot, Basel, Lausanne, Zurich and Cambridge. Fig. 3.4 shows the numbers of grants by funding scheme in the top-50 localities and the corresponding success rates. It is worth noting that in some countries certain localities, usually capital cities, concentrate the majority of grantees in the country. The most notable cases within the group of top-50 localities are those of Budapest, which concentrates 82.2 % of all grantees hosted in Hungary, Paris with 73.5 % of those in France, Vienna and Dublin with 71.4 % of those in Austria and Ireland respectively, Oslo with 52.3 % of those in Norway, and Helsinki with 50.7 % of those in Finland.

Figure 3.4: Number of Starting, Consolidator and Advanced Grants and average success rates for top-50 localities



Gender

Female researchers tend to apply for ERC grants much less than their male peers. Female applicants in evaluated proposals represent just 30 % of all applicants under the StG and the CoG funding schemes, and as little as 15 % of all applicants under the AdG scheme. The participation of female researchers is strong in Social Sciences and Humanities (42 % under StG and CoG and 24 % under AdG scheme) and very weak in Physical Sciences and Engineering (20 % under StG and CoG and 8 % under AdG scheme).

The pattern of participation does not improve at the level of ERC grantees. The share of female Principal Investigators is 25 % in the StG and CoG funding schemes and 13 % in the AdG scheme.

Figure 3.5: Share of female and male applicants in the three scientific domains by funding scheme

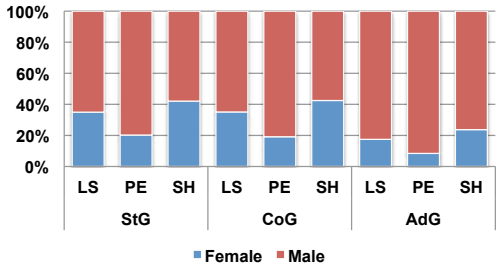
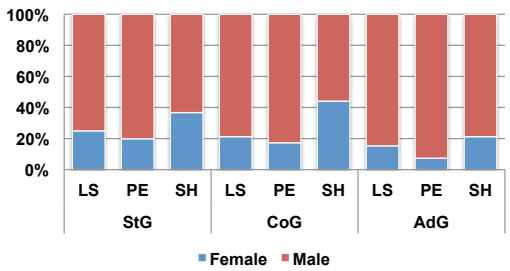
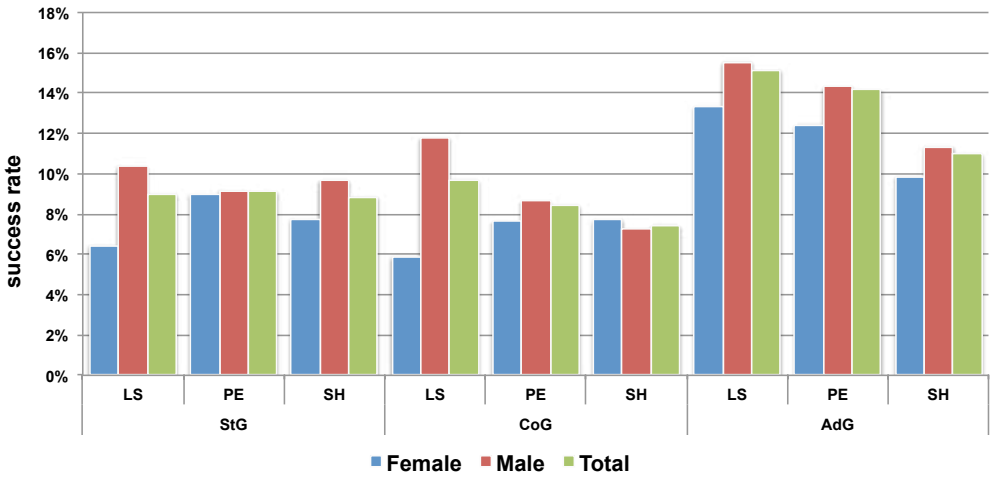


Figure 3.6: Share of female and male grantees in the three scientific domains by funding scheme



Female applicants at the ERC have lower success rates than male applicants under all funding schemes except Proof of Concept grants. The success rate differential is slightly above two percentage points under the StG, CoG and AdG funding schemes, but this difference is significant, as it means that on average a male applicant has 28 % higher success rate than a female applicant in StG, 34 % in CoG, and 19 % in AdG. Women are less successful than men in obtaining ERC grants under all funding schemes and in all scientific domains (Fig. 3.7). Occasionally women may be more successful than men in a scientific domain in a certain call, as for example the CoG 2013 call, in which female applicants achieved a slightly higher success rate than male applicants in Social Sciences and Humanities. Gender differentials become generally less pronounced in AdG calls.

Figure 3.7: Success rate of female and male applicants in the three scientific domains by funding scheme



Mobility of researchers

10 % of successful ERC applicants became affiliated to a Host Institution in a country other than their country of residence at the time of application. The vast majority of ERC grantees were already resident in the country of their Host Institution at the time they applied to the ERC.

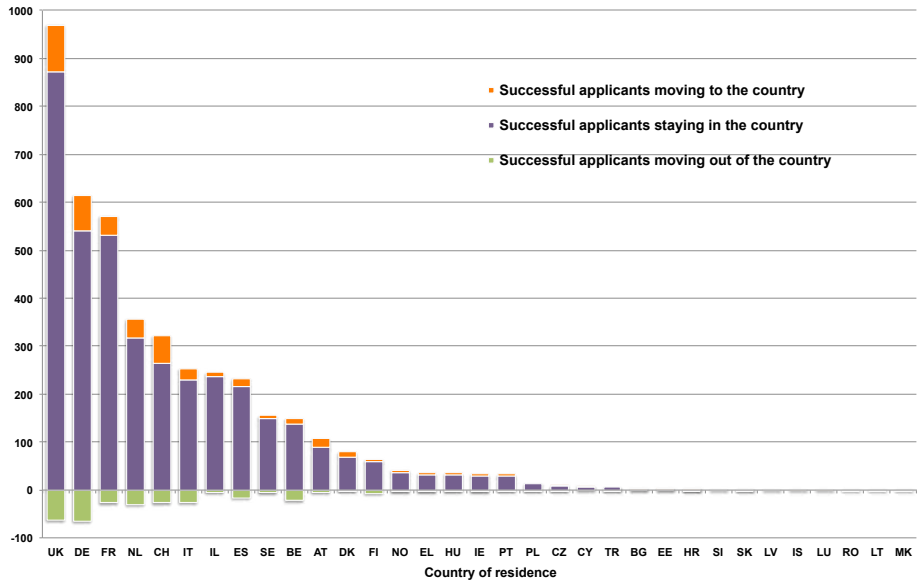
Successful ERC applicants moving to the country represent around 20 % of those staying in the country in Switzerland and Austria, and less than that in all other countries with at least 15 ERC grantees. Some countries with lower numbers of ERC grantees, like Cyprus and the Czech Republic, may exhibit higher ratios. In absolute terms, the UK and Germany attract the largest number of grantees from abroad (Fig. 3.8).

For Belgium the successful applicants moving out represent around 16 % of those staying in the country. This ratio is around 10 % or lower for other countries with at least 15 ERC grantees. The largest absolute numbers of successful applicants moving out of their country of residence are those of UK and Germany (more than 60 Principal Investigators in each case).

A quarter of the mobile successful applicants (or less than 3 % of all ERC grantees) come to the EU and the FP7 Associated Countries from a country outside the European Research Area (ERA). They are, however, mainly ERA nationals (72 %).

About a third of the Principal Investigators changing residence due to success in ERC competitions are nationals of the country of the Host Institution moving back to that country, while half of them are nationals of other EU Member States or FP7 Associated Countries. Nationals of countries outside the ERA represent 13 %, or less than 60 grantees (of which half were already in the ERA).

Figure 3.8: Distribution of ERC grantees by country of residence



Portability of grants

A characteristic feature of the ERC funding model is the 'portability' of grants. ERC grantees may change the Host Institution to which they are affiliated for the purposes of the grant at any stage of the proposal or grant life cycle, i.e. at the submission of the proposal, at the signature of the grant agreement, or during the implementation of the research project. Changes of Host Institutions are relatively few, and inter-country changes are even fewer: less than 12 % of ERC grantees moved to a different Host Institution and less than 5 % moved to a Host Institution in a different country during granting or during project implementation (data as of August 2014). ERC grantees moving out of a country during project implementation never represent more than 5 % of all grants initially signed with a Host Institution in the country, with the exception of only three countries with small number of grants, namely Ireland (9 %), Czech Republic (9 %) and Turkey (14 %). ERC grantees moving into a country during project implementation never represent more than 6 %. The largest net loss of grantees (Netherlands) and the largest net gain of grantees (Germany) during project implementation represent in each case less than 3 % of all grantees currently in the country.

Excellence can be found everywhere

The results of the ERC calls under FP7 show significant differences in success rates between researchers based in different countries, regions and Host Institutions. More research intensive entities indeed tend to be more successful in competing for ERC grants. The number of grants received by researchers based in a given country, region or institute correlates most closely with the number of scientific publications which the entity has within the top 10 % most cited scientific publications worldwide. The distribution of ERC grants is highly skewed and concentrated though. About 50 % of all ERC grants are being awarded to the top 50 institutions in terms of number of hosted grants with all of them based in a dozen of countries which are leading in terms of international scientific production and impact.

On the other side, statistics on the geographical distribution of ERC grants show that only 2 % of ERC grants are awarded to researchers applying from Host Institutions based in the newer EU Member States with the number of applications from some of them in decline.

The ERC Scientific Council has always been very concerned with the low participation of some countries in ERC competitions and has acknowledged many times that excellence may be found everywhere. Based on the sole criterion of excellence, the ERC objective since the beginning is to encourage participation in the ERC programme from all parts of the European Union and Associated Countries (as well as from other parts of the world) by creating conditions to maximize the prospects for funding out-of-the-box thinking and the potential for successful frontier research wherever it thrives. The Scientific Council has repeatedly stated its intention to uncover more of Europe's resources, hidden so far due to a lack of tradition or inadequate research infrastructure.

One of the most important duties of the Scientific Council is to remain an ambassador of excellent science in every corner of Europe. By creating a new Working Group on widening European participation it has launched a reflection on the measures that need to be taken so that the pool of high calibre scientists from regions where participation is low is encouraged to apply successfully to the ERC. This is essential to build a truly inclusive European culture of competition in science.

The main responsibility for increasing the number of successful candidates from countries with a weaker participation rate in ERC calls lies predominantly at the local and national levels. The newly established Working Group started to systematically monitor Europe-wide participation in ERC calls and facilitate systematic debate and interactions with relevant national stakeholders to promote better local support for promising scientists based in Europe's weak research-performing regions. The mission began with the ERC President's letter to all EU research ministers encouraging use of their structural funds to strengthen local research capacity and support to potential ERC candidates in order to become more competitive in ERC calls. To gather first-hand information about their lower success and identify problems, limits, and possible actions to foster their participation in ERC programme the Working Group further ran a consultation with researchers applying from countries which proved to be less successful in the past ERC calls. This consultation will provide valuable evidence for making specific recommendations for improving the competitiveness of researchers based in these countries when applying to the ERC in the future.

Without departing from the ERC golden principle of funding excellence alone, the ERC Working Group on widening European participation works further towards possible solutions that will encourage more talent from Central and Eastern Europe to take part in its funding schemes.

Some achievements of the ERC in FP7

Quality of the scientific output

Monitoring the scientific output of ERC-funded projects

The publication of the results of research is an essential part of the scientific method. Scientific publications report the findings of original experimental and theoretical work in appropriate scientific journals. The ERC therefore carefully monitors the scientific publications resulting from ERC funded projects.

The ERC uses two complementary sources to track the publications produced by its funded projects. Firstly it records the publications reported by the Principal Investigators during the scientific reporting of their projects. And secondly it automatically collects publications which acknowledge its funding from specialised bibliometric databases. Taken together these produce reliable datasets of publications funded by the ERC.

The expert judgment of scientists in the field is necessary to properly assess the scientific importance of a particular publication, and even then the significance of some papers can be missed for many years. However, counting the number of times a publication is cited by other publications is widely considered to be a useful proxy for quickly assessing the potential significance or impact of a particular publication or body of publications.

This section covers the main results of citation analysis conducted over both sets of data. Additional data cleaning and analysis are being undertaken and further results will be delivered based on larger datasets of publications in the future.

Citation analysis of reported publications

ERC projects submit two scientific reports, at mid-term and at the end of the project. As of September 2014, the number of reported publications was 39 552 from 2 316 ERC projects which had submitted at least one scientific report (53 %). Only 312 projects had been completed by September 2014 so most of the projects had sent only their mid-term scientific report.

The 312 completed projects reported 10 796 publications which could be validated with a simple digital-object-identifier (DOI) giving overall average of 35 publications per project. Projects in Life Sciences had on average 23 publications per project, in Physical Sciences and Engineering 48 and in Social Sciences and Humanities 18.

Out of the 10 796 validated publications, 6 806 publications could be found in SciVal (a registered trademark of Elsevier Properties SA which allows the retrieval of several bibliometric indicators for bibliographic records indexed in Scopus). Of these, almost half made it to the top 10 % most highly cited publications in their scientific discipline and year of publication and 11 % were in the top 1 % most highly cited publications worldwide (see table 4).

Table 4: Citation performance of publications from completed ERC-funded projects

Research Domain of the ERC-funded project	Completed projects	DOI-validated publications	Publications retrieved in SciVal (% of validated publications)	% of SciVal publications in Top 10 %	% of SciVal publications in Top 1 %
Life Sciences	107	2,434	1,816 (74 %)	67.6	20.6
Physical Sciences and Engineering	156	7,486	4,545 (60 %)	41.1	7.9
Social Sciences and Humanities	49	876	445 (50%)	34.2	9.2
Total	312	10,796	6,806	48	11

From the total of 39 552 publications reported by ongoing ERC projects, 14 589 articles and reviews published between 2008 and 2013 could be identified in Elsevier' Scopus (an abstract and citation database of peer-reviewed literature). Of these, 9 % ranked in the top 1 % most highly cited publications in their scientific discipline and year of publication. On average a third of all ERC projects have reported an article or review that ranks in the top 1 % most highly cited publications worldwide.

