The European Research Council

The ERC and the next Framework Programme

Jean-Pierre BOURGUIGNON
ERC President

October 2017
The Mission of the ERC
"to reinforce excellence, dynamism and creativity in European research"

Europe has been lagging behind the USA in terms of research with the highest impact (articles among 1% most cited), but gap has narrowed over the decade since ERC was created. (Source: Clarivate Analytics 2017)
The first reported ERC publications began to appear in 2007 and since then publications acknowledging ERC funding have gone from contributing less than 0.1% of EU top 1% publications in 2007 (2) to nearly 7% in 2014 (973). In 2014, for the first time authors based in the EU appeared on more top 1% cited publications (14,172) than authors based in US (14,093) in absolute numbers.
What is the ERC?

The ERC supports excellence in frontier research through a bottom-up, individual-based, pan-European competition

- Support for the **individual scientists** – no networks!
- Global peer-review
- No predetermined subjects (**bottom-up**)
- Support of **frontier research** in all fields of science and humanities

**Strategy**

- Scientific governance: **independent Scientific Council** with 22 members including the ERC President; **full authority over funding strategy** and evaluation
- Support by the **ERC Executive Agency** (autonomous)
- **Scientific quality** as the only criterion aiming for excellence

**Legislation**
ERC: a Radical Step Forward for Europe

To raise the level, dynamism and creativity of the whole European research system by:

- **Supporting the emergence of research leaders** in Europe capable of opening new avenues in their disciplines and of training and inspiring others

- **Improving the career prospects of early stage researchers** in Europe so as to **reduce brain drain** and **promote institutional change**

- **Providing a benchmark for all of Europe’s national research authorities and individual institutions** encouraging further efforts, reforms and investments, thereby **sustaining structural reforms across Europe**.
Scientists in the Driver's Seat
ERC Grant Schemes

### Starting Grants
- **Starters**
  - (2-7 years after PhD)
  - up to €1.5 Mio
  - for 5 years

### Consolidator Grants
- **Consolidators**
  - (7-12 years after PhD)
  - up to €2 Mio
  - for 5 years

### Advanced Grants
- Track-record of significant research achievements in the last 10 years
- up to €2.5 Mio
- for 5 years

### Proof-of-Concept
- Bridging gap between research - earliest stage of marketable innovation
- up to €150,000 for ERC grant holders

### Synergy Grants (re-launched 2018)
- 2 – 4 Principal Investigators
- up to €10.0 Mio
- for 6 years
Horizon 2020 Budget and ERC

ERC Budget 2014-2020 13 billion €
ERC Delivers
"Today's event is one of the most important in my tenure as a Commissioner for one simple reason: You are our jewel in the crown. You are one of the best things to happen in Europe in the last 10 years."

ERC 10th anniversary Speech by Commissioner MOEDAS, 21 March 2017

ERC was spontaneously celebrated in >160 events all over Europe and the world; from national events with Heads of States and Ministers, to universities and EU delegations worldwide.
After 10 Years, a Success Story

- Over 7,500 top researchers funded since the ERC’s creation in 2007
- Over 50,000 researchers and other professionals employed in ERC research teams
- €13 billion: ERC budget for 2014-2020 under Horizon 2020
- Over 90,000 articles from ERC projects published in prestigious scientific journals
- 738 research institutions hosting ERC grantees – universities, public or private research centres in the EU or associated countries
- 72 nationalities of grant holders
Priority