Citation analysis of publications acknowledging ERC support

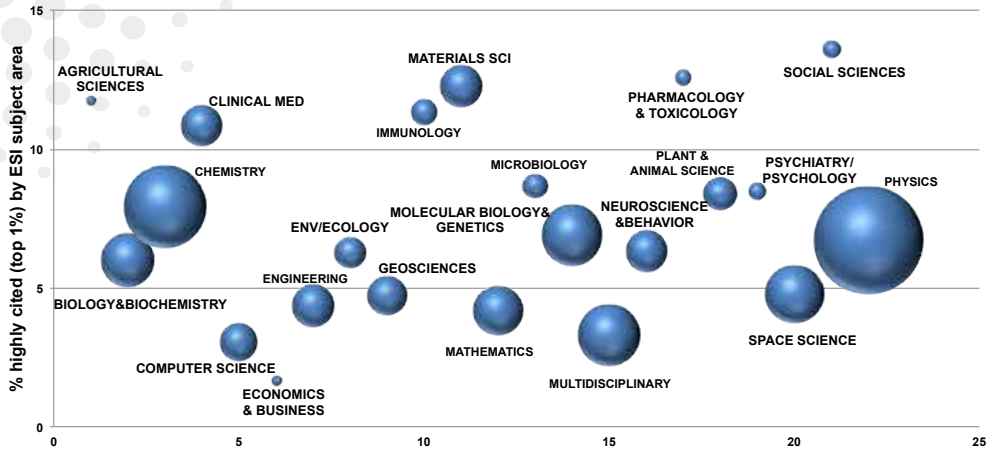
As of September 2014, 30 319 records acknowledging ERC support were retrieved from Thomson Reuters' Web of Science (WoS) database. 94 % of them are classified by WoS as articles, 6 % as reviews and 8 items are editorials. These publications resulted from at least 2 884 ERC-funded projects from ERC calls 2007-2013 (the attribution of 1 264 publications is still in progress).

The number of ERC-acknowledging publications increased from 51 in 2008 to 4 114 in 2011 and to 10 504 in 2013 as the total number of ERC grants increased.

The ERC-acknowledging publications were ranked by scientific discipline and by year of publication according to the total number of citations received in WoS. Overall 2 005 ERC-acknowledging articles and reviews (or 7 %) are classified in the top 1 % most highly cited in their scientific discipline and year of publication. When looking at the data presented in Fig 3.9 it is important to recognise that certain scientific sub-fields (especially in the Social Sciences and Humanities) are less likely to use international journals as their major means of communication.

Figure 3.9: Highly cited (top 1 %) ERC-acknowledging publications by ESI subject area

7% of all ERC-acknowledging publications are in Top 1%



Bubble size = % of total ERC-acknowledging publications

The share of top 1 % publications by type of grant is the following: 7 % for Starting and Consolidator Grants, 7 % for Advanced Grants and 11 % for Synergy Grants. The share of top 1 % publications by project domain is 8 % for Life Sciences, 6 % for Physical Sciences and Engineering and 5 % for Social Sciences and Humanities.

Another indicator of quality is that 650 publications appeared in Science or Nature.

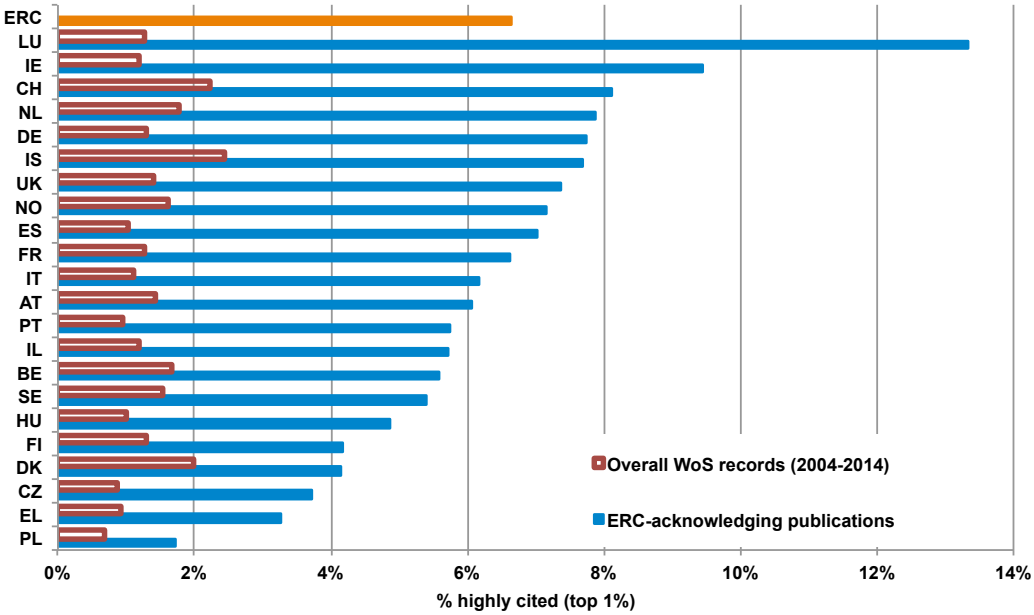
ERC-acknowledging publications are also classified in the top 0.1 % highly cited (187 or 0.62 %) and even in the top 0.01 % (26 or 0.09 %).

Citation analysis at the level of host institutions and countries of host institution

Researchers based at 283 Host Institutions can be linked to at least one ERC-acknowledging publication in top 1 % highly cited (corresponding to 890 ERC grants). 50 % of the top 1 % publications are linked to researchers based at 27 Host Institutions, compared to 50 % of ERC grants based at 50 Host Institutions. All but four of these 27 organisations are also among the top institutions that host ERC grants. The four organisations hosting a relatively small number of ERC grants, but ranking high in terms of top 1 % publications, are: University of St. Andrews UK (15 ERC grants), Institute of Photonics Science Spain (11 ERC grants), University of Muenster Germany (10 ERC grants) and CERN (8 ERC grants).

One can also look at the percentage of publications in the top 1 % linked to a particular host country. The ERC-supported output is much better than the overall country performance in WoS for all countries with at least one ERC-acknowledging publication in top 1 % highly cited (Fig. 3.10).

Figure 3.10: ERC-acknowledging publications retrieved from WoS by country of ERC-grant Host Institution



Advances at the frontiers of knowledge

ERC-funded research is shattering existing science paradigms in the area of solar cells

Photovoltaic solar cells convert light energy from the sun into electricity. Conventional solar cells are expensive because they require very pure silicon – an expensive material. In order to allow them to thrive in the future, efforts to improve the cost of solar cells and the efficiency of energy conversion [6] from sunlight to electrical power have been on-going for decades.

An alternative to the conventional silicon-based solar cells are dye-sensitized solar cells (DSCs). They employ a dye or a coloured pigment as a light harvester that is located on a scaffold formed by a 3-dimensional array of nanometer-sized titanium dioxide particles. The organic dye absorbs sunlight and generates electrons, which are transported to the electrode through the titanium dioxide particles. When a liquid electrolyte is placed between this electrode and a counter-electrode, the electrical circuit is closed and voltage is generated.

When they were developed in 1991, DSCs had an efficiency of 7.1%. This was increased to 12.3% through the optimisation of the dye and the electrolyte by the MESOLIGHT project research, funded by an ERC Advanced Grant and led by Michael Grätzel from the Swiss Federal Institute of Technology Lausanne. An article illustrating these results (Yella et al., 2011) [7], published in Science in November 2011, is the most highly cited publication currently to acknowledge ERC funding and has already been cited over 2 000 times. *Science* summarised the impact of this paper as a paradigm shift in this area.

While this was a huge improvement, even with further research, the efficiency is far from the 25% of conventional solar cells.

In the words of Michael Grätzel himself (Grätzel, 2014) [8], another "change in paradigm" in DSC research occurred when Snaith and colleagues successfully used perovskites in DSCs in their HYPER project work funded by an ERC Starting Grant at the University of Oxford.

Perovskites consist of both organic and inorganic compounds. Studies in the last two decades have shown that they have interesting optical and electronic properties: they absorb light over the whole visible spectrum and can transport electrons. For this reason, perovskites were initially used by the groups of the Japanese scientist Miyasaka and that of the Korean Nam-Gyu Park as a pigment in the liquid electrolyte based DSCs to replace the organic dye. However as the liquid electrolyte dissolved the perovskite these scientits started cooperating with the groups of Henry Snaith and Michael Grätzel to replace the electrolyte by a solid stated hole conductor. This together with the seminal work of Prof. Michael Kanatzidis form North Western University in Chicago who employed tin halide perovskite as hole conductors in DSCs, launched a new era in photovoltaics.

The group of Henry Snaith has simultaneously changed several elements of DSCs, achieving an efficiency of 10.9% (Lee et al., 2012) [9]. They used perovskite as the dye, changed the metal of the scaffold from titanium dioxide to aluminium oxide and replaced the liquid electrolyte with a solid organic conductor. Since aluminium oxide does not allow electron transport, it was surprising that this device worked at all. Therefore the transport of electrons to the electrode must have occurred in the perovskite, placing this compound into the limelight. Importantly, this new type of solar cell, termed perovskite solar cell (PSC) can be produced cost-efficiently. Low-cost compounds forming the perovskite can be deposited on the aluminium oxide, the generation of the perovskite can subsequently be triggered by mild heating.

Since this ground-breaking discovery of the applicability of perovskites in solar cells, research in this area has exploded. Further improvements of PSCs have increased the efficiency of PSCs, the latest reported being 20.1%. PSCs are now reaching efficiencies close to those of conventional silicon-based solar cells, and even higher efficiencies of around 30% may be reached when combining both technologies.

Future research must go beyond aiming at increasing the efficiency of PSCs and also address environmental issues associated with current PSCs. Perovskites used to date contain the toxic metal lead, so the use of perovskites without lead in PSCs needs to be investigated as indeed Snaith has also demonstrated working tin based perovskite solar cells through the ERC funded research, (N. Noel et al, EES 2014) [10] but more work is required to bring these "lead-free" cells up to the same level of efficiency. Furthermore, solar panels are expected to have a long life-time, even in harsh weather conditions, so the stability of PSCs needs to be tested.

Perovskites are now seen as promising compounds for solar cell technology. Within a few years, the efficiency of PSCs has increased rapidly, now approaching the efficiency levels of conventional silicon solar cells, while being much less expensive to produce. They therefore have the potential to allow photovoltaic solar cells to contribute substantially to global electricity production.

With the help of the 2012 ERC Proof of Concept grant NEM, the project research team of Henry Snaith has been able to enhance the stability of PSCs. A number of new patents have been filed during the course of the PoC project associated with both enhanced stability and performance of the perovskite solar cells, but despite these significant advances further improvements are required for a commercial technology, which is being pursued through the Oxford spin-out, Oxford PV Ltd.

[6] The energy conversion efficiency (η) of a solar cell is the percentage of the solar energy to which the cell is exposed that is converted into electrical energy

[7] Yella, et al., 2011: Porphyrin-sensitized solar cells with cobalt (II/III)-based redox electrolyte exceed 12 percent efficiency. Science 334(6056):629-34. doi: 10.1126/science.1209688.

[8] Grätzel, 2014: The light and shade of perovskite solar cells. Nature Materials 13, 838–842. doi:10.1038/nmat4065

[9] Lee et al., 2012: Efficient Hybrid Solar Cells Based on Meso-Superstructured Organometal Halide Perovskites. Science 338 (6107): 643-647. doi: 10.1126/science.1228604

[10] Noel et al., 2014: Lead-free organic–inorganic tin halide perovskites for photovoltaic applications. Energy Environ. Sci., 7, 3061

Impact on the careers of ERC grantees

Impacts and outcomes of the awarding of an ERC Starting Grant

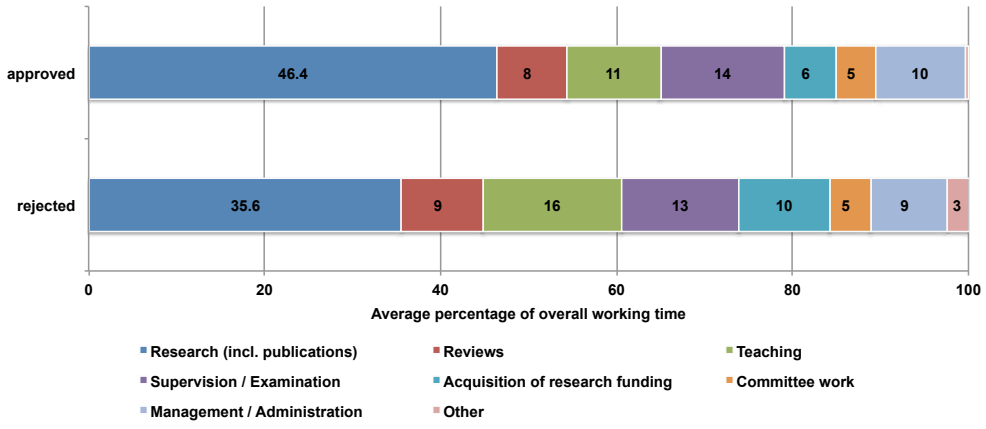
In February 2009 — as part of the ERC monitoring and evaluation strategy — the ERC launched a longitudinal project on Monitoring the European Research Council's Implementation of Excellence (MERCI). The project was designed to follow-up impacts and outcomes of the awarding of an ERC Starting Grant from the personal perspective of the applicants. It aimed to capture the effects of ERC grants by analysing working conditions, career development and academic advancement of selected and rejected candidates after they have applied to the ERC. A representative group of ERC applicants (selected vs. rejected) from each of the 2009-2011 calls was followed for a five-year period after their application to the ERC using a unique methodological design combining three-wave online (panel) surveys, personal interviews and bibliometric analysis. The project was implemented as an ERC Coordination and Support Action (CSA) and was carried out by a consortium of four partners: Institute for Research Information and Quality Assurance (iFQ), TU Dortmund University, Bielefeld University and Humboldt University of Berlin.

The project was completed in 2014. It delivered its results by drawing upon large empirical evidence based on three StG cohorts and some 1 000 ERC applicants. Results shed light on the applicants' research funding strategies and their motivation to apply to the ERC in comparison with other existing research funding opportunities. They depicted the role of ERC grants in the overall research funding portfolio of ERC applicants. They tried to show whether the ERC reaches the 'excellent' young researchers by analysing their selection in terms of bibliometric indicators and they looked at the extent to which the StGs effectively facilitate postdoctoral researchers' independence and their advancement on the academic career ladder. The results also provide insights on the sustainability of ERC funding in terms of the StG recipient's position at the Host Institution and continuation of the StG research group after the end of the grant.

Findings from the MERCI project include the following:

- The relevance of the StG project in the researchers' project portfolio differs across research domains. While in the SH domain the StG is essential for realising a specific research idea that would not otherwise be possible, in the LS and PE domains an ERC grant is often embedded in larger projects and is an integrative part of a more diversified funding portfolio. In some specific research fields, due to their thematic openness and flexibility, the StGs tend to substitute for recurrent institutional funding.

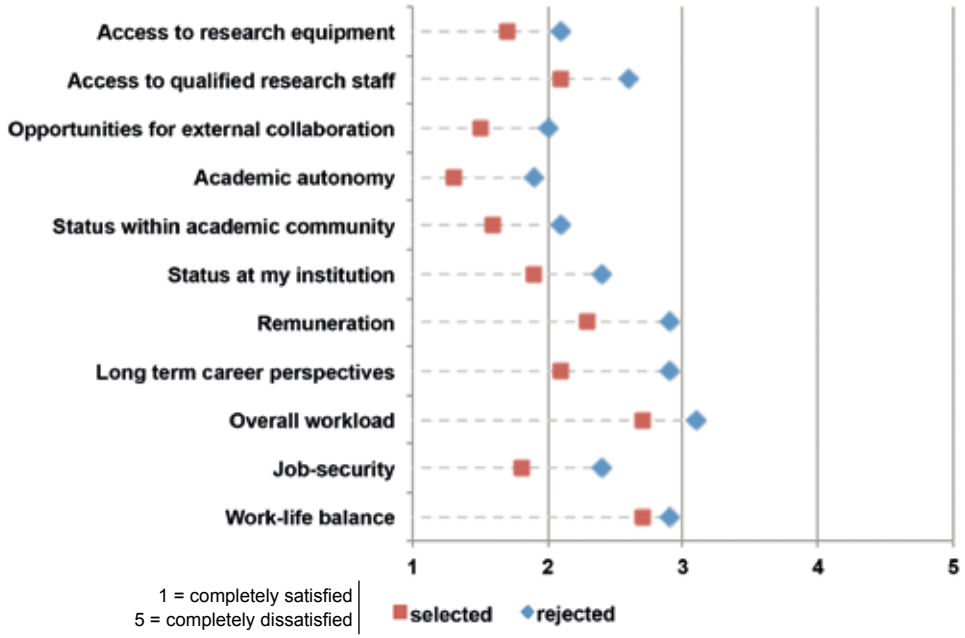
Figure 3.11: Assessment of the working time after applying to ERC



- The bibliometric analysis reveals that the past publication performance of selected and rejected StG applicants differs only moderately. Most of the StG applicants already show an above-average output prior to their application. In the analysed domains (LS and PE) over 90 % of applicants have published at least six articles in international journals and over 75 % of all applicants have authored at least one highly cited paper. Both hold for rejected and selected applicants. This evidence gives a clear indication of recognition of the ERC's principle of scientific excellence and demonstrates an effective self- or pre-selection attitude amongst potential StG candidates.
- Receiving a StG is usually followed by a higher level of autonomy in terms of allocation of material resources, human resources as well as lab and office space, while it has less effect on teaching activities and institutional co-decision. In comparison with their peers at the same career level, StG applicants (selected as well as rejected) report very high levels of scientific independence already at the moment of applying for a StG. This suggests that the StG serves as an instrument to complement already existing scientific independence by adding financial autonomy to it.
- Comparison of researchers' time budgets reveals that after applying to the ERC the selected applicants report a substantial surplus in time for research compared to rejected applicants. While the grantees on average dedicate 46 % of their overall working time to genuine research, the respective share for the rejected applicants is 10 percentage points lower (Fig. 3.11). Even when controlling for potential moderating factors (e.g. teaching load, position, research field and country group) receiving the StG results in a significant increase in research time if compared to rejected applicants.
- In the assessment of their working conditions after applying to the ERC the selected applicants systematically report higher levels of satisfaction across all different aspects of work. The most significant difference in the assessment is seen in the evaluation of long term career perspective where ERC grantees show much higher satisfaction with their future career prospects (Fig. 3.12).

The complete report with MERCI results will be published in 2015.

Figure 3.12: Assessment of the working conditions after applying to ERC



Exploitation of results

Patents

Data from completed ERC projects shows that around one-fifth of ERC Principal Investigators working in the Physical Sciences and Engineering and Life Sciences domains have reported at least one patent arising from their project. And those projects that do patent report on average more than one patent (see table 5 below).

Table 5: Number of ERC projects reporting at least one patent [11]

	LS			PE		
	Projects completed	Projects with at least one patent	Total patents	Projects completed	Projects with at least one patent	Total patents
StG2007	68	12	20	88	21	44
AdG2008	39	7	10	68	13	24
Total	107	19	30	156	34	68

Proof of Concept grants

From its launch in 2011 and by the end of FP7, with three calls and six deadlines, the PoC scheme had reviewed 538 grant proposals, originating from 417 ERC frontier research grants (when discounting for all re-applications from the same PI)[12]. The PoC applications received by the ERC in FP7 came from an unexpectedly high percentage (12 %) of PIs holding an ERC grant.

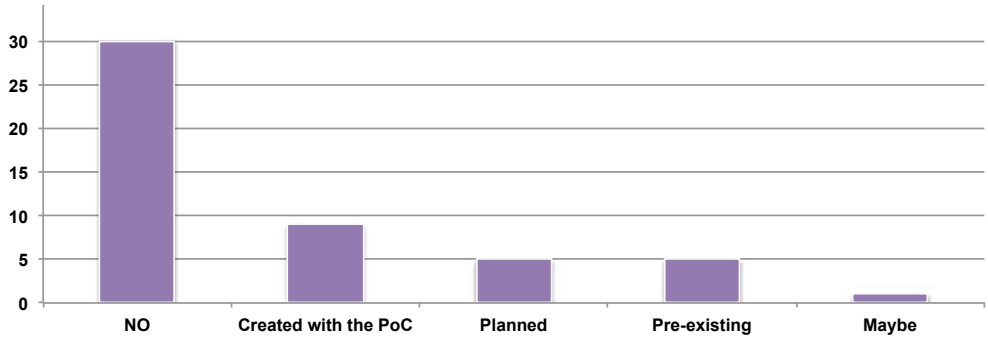
By the end of FP7, the scheme had funded 178 PoC projects, with EUR 25.8 million. They originate from 5 % of all signed ERC grants and can be linked to 4 % of signed LS projects, 7 % of PE and 2 % of SH. The success rate (PoC grants/PoC applications) is around 33 %, with a higher success rate for applications originated in PE projects (41 %) and less for LS (27 %) and SH (21 %).

Patenting and creation of spin-out

The first result of a preliminary analysis of the impact of PoC grants based on 50 final reports of concluded projects shows that more than 50 % of them reported at least one patent application.

It also shows that 18 % of funded projects spun out a new venture and that 10 % of them planned to do it in the following couple of years, while in another 10 % of cases a pre-existing spin-out created by the PI in the past (mainly during the ERC frontier research grant) was involved in the PoC project.

Figure 3.13: Spin-outs creation (based on 50 final reports)



[11] This analysis looked at 263 projects in the LS and PE domains from 314 completed projects from the first two calls (StG 2007 and AdG 2008). It counted only those reported patents which ERC was able to validate in the database of the European Patent Office. There were no reported patents from the SH projects in this sample.

[12] PIs of ERC frontier grants who are not successful in their PoC applications can re-apply in all of the subsequent calls and deadlines within a call.

Commercialisation / Valorisation route

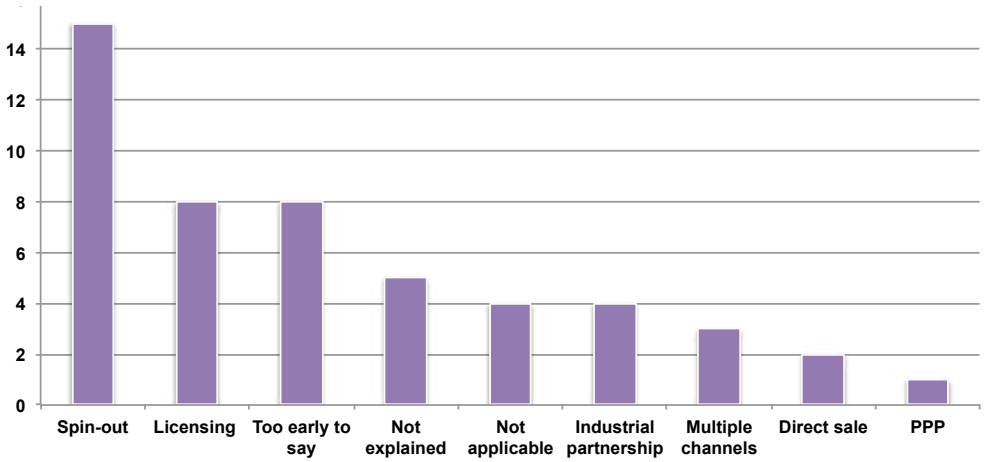
Spin-outs are also the valorisation vehicle most commonly planned to be used by the 50 concluded projects analysed. The valorisation path may vary largely in different fields of research/invention (e.g. life science technologies taking normally longer to reach market than software technologies) and depending on which model is pursued. The innovation process does not only lead to a new product, a new process or enabling technology (instrumentation, software, etc.). It could also lead to a new principle, a piece of legislation, a social movement, an intervention, a new form of participation or some combination of them.

Technologies can be commercialised through licenses to a new or existing company or through a venture funded start-up, depending on the nature of the invention, its potential markets, and the inventor's plans for future involvement in the commercialisation. Alternatively, ideas can be valorised through the creation of a social movement, a social venture, an ICT-based social network, a non-profit organisation, a new form of participation, a new grass-root organisation.

In the case of the 50 PoC projects analysed, 30 % of them intend to use an existing or new spin-out to take forward their idea, while a further 16 % of them plan to license technology to an existing company and 8 % to form an industrial partnership.

In 34 % of the cases the valorisation route was either not explained or it was too early to be planned or not applicable because of the very early stage of development of the project in terms of exploitation.

Figure 3.14: Commercialisation/Valorisation plans (based on 50 final reports)



Status of the project at the end of PoC period and fundraising

Many of the projects were still at a very early stage of development at the time of the final report. At the end of the PoC funding period, 24 % of the projects required more research in order to further develop the idea towards its valorisation; 16 % had initiated preliminary discussions with industry or other potential investors, without really concluding any concrete agreement; 12 % were still seeking potential investors, while 8 % were already negotiating with them.

Five of the projects had managed to raise funding from investors by the end of the PoC project:

a) In one case an industrial partner funded one PhD student and co-funded another one

b) In another project, companies had engaged in pre-commercial activities via studentship funding (to which the industrial partner contributed GBP 70 000-100 000) and the PI estimated that the total amount of funding leveraged from private sources as a result of the project would be at least twice as much as the PoC funding by the end of the negotiations

c) In a third project, a leading technology commercialisation and investment group had invested GBP 350 000 and led a new seed funding round of almost GBP 1 million into the spin-out, created as a result of the PoC. Other investors joined the first investment group in the investment round

d) In one more case, a new company was created and incorporated and a first round of financing had been concluded raising EUR 200 000

e) Finally, in a fifth project, the HI of the PoC invested EUR 75 000 via its industrial research fund. In addition, the final report mentioned the plan to establish a new company, having sealed an investment of EUR 500 000, potentially increased with another EUR 250 000.

In addition, in one more project, immediately after creating a spin-out, the team started looking for funding. A number of national, European and American Venture Capitalists (VCs) were approached and three parties were chosen. By the end of the PoC granting period, the spin-out was trying to raise EUR 1.5 million from these VCs, but nothing was yet concluded at the time of reporting.

Seven other projects had received more public funding for their PoC projects in the form of national follow-up funding, additional national start-up funding, additional national or EU grants, loans from national investment agencies or regional funds.

What was the PoC grant used for?

The ERC PoC grants provide additional funding to ERC frontier research grant holders to establish a proof of concept, identify a development path and an intellectual property strategy for ideas arising from an ERC funded project. The objective is to provide funds to enable ERC funded ideas to be brought to a pre-demonstration stage where potential opportunities for exploitation have been identified. The aim is that of conducting a proof of concept of an idea that was generated in the course of the ERC funded project, i.e. to undertake further work to verify, in principle, the opportunities for exploitation of this idea. This would help establish overall direction, viability, solve technical issues, clarify IPR position and strategy, provide feedback for budgeting and other forms of exploitation opportunity discussion, provide connections to later stage funding and cover initial expenses for establishing a company.

When looking at the work conducted by ERC grant holders within their PoC projects, most of them have used the grant for conducting more than one of these activities in parallel, but it transpires that a large majority (56 %) used the PoC mainly for activities aimed at seeking confirmation of their technology/product/process (often in combination with some other activities).

This means that verification of the innovation potential of the idea generated in the course of the ERC funded project has been done mainly by verifying its technical feasibility which, depending on the area of research, could include for example: full in vivo validation; development of a laboratory prototype, including progressing towards the fabrication of an actual device that operates under realistic conditions outside a laboratory; development of prototypical molecules or enzymes; demonstration of the expected performance of a technology or a product, also by showing its predictability and reproducibility; technical testing; successful development of a material; successfully establish a cost-effective protocol for industry.

In 30 % of the cases analysed it is reported that the PoC resources were used for market research in order to find out features which make the project's outcomes innovative or distinctive compared to other existing solutions (in more than 70 % of these cases, this activity was accompanied by activities aimed at verification of technical feasibility as explained above). In the majority of cases this activity was subcontracted and covered: market analysis; establishing the viability of the concept and its near term market potential; exploring alternative fields of application; investigating the market opportunity for a product or a technology and developing an appropriate strategy of its commercialisation.

In 22 % of the analysed cases, the PoC project devoted time and resources to the establishment of a spin-out company (and as mentioned above, 18 % of funded projects managed to concretely spin out a new venture by the end of the granting period). And another 16 % of projects established some kind of contacts with industry or other investors in the form of negotiating a licensing agreement to bring a technology to market; joining an FP7-funded consortium in partnership with large international companies; signing commercial partnerships in the project, including confidentiality agreements or other forms of collaboration.

Finally, four of the analysed projects, three of which in Life Science, have actually conducted further research activity following-up from the previous ERC frontier grant and concluded that it was too early in the process to establish contacts with potential investors because of the early stage of development of the concept in its way towards application.

At the other side of the spectrum in terms of development, six projects consisted in product or technological development and resulted in: further developing a technology so that it could immediately be applied; in the development and improvement of existing laboratory prototypes or applications into finished products ready to sell to customers.

In terms of the impact of a PoC project on training people, in 70 % of the cases the team included Post-docs and/or students (not specified if PhD students or undergraduates), with 46 % of cases having post-docs and no students and 14 % having students and no post-docs. The number of both post-docs and students per team varied between one and five. A follow-up of this analysis should trace the career path of the team members to see how many of them pursued a profession outside academia.

How successful were the PoC projects?

A large majority of the PoC projects (58 %) declared to have successfully reached the goals they had set at the moment of application and another 26 % to have done so moderately.

Another 16 % of the projects can be considered 'unsuccessful' in terms of reaching the established goals, even though the objectives of the PoC were fulfilled. With the grant, researchers are given the opportunity not only to find out as fast as possible if, from a commercial/valorisation point of view, their research can be interesting to investors, but also to find out if it is approaching a dead-end. The outcome of a Proof of Concept project can result in the failure of the commercial and technical feasibility of a technology, in the need for further experiments, in showing that certain compounds have strong inhibitory activity on cell lines of a specific tumor, but not on other cancer cell lines, or in proving that a studied phenomenon is more complex than originally foreseen and therefore more basic research is needed to understand and master it in view of commercialisation. These are some of the examples taken from the final reports analysed where the result of the PoC activities gave an indication to the PIs of a different line to take in view of the valorisation of their idea.

An early detection method for colorectal cancer

© Päivi Peltomäki

It is estimated that almost 3 million people in Europe, between 45 and 70 years of age, are at risk of familial colorectal cancer. This is mostly due to DNA mismatch repair (MMR) defects. Inherited MMR deficiency is known as Lynch syndrome. Individuals with this syndrome have up to a 70% risk of developing colorectal cancer in their lifetime, compared to 6% in the general population, and are at increased risk of several other cancers too.

The traditional diagnostic workflow to identify Lynch syndrome patients involves several phases, including tumour studies, blood tests, and proceeds typically via biopsy of an already established tumour. The diagnostic proposed by Prof Päivi Peltomäki in her PoC project, however, consists of only a single step: detection of decreased MMR capacity in a constitutional tissue. Contrary to traditional tests, the present method allows for the recognition of individuals with increased cancer susceptibility due to deficient MMR, even in cases where no family member has, yet, developed cancer and where genetic tests result in no detectable change.

ERC grantee: Päivi Peltomäki

Host Institution: Helsinki University (Finland)

ERC projects: Epigenome and Cancer Susceptibility (EPISUSCEPTIBILITY) + Functional DNA mismatch repair assay on normal tissue for the detection of hereditary cancer predisposition (DIAGMMR)

ERC call: Advanced Grant 2008 + Proof of Concept 2011

ERC funding: EUR 2.5 milion for five years + EUR 150 000 for one year

ERC calls 2014

ERC Starting Grant 2014

The 2014 ERC Starting Grant call was published in December 2013 with an indicative budget of EUR 485 million. In total, 3 273 proposals were received, distributed by domain as follows: 1 490 proposals in Physical Sciences and Engineering (45 %), 1 037 in Life Sciences (32 %) and 746 (23 %) in Social Sciences and Humanities. A total of 375 proposals were selected for funding (data as of February 2015). More than EUR 550 million was awarded with an overall average grant size of around EUR 1.5 million.

The share of female applicants to Starting Grant 2014 is 33 % of all applicants. The share of female Principal Investigators is 32 % of all selected Principal Investigators in the call. Their success rate is 11.4 % compared to 11.9 % for male Principal Investigators.

ERC Consolidator Grant 2014

The 2014 ERC Consolidator Grant call was published in December 2013 with an indicative budget of EUR 713 million. In total, 2 528 proposals were received, distributed by domain as follows: 1 205 proposals in Physical Sciences and Engineering (48 %), 797 in Life Sciences (31 %) and 526 (21 %) in Social Sciences and Humanities. A total of 372 proposals were selected for funding (data as of February 2015). More than EUR 713 million was awarded with an overall average grant size of around EUR 1.9 million.

The share of female applicants in the Consolidator Grant 2014 call is 27 % of all applicants. The share of female Principal Investigators is 28 % of all selected Principal Investigators in the call. Their success rate is 15.3 % compared to 14.9 % for male Principal Investigators.

ERC Advanced Grant 2014

The 2014 ERC Advanced Grant call was published in June 2014 with an indicative budget of EUR 450 million. A total of 2 287 proposals were received, distributed by domain as follows: 1 057 proposals in Physical Sciences and Engineering (46 %), 705 in Life Sciences (31 %) and 525 in Social Sciences and Humanities (23 %). The share of female applicants in the Advanced Grant 2014 call is 14 % of all applicants. The evaluation process is still in progress.

ERC Proof of Concept 2014

The 2014 ERC Proof of Concept call was published in December 2013, with a first deadline on 1 April, a second deadline on 1 October and a budget of EUR 15 million. A total of 182 proposals were received at the first deadline and 255 at the second one.

The evaluation process resulted in a total of 61 proposals being retained for funding at the first deadline and 59 at the second (data as of February 2015).

The share of female applicants in the Proof of Concept 2014 call is 14 % of all applicants. The share of female Principal Investigators is 13 % of all selected Principal Investigators in the call. Their success rate is 24 % compared to 28 % for male Principal Investigators.

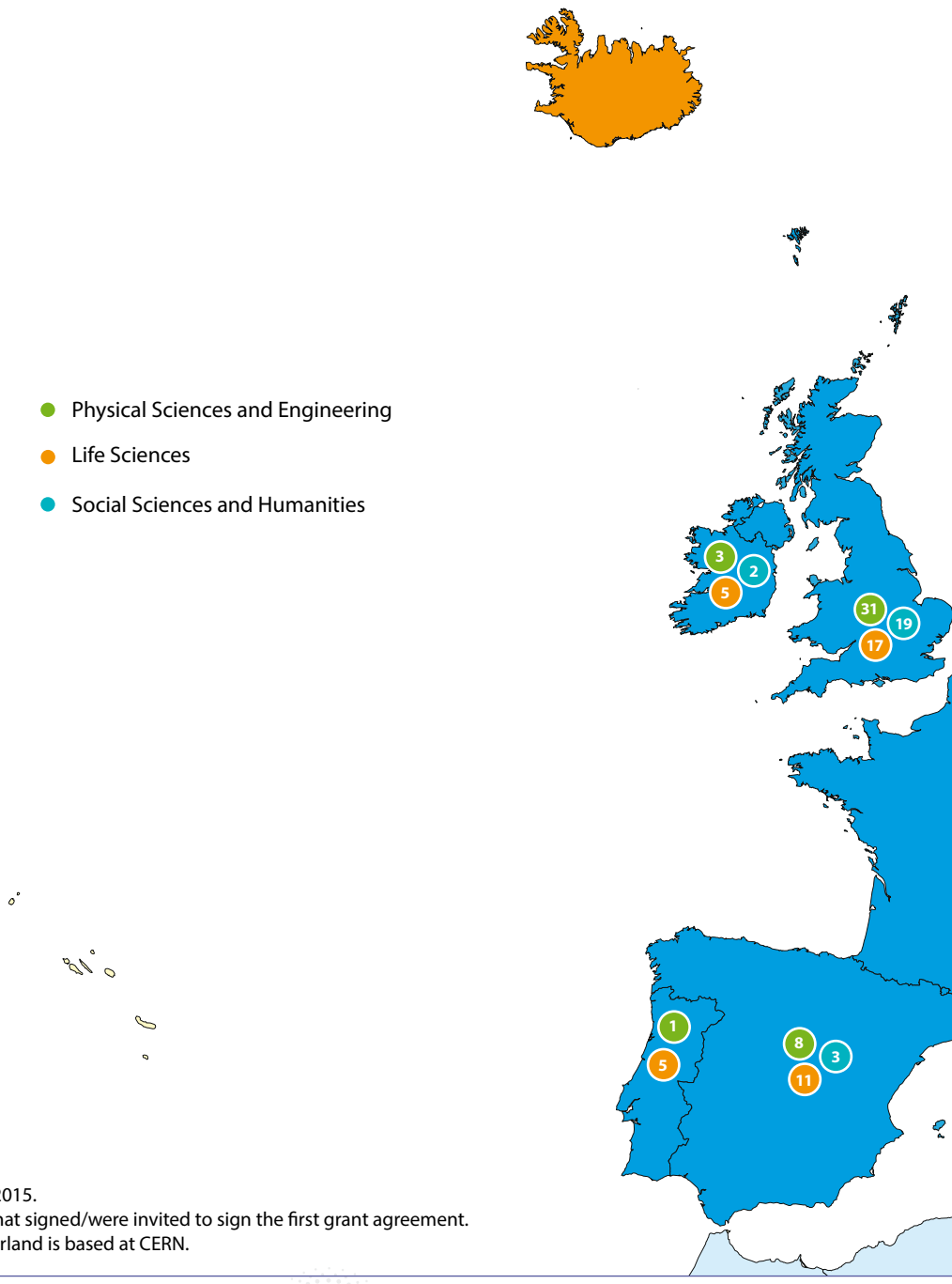
Host Institutions

ERC competitions are open to any researchers anywhere in the world who want to conduct research in an EU Member State or a framework programme Associated Country. After the completed ERC calls of 2007-2014, over 600 prestigious research institutions from 32 countries, both EU Member States and Associated Countries host at least one ERC grantee. One third of the host research organisations have at least five ERC grantees.

The majority of the ERC grantees (87 %) are hosted by institutions located in the EU (87 %), and 13 % have a Host Institution in an Associated Country.

The ERC list of grantees also displays 66 nationalities, as declared by the Principal Investigators at the time of granting. All EU nationalities are represented, 7 Associated Countries and 31 nationalities outside the European Research Area (ERA). US nationals are by far the most common with 171 grantees, representing 43 % of all non-ERA grantees. Overall 8 % of ERC grantees are nationals of countries outside ERA.

Figure 3.15: ERC Starting Grant: 2014 Call
Geographical distribution of grant holders



Data as of February 2015.
Host organisations that signed/were invited to sign the first grant agreement.
The project in Switzerland is based at CERN.

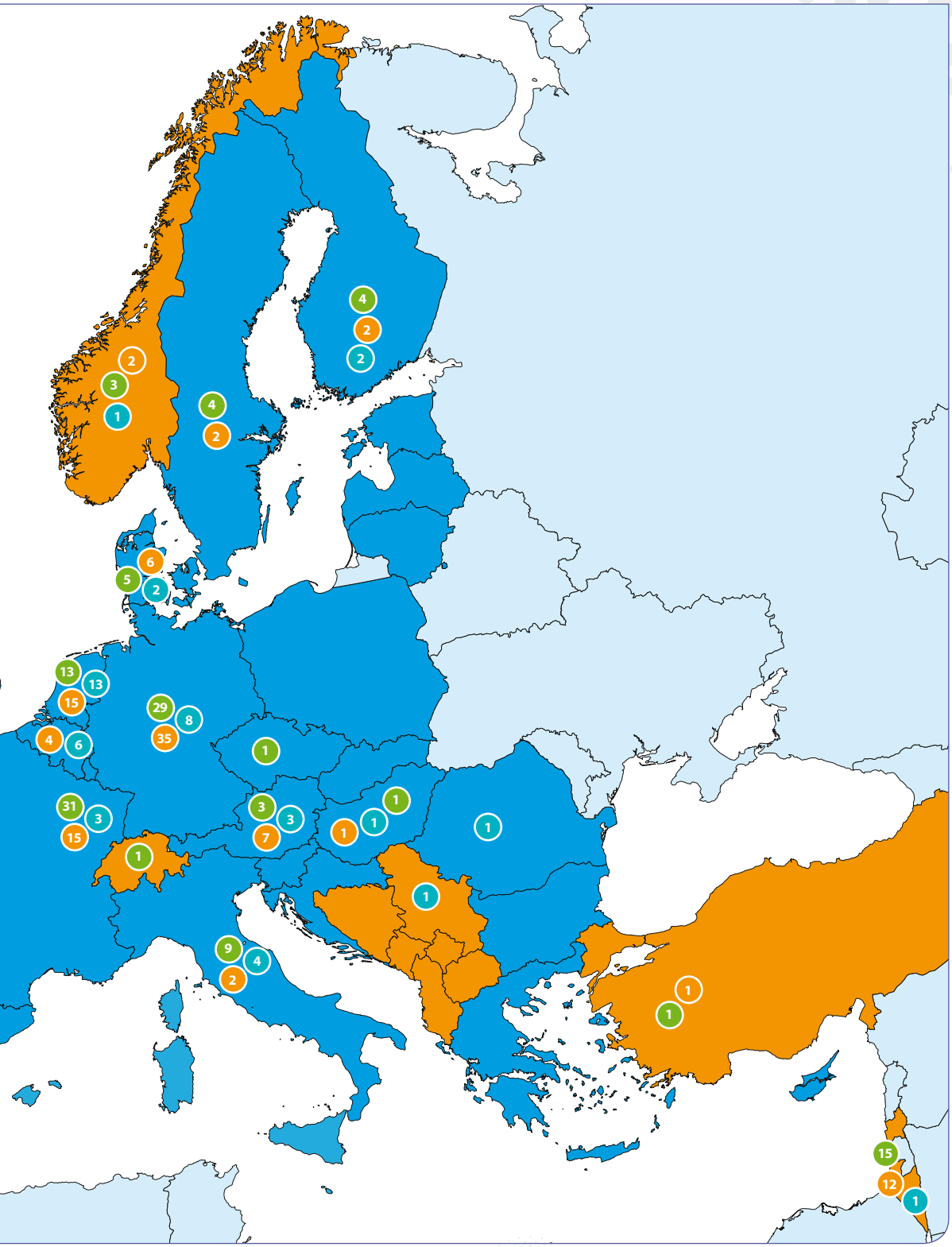

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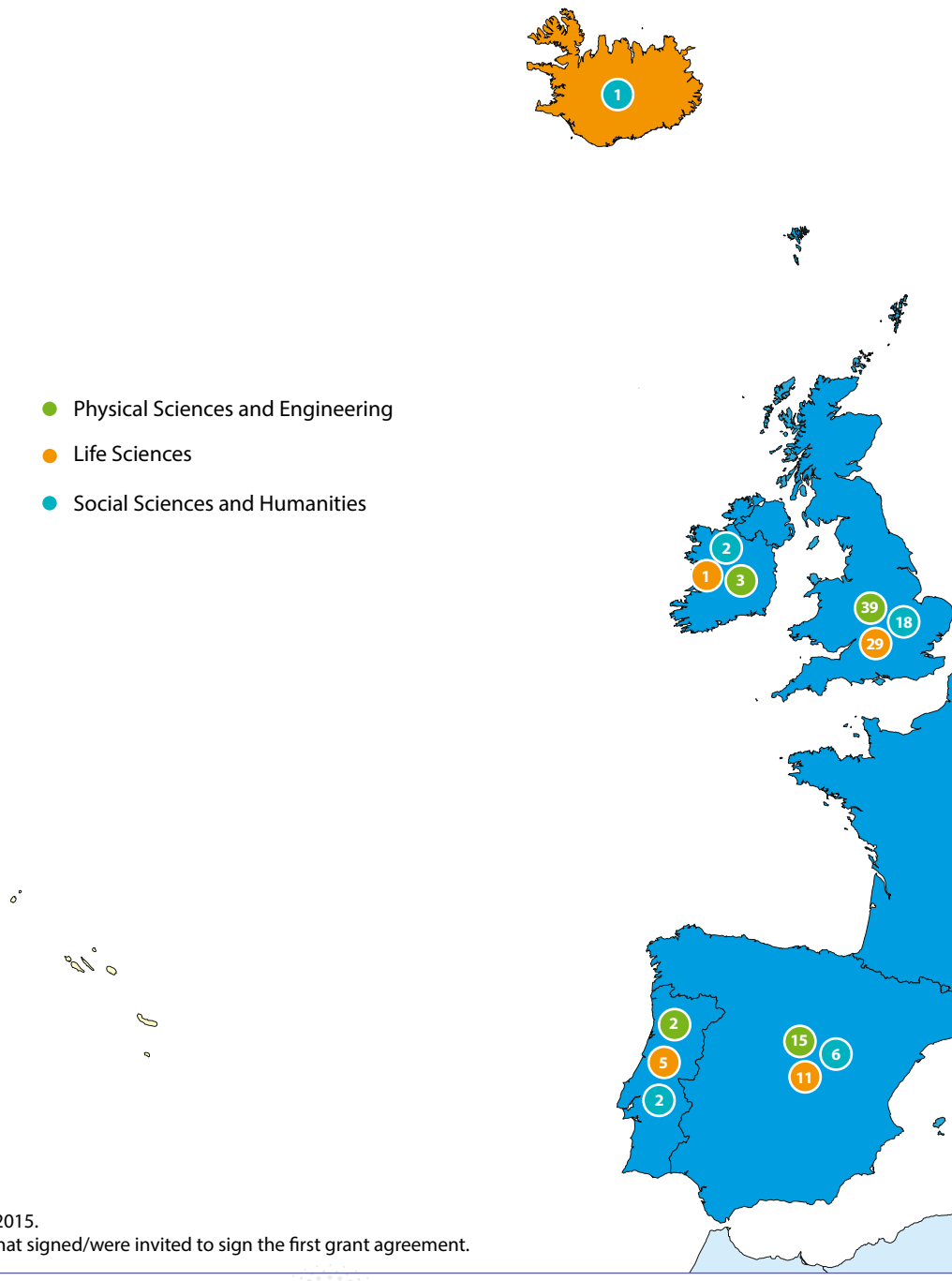
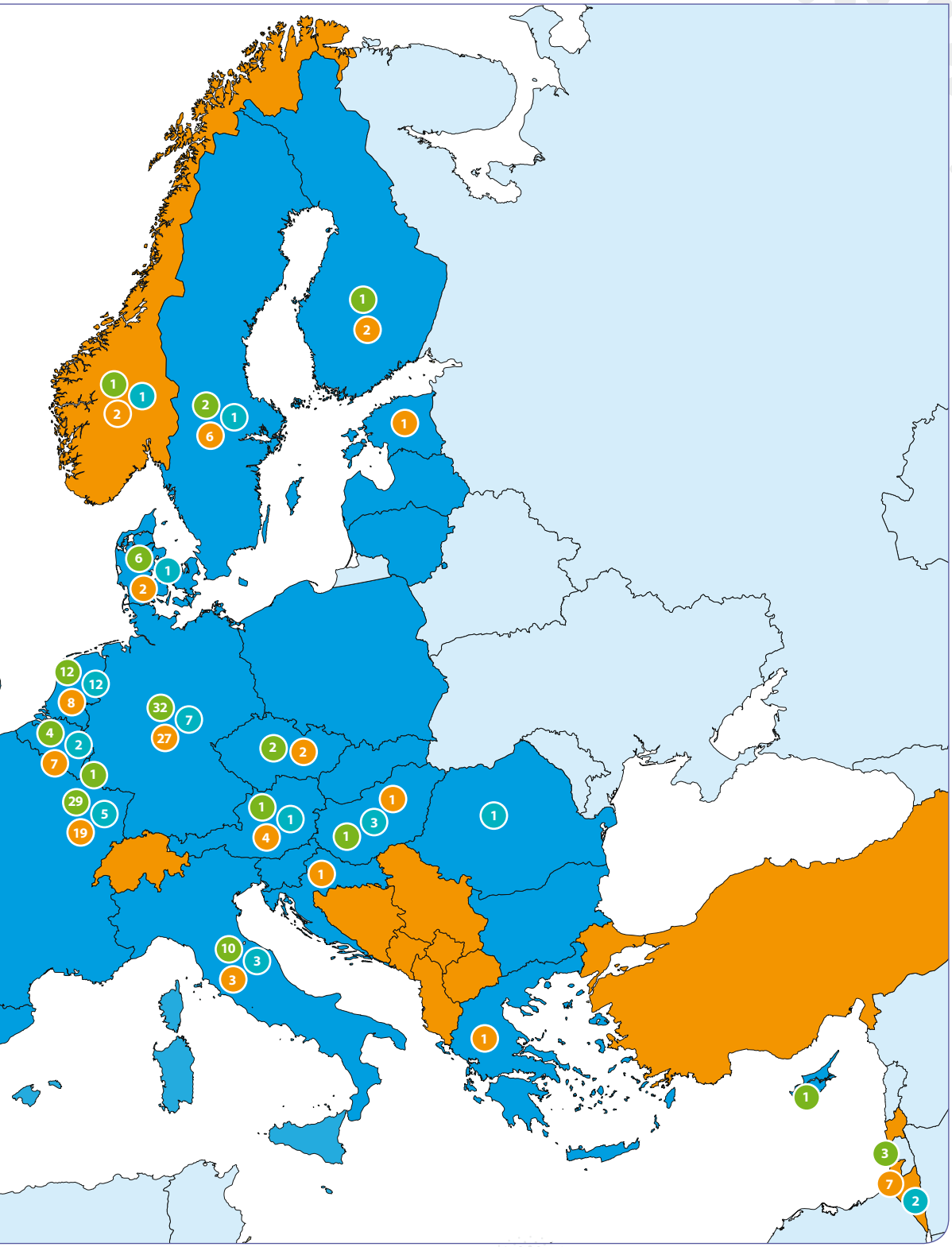
Figure 3.16: ERC Consolidator: 2014 Call
Geographical distribution of grant holders



Data as of February 2015.
Host organisations that signed/were invited to sign the first grant agreement.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ERC Scientific Council and Executive Agency

4.1 The ERC Scientific Council

The Scientific Council has the responsibility to establish the ERC's overall scientific strategy, the Work Programme and, from a scientific perspective, positions on the implementation and management of calls for proposals and evaluation criteria, peer review processes and proposal evaluation. It is made up of representatives of the European scientific community at the highest level, acting in their personal capacity, independently of political or other interests.

22 members were appointed in 2007 by the European Commission as founding members of the Scientific Council, selected on the basis of the criteria set out in Commission Decision 2007/134/EC of 2 February 2007 establishing the ERC [13].

This includes the requirement that the Scientific Council's composition would allow it to be independent, combining wisdom and experience with vision and imagination and reflecting the broad disciplinary scope of research. Individual members are chosen based on their undisputed reputation as leaders and for their independence and commitment to research. Their term of office shall be limited to four years, renewable once, on the basis of a rotating system which shall ensure the continuity of the work of the Scientific Council.

New Scientific Council members, appointed by the European Commission, are selected following a transparent procedure by an independent committee of seven highly respected personalities in European research. The identification procedure is agreed with the Scientific Council and includes consultation of the scientific community.

The names of the 22 members of the Scientific Council who served in 2014 can be found on pages 92 and 93 of this report. The list includes four members who started their term at the beginning of 2014, three of them replacing three of the founding members of the Scientific Council, including President Helga Nowotny, whose term in office came to an end in December 2013.

ERC President

Prof. Jean-Pierre Bourguignon

Jean-Pierre Bourguignon, an internationally respected mathematician — who was Director of the Institut des Hautes Études Scientifiques near Paris from 1994 to 2013 — took office as new President of the ERC on 1 January 2014 for a four year term, renewable once.

He was appointed by the European Commission following a transparent recruitment process based on the recommendations of an independent dedicated search committee and with the approval of the Scientific Council.

The role of the President is to chair the Scientific Council and ensure its leadership, to work closely with the ERCEA and to act as an ambassador for the ERC in the world of science. In order to help ensure even closer scientific governance of the ERC, under the new Horizon 2020 legislation, the ERC President is remunerated at a level commensurate with the Commission's top management and resides in Brussels for the duration of the appointment.

[13] The legal provisions for the identification of the Scientific Council members in H2020 are set out in the Council Decision establishing the specific programme implementing Horizon 2020 — the framework programme for Research and Innovation (2014-2020) of 3 December 2013 (2013/743/EU) / Article 7.1 and Section 1.3 of Part I of Annex I.

Meetings

The Scientific Council held regular meetings in 2014 both in Brussels and across Europe, usually at the invitation of national authorities. Meeting in different countries, either EU Member States or Associated Countries, is a way of making the ERC more visible. The meetings are also considered important events both by the national authorities as well as the local scientific and research community. Five Scientific Council plenary sessions were organised during the period between 1 January and 31 December 2014: in January, March and December in Brussels (Belgium), in June in Oslo (Norway) and in October in Zagreb (Croatia).

Following the recommendations of the panel on the review of the ERC's structures and mechanisms in 2009, the Scientific Council established two standing committees: the first providing guidance on conflicts of interest, scientific misconduct and ethical issues (CoIME) and the second dealing with the selection of evaluation panellists. The Executive Agency supported the operational activities of the two committees, which met two and three times respectively in 2014.

The members of the Scientific Council also meet in Working Groups (WGs) addressing specific issues. In 2014, various meetings of the ERC Working Groups on innovation and relations with industry, open access, strengthening international participation, gender balance and key performance indicators were organised by the Executive Agency. The WGs carry out analyses and contribute to the ERC's scientific strategy through proposals to be adopted by the Scientific Council in plenary in the areas covered by their mandates: to examine the ERC's relationship with the industrial/business sector and the impact of ERC-funded research on innovation; to develop an ERC position on open access; to ensure that the ERC is at the forefront of best practice with regard to the gender balance in research; to explore suitable mechanisms to increase the participation of researchers in ERC calls from countries outside the EU; to develop a roadmap for monitoring and evaluating the ERC's accomplishment of its mission, beyond indicators and targets, to support the short-, medium- and long-term policies of the Scientific Council.

A new group started its activities in 2014, the WG on widening European participation. It mission is to encourage Central and Eastern European countries to better nurture their scientific talent and invest more in research. It will raise awareness about the ERC schemes in these countries and better inform the research communities there about what ERC grants can offer scientists from the region and strengthen the participation of yet undiscovered scientific talent from there.

A series of working documents containing analyses and key messages on the specific issues dealt with by the WGs and by the standing committees were prepared by the Executive Agency, in collaboration with members of the groups.

Support to the Scientific Council

Due to the specific governance model, the Scientific Council's plenary meetings are prepared with the organisational and administrative support of the unit 'Support to the Scientific Council' in the Executive Agency. The unit also provides advice and analysis to facilitate the work of the Scientific Council to fulfil its tasks.

In response to relevant requests by the Scientific Council, the unit continuously advises them in their activities by providing analysis and intellectual input through the drafting of various documents, which reflect the Scientific Council's main orientations. These include the ERC annual Work Programme and this Annual Report. In 2014, briefings, presentations and data analysis on the ERC performance were prepared by the unit for the ERC President (67) and several members of the Scientific Council (46) for their participation in various events worldwide. A series of other working documents and in-depth analysis were prepared during the year by the support unit, providing advice and assistance to the work of the Scientific Council and its standing committees and Working Groups.

The ERC Board

To further assure its liaison with the European Commission and the Executive Agency, the President and Vice-Presidents of the Scientific Council together with the Director of the Agency meet regularly as the ERC Board. The senior management of the Agency also attends these meetings. The board met nine times in 2014, in particular to prepare or give follow up to meetings of the Scientific Council.

Case reporting on scientific misconduct and conflict of interest

The ERC strategy on scientific misconduct provides for record keeping and reporting of cases in the ERCEA annual activity report and in the ERC Scientific Council Annual Report. The following is a report of cases dealt with in 2014, which include five cases of alleged scientific misconduct and several cases of peer reviewers' conflict of interest.

Cases of scientific misconduct

Scientific misconduct committed in the past

A PI of an ongoing ERC-funded project was dismissed by his/her HI on the basis of accusations of breaches of research integrity in relation to work entirely conducted at a previous HI. Before taking any final decision on the case, the ERCEA suspended the project for one year, waiting for the conclusions of an investigation being conducted at the previous HI of the PI. During the period of suspension, the PI did not propose a new HI to continue with the implementation of the project.

The final judgement of the Executive Board of the concerned HI was 'to be of the opinion that a violation of academic integrity has occurred'.

The ERC decided that the project should be terminated based on the fact that the PI was not hosted nor employed by any HI, his/her employment contract with the HI having been terminated based on the justification that his/her scientific conduct was not up to the HI's standards of scientific integrity, leadership and quality. Termination took effect retroactively as from the date of the termination of the employment contract by the HI.

Plagiarism in ERC application

A panel member who was also an ERC grant holder informed the ERCEA of a potential case of plagiarism from his/her own past ERC successful proposal in an application he/she was assigned to review in 2014. The ideas behind the two proposals were different and the alleged plagiarism concerned a set of specific sentences. The CoIME accepted the justification of the applicant that he/she had read several ERC projects online in order to prepare his/her own proposal, and especially to fit the expected format of the application. In so doing, the style and writing of some of them might have influenced his/her own, but that was limited to few standard sentences and did not concern the originality of the ideas. It was therefore concluded that no misconduct had taken place.

Plagiarism in ERC application

Following the normal procedure of checking applications against previous ERC proposals for similarity, the ERCEA found one application with a high similarity (52 %) to a proposal which had been funded by the ERC in the past. A thorough analysis of the two proposals showed that the 2014 applicant had copied verbatim in his/her application the previous successful ERC proposal that had been made available to him/her by the original author as an example of what a successful ERC grant proposal could look like. In addition, the original research proposal was not quoted as a reference in the 2014 application documents. The concerned proposal was in the meantime evaluated and rejected on scientific grounds, but the CoIME still considered this behaviour unacceptable and a letter expressing this concern was sent to the Rector of the HI of the applicant and to the applicant in copy.

Suspected double funding

In a 2014 application, some parts of the proposed research overlapped with a research project funded by a national funding agency. The CoIME analysed the matter and concluded that an overlap in itself was not disqualifying, and such things happen from the inner logic of a research carrier. A more serious issue identified was possible double funding, if the applicant would charge the same activities to the ERC and the national funder. The CoIME's recommendation was to proceed with the evaluation and invite the applicant to the interview, and at the same time inform the evaluation panel about the issue. A note was prepared for the signature of the ERC President to be sent to the applicant with copy to her/his HI expressing the ERC reprimand towards the behaviour of the applicant.

Alleged misconduct committed in the past

After the completion of a step 2 panel meeting, the ERCEA was informed that a successful proposal was in fact the resubmission of a proposal submitted in 2013 by the same applicant, the originality of which was questioned at that time by a remote referee. During the interview in the 2013 call, nothing indicated that the proposal was not original and in fact it was scored as fundable, but just few positions below the funding threshold. As the proposal was not funded no further inquiries were pursued at the time. After collecting all the documentation, the 2014 case was consulted with the CoIME and analysed by the ERCEA Integrity Standing Committee. The conclusion was that no scientific misconduct had been committed.

Cases of Conflict of Interest (CoI)

Company support to an applicant

After the first step of evaluation, a reviewer informed the ERCEA that he/she was a consultant of a company supporting one of the proposals he/she had evaluated, stating that he/she did not know of such project through this company (discovering the company's support only when evaluating the project) nor did he/she know the applicant. The supporting company would not be a beneficiary of the project if funded, but wrote a letter which was annexed to the proposal supporting the research to be made by the applicant. As usual, the supporting letter was not distributed to the evaluators by the ERCEA, but the support of the company was nevertheless mentioned in the proposal itself.

The recommendation of the CoIME was that being a consultant to a company which supports a project, even without any obvious financial profit, represents a CoI. Consequently, the 'out of room' CoI rule was applied at least a posteriori, i.e. the panel member's evaluation of this specific proposal was discarded.

CoI with brother in law

The CoIME discussed the case of a member of a 2014 evaluation panel, whose brother-in-law had applied to the same panel. Apart from the close family tie, the two were also in the same department and collaborated. This was considered an 'out of the call' CoI and the evaluator was asked to step down from the panel.

CoI with spouse

During the CoI checks for proposals submitted to a certain panel, it was found that almost all publications of an applicant were in co-authorship with one of the evaluators in that panel. The ERCEA asked the panel chair for clarification and he/she clarified that the two were married and major collaborators. There was no answer from the panel member when asked for clarifications, but the applicant asked for a panel transfer of his/her application. The CoIME considered this as an 'out of the call' CoI and the panel member was asked to step down from the panel.

CoI — panel member mentioned in application

A member of one of the 2014 panels was mentioned several times in one of the proposals submitted to that panel. Particularly alarming were references in the proposal to the crucial nature of the help expected from the panel member for the success of the project, and a potential financial support to a post-doc working with the panel member.

The CoIME judged this conflict of interest as strong enough to be considered as an 'out of the call' CoI, due to a very close relationship between the applicant and the panel member who was therefore asked to step down from the entire call.

CoI — collaboration

An ERC panel member was listed in a national grant awarded in 2013 as one of the Co-Investigators to a Principal Investigator who then applied for a 2014 ERC grant to the panel where the concerned panel member was serving. In addition, the panel member also contributed to three multi-authored papers with the applicant published in 2010.

Claims were that in practice there was no joint work between the panel member and the applicant, they never met or had discussions about the national grant, because the last one left the country shortly after the grant was awarded, did not do any work on the grant or use the money and there were no outputs with his/her name associated with it.

The CoIME concluded that this was an 'out of the room' conflict of interest, since the co-publications and the joint application to the national grant indicated a collaborative relationship between the panel member and the applicant.

Coaching applicants

A member of a 2014 panel admitted to have coached an applicant from his/her same institution for the ERC step 2 interview. The panel member had declared a CoI because they both came from the same institution, but was still doing mock interviews with the applicant for an interview that took place in the panel where he/she was serving. The proposal was finally not selected for funding, but as a follow-up of this case, the CoIME discussed the need to draft a text to be provided in the briefing to evaluators clarifying that this practice is not allowed. Similar rules on 'coaching' practices by members of the Scientific Council should also be clarified.

The CoIME underlined that in addition to their main role the ERC Scientific Council members, panel chairs, and panel members are natural ambassadors of the ERC mission. In fulfilling this task they come often into contact with grant applicants and regularly face questions concerning the ways to succeed in the ERC competitions. In such a situation, it is welcome to explain, to a group or an individual, the principles of evaluation and the factors which may help the applicant to succeed. It is not acceptable, however, to become involved in the preparation of an individual proposal, especially to reveal panel internal practices.

Cases where the last paragraph of Article 2.2 of the Code of Conduct for evaluators applies

According to the Code of Conduct for evaluators, in the following situations the ERCEA, in consultation with the CoIME, has to decide whether a conflict of interest exists, taking account of the objective circumstances, available information and related risks. The decision may be that the evaluator takes part or not in the evaluation of the given proposal or of the entire call when the evaluator:

i. was employed by one of the applicant legal entities in the last three years

ii. is involved in a contract or grant agreement, grant decision or membership of management structures (e.g. member of management or advisory board etc.) research collaboration with an applicant legal entity or a fellow researcher, or had been so in the last three years

iii. is in any other situation that could cast doubt on their ability to participate in the evaluation of the proposal impartially, or that could reasonably appear to do so in the eyes of an external third party.

The CoIME discussed more than 20 cases of this type of CoI, with particular focus on cases of panel members being members of Advisory Boards and cases of scientific collaboration between panel member and applicants. The 'out of the room' rule was applied in all cases.

4.2 The ERC Executive Agency

The Executive Agency implements the actions under Part I 'Excellent science' which relate to the specific objective 'Strengthening Europe's science base in frontier research' of the European Union's Horizon 2020 framework programme for Research and Innovation, according to the strategies and methodologies established by the independent ERC Scientific Council.

The Executive Agency operates on the basis of the powers delegated to it by the European Commission, which has the ultimate political responsibility for the implementation of the Specific Programme implementing the framework programme Horizon 2020.

Structure

Pablo Amor
Director ERCEA

The organisational structure of the Agency follows its operational and horizontal objectives. It consists of two operational departments (Scientific Management Department and Grant Management Department) and one Resources and Support Department. The accounting officer, the internal audit office, the Communication Unit as well as the Support to the Scientific Council Unit report directly to the Director (see page 98).

In 2014 the Scientific Management Department went through a small re-organisation. While the Unit 'Process Management and Review' and the Unit planning and coordinating the executions of all calls (Starting, Consolidator, Advanced, Synergy and Proof of Concept grants) remained as they were before, the Unit providing support to the evaluation panels has been split into three different Units following the three ERC research domains. They carry-out respectively the scientific evaluation of proposals and the monitoring and follow-up of the funded projects in the domain of Life Sciences, Physical Sciences and Engineering and Social Sciences and Humanities.

Steering Committee

Robert-Jan Smits
Director DG RTD

The Steering Committee of the ERCEA is the body that supervises the operations of the Agency. It meets four times a year and adopts the Agency's annual Work Programme, administrative budget and annual activity report.

It is composed of five members, appointed by the European Commission for a (renewable) period of two years. The Steering Committee in office until the end of 2014 was chaired by Robert-Jan Smits, Director-General of the Directorate-General for Research and Innovation (DG RTD) and comprised two representatives of the European Commission — the Director of DG RTD Directorate A 'Policy Development and Coordination' and the Director of DG HR Directorate A 'Organisation and Executive Staff' — as well as two members of the ERC Scientific Council, Professor Sierd Cloetingh and Professor Tomasz Dietl.

The ERCEA Steering Committee met four times in 2014. The first meeting took place in February 2014 in order to approve the ERCEA provisional accounts 2013, the ERCEA draft administrative budget 2015 and the Implementing Rules (IR) to the Staff Regulations.

In June 2014, the Steering Committee took five decisions, namely on the ERCEA final accounts 2013; on the revision of the ERCEA financial circuits for the operational budget; on the Implementing Rules to the Staff Regulations by analogy to include the recently adopted IR on working time; on the reclassification of Contract Agents and on the Temporary suspension of General implementing provisions; and on transitional measures at the ERCEA (Decision StC230614/7);

In October 2014 the Steering Committee took a decision on the update of the ERCEA Implementing Rules concerning the Data Protection Officer and in December 2014 three decisions, namely on the ERCEA annual Work Programme 2015 which is considered adopted once approved by the Commission; on the ERCEA administrative budget 2015; and on the nomination of the Chief Accounting Officer for the ERCEA.

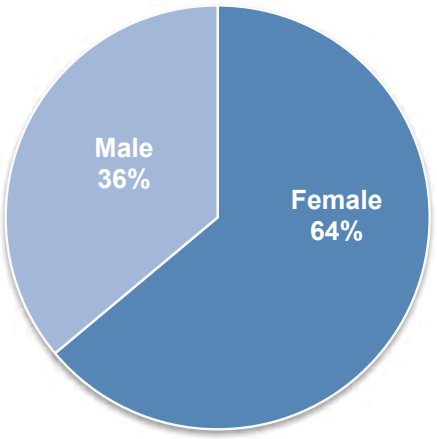
In every meeting of the ERCEA Steering Committee, the ERCEA Director provides an extensive state of play of the activities of the Agency.

Staff and recruitment

The 2014 operating budget provided for the employment of 100 temporary agents, 280 contract agents and 9 seconded national experts, adding up to a total of 389 agents.

At the end of December 2014, the Agency employed a total of 388 agents: 99 temporary agents, 277 contract agents and 12 seconded national experts.

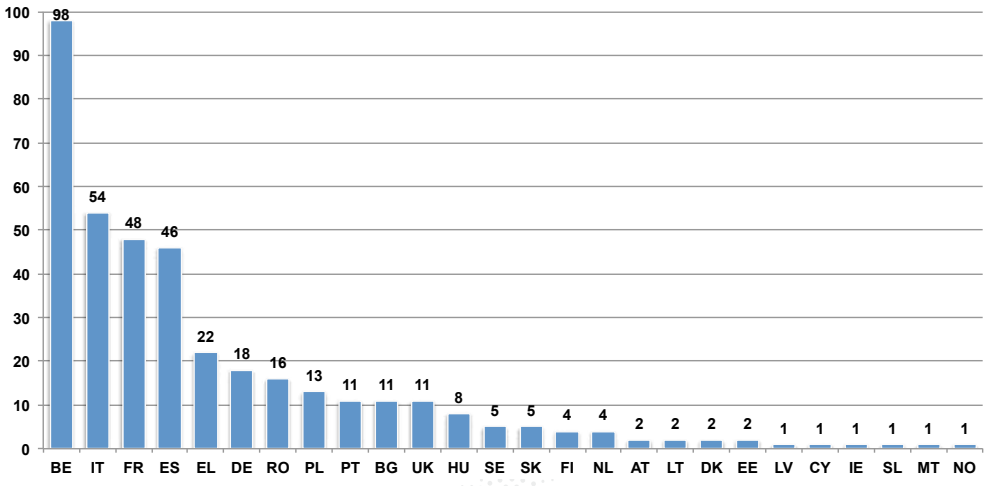
Figure 4.1: Gender balance of ERCEA staff



Statistics of December 2014 show that the Agency employs 64 % women and 36 % men. As regards the gender balance of highly specialised staff (temporary agents and contract agents function group IV), 57 % of the posts are occupied by women. At the end of 2014, the ERCEA employed nationals from 26 EU Member States and one EFTA Member State.

The staff allocation of 2015 plans that the Agency will grow by 36 new staff out of a total of 140 new posts in the years up to 2020.

Figure 4.2: ERCEA staff by nationality



4.3 Communication

The ERC's Communication team intensified its activities during 2014, to inform the scientific community, the national and international media, policymakers, as well as the general public, of the ERC's funding schemes in 'Horizon 2020'.

Increased efforts were made to widen participation in ERC calls and to strengthen its image both in Europe and abroad. This included publishing ERC press announcements and numerous research stories, producing videos featuring ERC-funded researchers, participating in scientific events across the globe, actively promoting the ERC on social media, and other dissemination activities.

Some 27 press releases and highlights have been issued this year. They covered topics such as the ERC 2014 calls results, as well as the positive news that three ERC grantees were awarded Nobel Prizes and two ERC grantees were awarded Fields Medals.

Media coverage of the ERC amounted to 7 000 media items, exceeding the annual target of 4 500. In particular, ERC press announcements attracted substantial coverage, with reports published by various key press agencies, daily newspapers, scientific publications and radio/TV broadcasters. Some examples include Austria Presse Agentur (AT), El País (ES), La Recherche (FR), Radio Renascença (PT), RTÉ News Ireland (IE), Tagesspiegel (DE), BBC World (UK/international) and TV China Xinhua News (CN), to name but a few.

In addition, a selection of ERC stories was made available to journalists alongside complementary audiovisual material (videos, podcasts, images). For example, an ERC story about 'Poppy': 'the 3-D printed robot set to inspire innovation in classrooms', generated 88 articles in 25 countries — within only two weeks of the ERC press highlight and the European Commission press release. Media covering it included Business Standard (IN), Corriere Comunicazione (IT), Di-ve (MT), El Espectador (COL), Invdes (MX), Gazeta Wyborcza (PL), Generation Robots (FR), La Stampa (IT), the Scientific American (US), the news agency SINC (ES), and Sega (BG).

Concerning presence on social media, the ERC reached more than 11 400 followers on Twitter and close to 7 000 likes on Facebook. Facebook in particular was increasingly used as a dynamic tool to showcase ERC project results and a new partnership with scientific programme ARTE Future was initiated on Facebook during the year to help increase the ERC's visibility to a broader audience. An ERC LinkedIn account was also created during the year.

On the ERC website, 26 stories about ERC-funded research were published and promoted in cooperation with other European Commission Directorate-Generals and its representation offices in Member States. For example, in April, a story about the 'Flowmachines' software package, which enables creators to produce new music masterpieces using the work of their preferred authors, was promoted in this way. This project was covered by daily newspaper Rzeczpospolita (PL), radios Deutschlandfunk (DE) and the BBC (UK) as well as computer magazine 01.net (FR).

During 2014, the ERC website was visited by approximately 500 000 visitors. In December 2014, a mobile version of the ERC website was made available and provides an optimal viewing experience, easy reading and navigation across a wide range of mobile devices.

Various events took place across Europe this year. Most importantly, ERC President Prof. Jean-Pierre Bourguignon gave a keynote speech at the European Parliament hearing of the Committee on Industry, Research and Energy (ITRE), and emphasised the need for frontier research under 'Horizon 2020'.

In March, the ERC took part in the second edition of the Innovation Convention, also held in Brussels and described in Section 1 of this report; the funding of the 4 000th grantee attracted some media attention, with publications in, for example, El Mundo and press agency SINC (both ES).

The ERC was invited by the Norwegian and Croatian Academies of Science and by the national Ministries to hold two ERC Scientific Council plenary meetings there. Public events and press conferences were organised with high-level national representatives and ERC grantees to encourage participation in ERC calls. After the Scientific Council plenary meeting in Zagreb, 10 items of coverage were published in Croatian media, including by the national radio and TV broadcaster, regional newspapers, and online news sites.

Visit of ERC President J-P. Bourguignon and N. Canny to Royal Irish Academy, Dublin, 17 November 2014

ERC Grantees Arthur Avila and Martin Hairer Fields Medal Awardees at ICM, Seoul August 2014

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© TEDx Brussels/Scorpix

Prof. Ulf Leonhardt

The ERC also joined several Euraxess events held in Poland and Czech Republic where National Contact Points and staff from the ERCEA contributed to the information and awareness raising campaign.

During the Italian Presidency of the EU Council, the ERC President attended the Genoa Science Festival to discuss scientific excellence with national and local authorities. He highlighted the importance of supporting young researchers for the future of Italy and of Europe. Presentations and demonstrations were carried out by three ERC grantees. The event received positive media coverage, for example, in La Repubblica, Il Sole 24 Ore, Quotidiano Nazionale and wired.it. Additionally, video interviews in Scienza in rete were conducted with the ERC President and ERC grant holders.

Later in the year, the ERC President and ERC Scientific Council Members also made visits to Ireland and Scotland, where various social media activities were organised around key lectures and meetings. Notably Prof. Bourguignon delivered the prestigious MacCormick European Lecture at the Royal Society of Edinburgh and gave a keynote address at the Royal Irish Academy. The ERC was mentioned over 300 times on Twitter in the context of the Dublin event. An open editorial by Prof. Bourguignon was published in the Irish Times, and three additional news pieces covered the event, notably in the Irish Times and Silicon Republic. During the Edinburgh visit the ERC President was interviewed on the BBC shows 'Good Morning Scotland' (radio) and 'Scotland 2014' (TV), and by Holyrood Magazine.

In December, for the first time the ERC co-sponsored the TEDx Brussels conference, one of the largest TEDx events, during which five ERC grantees, including a Nobel Prize winner, presented their ground-breaking research to almost 2 000 participants. More than 20 reports mentioning ERC participation at the event were published, for example in Metro (BE), Capital radio (ES), RAI TV (IT), The Independent, Daily Mail and a BBC World podcast (UK). The TEDx talks were posted on YouTube giving further visibility to the researchers and the ERC. The TEDxTalks YouTube channel has almost two million subscribers and ERC speaker Prof. Coleman's talk alone has already received over 3 500 views.

Four issues of the ERC's external electronic newsletter, 'Ideas' are published each year

Several brochures and flyers were produced featuring ERC projects and other general information

On a European level, this year the ERC took part in various debates, nurtured relations and presented its opportunities to researchers at numerous international scientific conferences, events and exhibitions, as well as career fairs and workshops such as the Euroscience Open Forum (ESOF) or the World Economic Forum (WEF).

One of the highlights of the year was the ERC's participation in the World Economic Forum in Davos, as described in Section 1 of this report. A press conference was held with ERC representatives and the Belgian Prime Minister Elio Di Rupo, resulting in wide coverage by press agency BELGA, De Standaard, numerous other major Belgian newspapers, and Het Financieele Dagblad (NL), Swiss Radio and Television (CH) prime time news, Scientific American (US), and China Xinhua News, for example.

The work of representatives of the ERC at the sixth edition of ESOF, held in Copenhagen in June, was highlighted in a brochure, videos made available on an ERC stand and a press conference was organised for the occasion, which resulted in around 30 articles in publications such as RTÉ News Ireland (IE), press agency Xinhua (CN) and in financial portal Web Finanser (SE).

In Asia, the ERC debated innovation with leading young talent at the 'Annual Meeting of the New Champions' held in September in Tianjin (CN), where a press conference resulted in 30 articles in major Chinese media, such as First Financial Daily, Tianjin TV and Guanming Daily. The ERC President also wrote an open editorial for the China Daily advocating boosting scientific exchange and frontier research.

The ERC attended two other events in Asia, which took place in August. At the International Congress of Mathematicians (ICM) in Seoul, South Korea, the ERC was represented by President Jean-Pierre Bourguignon and Vice-President Pavel Exner.

At the XVIII International Sociological Association (ISA) World Congress of Sociology held in August in Yokohama, Japan, Prof. Michel Wieviorka, member of the ERC Scientific Council and former President of the ISA, spoke in a session with other former ISA Presidents and reflected on the past and future of sociology. ERC sessions and booths were organised at both conferences in order to attract applicants from outside Europe.

In North America, for the seventh time the ERC attended the annual meeting of the American Association for the Advancement of Science (AAAS) conference held in Chicago (US). The ERC President, two ERC Scientific Council members, Profs. Klaus Bock and Nils Chr. Stenseth, as well as two ERC grantees contributed. The ERC took part in one public policy symposium, one exhibitor-sponsored workshop, two press briefings and several side-events. For this occasion, two ERC stories showcasing grantees present at the event were published and picked up by several media outlets, including press agency APA and newspaper Der Standard (both AT).

The ERC also participated in the American Association for Cancer Research in San Diego, the American Society for Cell Biology in Philadelphia, and the Association of American Geographers Annual Meeting in Tampa. At these events, brochures featuring a selection of ERC projects in the fields were distributed, to increase the ERC's visibility.

In addition, the ERC actively contributed to the 2014 editions of the Destination Europe conferences in Boston, Montreal and Atlanta, organised by DG Research and Innovation.

In the context of overseas outreach, an advertisement of the ERC's funding opportunities, addressed in particular to a non-European audience, appeared in Science magazine on 28 November 2014 to inform the science community about the new calls. In parallel, a banner campaign ran for one month on the Science career website, which has five million visitors per month.

During 2014, ERC Scientific Council members, grantees' team members, and ERCEA staff have greatly contributed to more than 15 events and information campaigns, such as the Euraxess Links Events carried out this year in China, Japan, Singapore and Thailand. Over 350 participants from across ASEAN region attended the twin Euraxess events.

The National Contact Points (NCPs), based across Europe and serving as information multipliers to potential applicants, were continuously kept informed about ERC calls and changes via email, through bi-annual meetings organised in Brussels, and they assisted in answering questions received from ERC grantees or potential applicants. A few more non-ERA NCPs have been nominated this year.

Several videos were also produced and effectively used in 2014, including an informative 'Step by Step' video guide to ERC grants. These videos were used with a focus on the national research angle in conjunction with the organisation of an event taking place, for instance, in Greece (which coincided with the launch of Horizon 2020), Italy and Croatia.

As planned, four editions of the ERC's e-newsletter 'Ideas' were published to highlight ERC-funded research and its results to more than 27 000 subscribers, as well as to give an insight into the ERC's mission and policies. News, such as appointments of new ERC Scientific Council members and ERC presence at events worldwide, were also covered.

Lastly, the ERC Communication team launched a 'Coordination and Support Action' call to identify and implement novel ways to highlight the work funded by the ERC, and to reach out to a wider public.

More than 7000 likes in 2014. The ERC Facebook page puts the spotlight on ERC grantees and their projects

Staying in touch with our professional network

A tool to provide timely information on calls for grants and updates during events, counting more than 12700 followers

Mobile version of the ERC website for optimal viewing experience, easy reading and navigation

Outlook for 2015

ERC calls and main features in 2015

Three ERC frontier research grants will be available under Work Programme 2015: Starting; Consolidator; and Advanced Grants.

ERC Principal Investigators will also continue to be able to apply for the Proof of Concept grant.

From the 2015 calls, the ERC will no longer pre-define budget envelopes for the three main scientific domains (Life Sciences, Physical Sciences and Engineering and Social Sciences and Humanities). Instead the budget allocation to each panel will be determined purely by demand.

Some further measures to promote gender balance will also be introduced on the recommendation of the ERC's working group of gender balance:

- Effective limit on the number of children that count towards the eligibility extension for Starting Grant and Consolidator Grant removed.
- Care of sick relative now a reason for extension of the eligibility window for Starting Grant and Consolidator Grant.
- Applicants now restricted to highlighting maximum 5/10 publications in their track record emphasising quality over quantity (they will still provide their full academic CV separately).

Evaluation of the Synergy Grant schemes

The ERC will assess the Synergy Grant calls launched as a pilot phase in the 2012 and 2013 Work Programmes, before deciding on any future calls.

The aim of the assessment is to provide an opinion on the relevance and usefulness of the two pilot Synergy calls. The assessment will form the basis of the Scientific Council's informed decision on the possible inclusion of a Synergy Grant type of call in the portfolio of existing funding schemes in the future. The analysis will be conducted by members of the ERC Scientific Council, assisted by independent experts and the ERCEA.

Other actions

A qualitative evaluation of the frontier nature of ERC funded research, and support for a series of actions to highlight the work funded by the ERC and reach out to a wider public will be launched by the Scientific Council with the help of experts and the ERCEA.

Annexes

Members of the Scientific Council in 2014

Prof. Jean-Pierre BOURGUIGNON

- President, European Research Council
- Director Emeritus of Research at CNRS
- Director, Institut des Hautes Études Scientifiques (IHÉS), Paris, 1994-2013
- President, Société Mathématique de France, 1990-1992
- President, European Mathematical Society, 1995-1998
- Doctor Honoris Causa: Keio University, Japan and Nankai University, China
- Main research field: Mathematics

Prof. Pavel EXNER

- Vice-President, European Research Council
- Scientific Director, Doppler Inst., Prague
- JINR Prize in Theoretical Physics
- Member, Academia Europaea
- Main research fields: Mathematical Physics, Operator Theory, Quantum Systems

Prof. Carl-Henrik HELDIN

- Vice-President, European Research Council
- Director Ludwig Inst. for Cancer Research
- Prof. Molecular Cell Biology, Uppsala Uni.
- Large Medical Prize K. Fernströms, 1993; Pezcoller Award in Cancer, AACR 2002
- Main research fields: Cell Biology, Cancer

Prof. Nuria SEBASTIAN GALLES

- Vice-President, European Research Council
- Professor in Psychology, Dept. of Technology, Uni Pompeu Fabra, Barcelona
- Main research fields: Neural Cognitive Mechanisms underlying learning & language processing, special emphasis: Bilingual Populations

Prof. Klaus BOCK

- Danish Ministry of Science, Innovation & Higher Education
- Chair, Danish National Research Foundation, 2004-2012
- President , Danish Academy of Technical Sciences, 2009-2011
- Awards: International Carbohydrate Award 1986, Alexander von Humboldt for Research, Samuel Friedman Foundation Rescue

Prof. Nicholas CANNY

- Professor emer. History, Galway, Ireland
- Former President Royal Irish Academy, Fellow British Academy;
- Member: Academia Europaea, American Philosophical Society;
- Irish Historical Research Prize 1976 and 2001
- Main research fields: Early Modern History, Atlantic History

Prof. Dr Sierd CLOETINGH

- Head Tectonics Group, Dept. of Earth Sciences, Faculty of Geosciences, Utrecht Uni.
- President International Lithosphere Programme;
- President Academia Europaea
- Medal Stephan Mueller, European Geosciences Union & Leopold von Buch, German Geological Society; Chevalier de la Legion d'Honneur 2004
- Main research fields: Earth sciences, Tectonics

Prof. Tomasz DIETL

- Head of Laboratory for Cryogenic and Spintronic Research, Inst. of Physics, Uni. Warsaw
- Polish Academy of Sciences, Ordinary Professor at the Inst. Theoretical of Physics
- Agilent Technologies Europhysics Prize (2005); Foundation for Polish Science Prize (2006)
- Main research fields: Condensed Matter Physics, Spintronics, Semiconductors, Magnetic Materials

Prof. Daniel DOLEV

- Professor of Computer Science, Hebrew Uni., Israel
- Chairman Authority for Computation, Communication and Information
- Named 'Highly Cited Scientist', ISI ACM Fellow; Dijkstra Award
- Main research field: Computer Algorithms

Prof. Athene DONALD

- Professor, Experimental Physic, Uni. Cambridge Fellow, Royal Society & Chair of its Education Committee,
- Dame Commander of the British Empire in 2010
- Member, Academia Europaea; Trustee Science Museum of London
- L'Oreal/UNESCO Prize for Women in Science, Laureate for Europe 2009
- Main research fields: Soft Matter & Biological Physics

Dr Barbara ENSOLI

- Director, National AIDS Center, Ist. Superiore di Sanità, Italy
- Vice-President: National AIDS Committee, Italian Ministry of Health
- Member, WHO-UNAIDS Vaccine Advisory Committee, European Molecular Biology Organisation (EMBO)
- Main research fields: HIV Pathogenesis; Development of HIV/AIDS Preventative & Therapeutic Vaccines

Prof. Reinhard GENZEL

- Director, Max Planck Inst. for Extra-terrestrial Physics
- Full Professor, Physics Dep., Uni. California, Berkeley
- Member of: Leopoldina, US Nat. Academy of Sciences, Royal Society of London
- Awards and honours: Crafoord Prize in Astronomy, Royal Swedish Academy of Sciences, 2012, Leibniz Prize, German Science Foundation,1990
- Main research fields: Infrared Astronomy; Massive Black Holes; Galaxy Evolution

Dr Tim HUNT

- Cancer Research UK (retired)
- Nobel Prize in Physiology or Medicine 2001 with Lee Hartwell and Paul Nurse
- Main research fields: Molecular Biology, Control of Cell Division

Prof. Dr. Ing. Matthias KLEINER

- Head, Inst. for Forming Technology & Lightweight Construction (IUL), Uni. Dortmund
- President, German Research Foundation (DFG) 2007-2012
- Managing Director, Institute for Forming Technology & Lightweight Construction, 2004-2006
- DFG's Gottfried Wilhelm Leibniz Prize 1997

Prof. Eva KONDOROSI

- Research Professor, Biological Research Centre, Hungarian Academy of Sciences
- Research Director, Plant Science Institute, CNRS, France
- Main research fields: Rhizobium-legume Symbiosis with recent focus on plant controlled differentiation of bacteria

Prof. Niels Chr. STENSETH

- Professor and Chair, Centre for Ecological and Evolutionary Synthesis (CEES), University of Oslo
- Chair, Nordic Centre for Research on Marine Ecosystems and Resources under Climate Change (NorMER)
- President, Norwegian Academy of Science and Letters (DNVA)
- Chevalier (Knight) in the French National Order of the Legion of Honour
- Main research fields: Ecology and Evolution

Prof. Mart SAARMA

- Academy Professor and Director Centre of Excellence Biotechnology Inst., Helsinki
- Nordic Science Prize 2008
- Main research fields: Neurosciences, Biotechnology

Prof. Martin STOKHOF

- Professor, Institute for Logic, Language and Computation (ILLC) and University of Amsterdam
- Member of the Dutch Royal Academy of Sciences
- Main research field: philosophy of language

Prof. Anna TRAMONTANO

- Chair, Professor of Biochemistry, 'Sapienza' Uni., Rome
- Prizes & Awards: Tartufari, Accademia dei Lincei, KAUST Global Research Partnership, Marotta National Academy of Sciences
- Member of: European Molecular Biology Organization, Scientific Council of Inst. Pasteur, Fondazione Cenci Bolognetti, EMBL, MPI for Molecular Genetics - Berlin, Swiss Institute for Bioinformatics, Centro Nacional de Biotecnología - Madrid, International Institute Molecular & Cell Biology -Warsaw
- Main research fields: Biophysics and Computational Biology

Prof. Isabelle VERNOS

- Research Professor ICREA (Institució Catalana de Recerca i Estudis Avançats), Centre de Regulació Genòmica, Barcelona
- Associated Professor Uni. Pompeu Fabra, Barcelona
- Member EMBO and ASCB
- Main research fields: Cell Biology

Prof. Dr Reinhilde VEUGELERS

- Full Professor, KU Leuven, Faculty Economics & Business, Belgium
- Senior Fellow at Bruegel; CEPR Research Fellow
- President, Belgian FNS-FNRS Scientific Committee on Social Sciences
- Member of: the Royal Flemish Academy of Belgium for Sciences, Innovation4Growth Expert Group
- Main research fields: Science & Innovation, Industrial Organisation, International Strategy

Prof. Michel WIEVIORKA

- Professor, Ecole des Hautes Etudes en Sciences Sociales, Paris
- Chair, Fondation Maison des Sciences de l'Homme, Paris
- Doctor Honoris Causa, Pontificia Universidad Católica del Perú
- Main research fields: social movements, racism, terrorism, violence, multiculturalism and cultural differences

Panel Chairs of the ERC Peer Review Panels
ERC Starting Grant Panels 2014

Life Sciences

LS1 Molecular and structural biology and biochemistry: Prof. Tomi P Makela

LS2 Genetics, genomics, bioinformatics and systems biology: Prof. Frank Grosveld

LS3 Cellular and developmental biology: Prof. Daniel Robert St Johnston

LS4 Physiology, pathophysiology and endocrinology: Prof. Hellmut Augustin

LS5 Neurosciences and neural disorders: Prof. Michael Brecht

LS6 Immunity and infection: Dr. Diego Sebastian Amigorena

LS7 Diagnostic tools, therapies and public health: Prof. Stefanie Dimmeler

LS8 Evolutionary, population and environmental biology: Prof. John N. Thompson

LS9 Applied life sciences and non-medical biotechnology: Prof. Diana Banati

Social Sciences and Humanities

SH1 Markets, individuals and institutions: Prof. Philip Hans B.F. Franses

SH2 The social world, diversity and common ground: Prof. Gustavo Guerreiro Seabra Leitao Cardoso

SH3 Environment, space and population: Prof. Petter Pilesjo

SH4 The human mind and its complexity: Prof. Sonja Anette Kotz Cimon

SH5 Cultures and cultural production: Prof. Caroline van Eck

SH6 The study of the human past: Prof. Maria Todorova

Physical Sciences and Engineering

PE1 Mathematics: Prof. Ari Laptev

PE2 Fundamental constituents of matter: Prof. Maciej Lewenstein

PE3 Condensed matter physics: Prof. Gerrit Bauer

PE4 Physical and analytical chemical sciences: Prof. Marco Daturi

PE5 Synthetic chemistry and materials: Prof. Horst Weller

PE6 Computer science and informatics: Prof. Marta Zofia Kwiatkowska

PE7 Systems and communication engineering: Prof. Peter Kennedy

PE8 Products and process engineering: Dr. Christian Sattler

PE9 Universe sciences: Prof. Monica Tosi

PE10 Earth system science: Prof. Dorthe Dahl-Jensen

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Panel Chairs of the ERC Peer Review Panels
ERC Consolidator Grant Panels 2014

Life Sciences

LS1 Molecular and structural biology and biochemistry: Prof. Laszlo Tora

LS2 Genetics, genomics, bioinformatics and systems biology: Prof. Karen Steel

LS3 Cellular and developmental biology: Prof. Arshad Desai

LS4 Physiology, pathophysiology and endocrinology: Prof. Manolis Pasparakis

LS5 Neurosciences and neural disorders: Dr. Gábor Tamás

LS6 Immunity and infection: Prof. Philippe Sansonetti

LS7 Diagnostic tools, therapies and public health: Prof. Jane F. Apperley

LS8 Evolutionary, population and environmental biology: Prof. Julia Fischer

LS9 Applied life sciences and non-medical biotechnology: Prof. Birte Svensson

Social Sciences and Humanities

SH1 Markets, individuals and institutions: Prof. Richard Blundell

SH2 The social world, diversity and common ground: Prof. Shalini Randeria

SH3 Environment, space and population: Prof. Neil Adger

SH4 The human mind and its complexity: Prof. Lisa Cheng

SH5 Cultures and cultural production: Prof. Georgina Born

SH6 The study of the human past: Prof. Graeme Barker

Physical Sciences and Engineering

PE1 Mathematics: Prof. Alfio Quarteroni

PE2 Fundamental constituents of matter: Prof. John Renner Hansen

PE3 Condensed matter physics: Prof. Sebastien Balibar

PE4 Physical and analytical chemical sciences: Prof. Aart Kleijn

PE5 Synthetic chemistry and materials: Prof. Luis Liz-Marzan

PE6 Computer science and informatics: Prof. Mogens Nielsen

PE7 Systems and communication engineering: Prof. Florian Solzbacher

PE8 Products and process engineering: Prof. Aristide Massardo

PE9 Universe sciences: Prof. Conny Aerts

PE10 Earth system science: Prof. Paul Andriessen

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Panel Chairs of the ERC Peer Review Panels
ERC Advanced Grant Panels 2014

Life Sciences

LS1 Molecular and structural biology and biochemistry: Prof. Daniela Rhodes (Bargellini)

LS2 Genetics, genomics, bioinformatics and systems biology: Prof. Charles Auffray

LS3 Cellular and developmental biology: Prof. Juergen Knoblich

LS4 Physiology, pathophysiology and endocrinology: Prof. Susan Bonner-Weir

LS5 Neurosciences and neural disorders: Prof. Zoltan Nusser

LS6 Immunity and infection: Prof. Fiona Powrie

LS7 Diagnostic tools, therapies and public health: Prof. Paul Herijgers

LS8 Evolutionary, population and environmental biology: Prof. Roger Butlin

LS9 Applied life sciences and non-medical biotechnology: Prof. Daniel Tomé

Social Sciences and Humanities

SH1 Markets, individuals and institutions: Prof. Orazio Attanasio

SH2 The social world, diversity and common ground: Prof. Renaud Dehousse

SH3 Environment, space and population: Prof. David Banister

SH4 The human mind and its complexity: Prof. Milena Zic-Fuchs

SH5 Cultures and cultural production: Prof. Alessandro Schiesaro

SH6 The study of the human past: Prof. Martin Kenneth Jones

Physical Sciences and Engineering

PE1 Mathematics: Prof. Maria J. Esteban

PE2 Fundamental constituents of matter: Prof. Olaf Scholten

PE3 Condensed matter physics: Prof. Manijeh Razeghi

PE4 Physical and analytical chemical sciences: Prof. Thomas Rizzo

PE5 Synthetic chemistry and materials: Prof. Jöns Hilborn

PE6 Computer science and informatics: Prof. Zdenek Strakos

PE7 Systems and communication engineering: Prof. Thomas Sinkjaer

PE8 Products and process engineering: Prof. Bernhard Schrefler

PE9 Universe sciences: Prof. Aleksander Wolszczan

PE10 Earth system science: Prof. Ingeborg Levin

The list of all Panel Members is available at:
http://erc.europa.eu/evaluation-panels

Top organisations hosting ERC Principal Investigators*

Host Institution	Country	FP7 2007-2013		H2020 Calls 2014	
		Starting/ Consolidator	Advanced	Starting	Consolidator
National Centre for Scientific Research (CNRS)	FR	143	66	21	25
University of Oxford	UK	64	57	6	7
University of Cambridge	UK	69	49	9	12
Max Planck Society	DE	66	45	16	
University College London	UK	55	30	3	9
Swiss Federal Institute of Technology Zurich	CH	35	46		
Swiss Federal Institute of Technology Lausanne	CH	44	36		
Weizmann Institute	IL	51	28	6	3
Hebrew University of Jerusalem	IL	44	30	2	3
Imperial College	UK	34	27	5	2
National Institute of Health and Medical Research	FR	40	18	5	6
University of Leuven	BE	30	15	2	3
University of Edinburgh	UK	23	21	3	6
French Alternative Energies and Atomic Energy Commission	FR	34	9	3	2
University of Bristol	UK	18	21	4	3
Spanish National Research Council (CSIC)	ES	24	15	2	7
University of Amsterdam	NL	21	17	7	5
University of Munich (LMU)	DE	14	24	6	1
Radboud University Nijmegen	NL	24	12	5	1
Utrecht University	NL	22	13	2	3
Leiden University	NL	19	15	2	2
Technion - Israel Institute of Technology	IL	25	8	3	3
University of Zurich	CH	18	15		
Free University and Medical Center Amsterdam (VU-VUmc)	NL	20	12	3	3
National Institute for Research in Computer Science and Automatic Control (INRIA)	FR	19	12	3	2
University of Geneva	CH	14	17		
King's College London	UK	22	9		2
Tel Aviv University	IL	17	14	13	1
Karolinska Institute	SE	18	12		2
University of Copenhagen	DK	19	11	8	5
University of Helsinki	FI	16	14	4	1

* Organisations that signed/were invited to sign the first grant agreement. Data as of February 2015

P. Amor
Director

IAO
Internal Audit's Office
A. Romano (TL)
Until 28/02/2015

CAO
Chief Accountant's Office
C. Levacher

B
Scientific Management Department
J. Labastida (HoD)

C
Grant Management De
M. May (HoD

B1
Process Management and Review
B. Tubbing (HoU)

C0
Operational Budget and
A. Papathanasiou

B2
Call and Project Follow-up Coordination
A. Martin-Hobdey (HoU)

C1
Starting Gran
N. Atzoulatou (H

B3
Life Sciences
A. Lönnroth (HoU)

C2
Consolidator Gr
M. Hennessy (H

B4
Physical Sciences and Engineering
M. Penny (HoU)

C3
Advanced Gra
T. Prost (HoU

B5
Social Sciences and Humanities
A. Lönnroth (Acting HoU)

C4
Audit and ex-post c
A. Ulceluse-Pirvan

Effective as of 16/02/2015

Agency structure

A1
Support to the Scientific Council
T. Papazoglou (HoU)

A2
Communication
M. Gaudina (HoU)

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(TL)

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ontrols
(HoU)

D
Resources & Support Department
G-E. te Kolsté (HoD)

D0
Administrative Budget
R. Frizon (TL)

D1
IT and Support Services
M. Vanbiervliet (HoU)

D2
Human Resources
S. Vartiainen (HoU)

D3
Legal Affairs and Internal Control
M. Oliván Avilés (HoU)

(HoD) - Head of Department
(HoU) - Head of Unit
(TL) - Team Leader

European Commission

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Jean-Pierre Bourguignon
ERC President and Chair of its Scientific Council

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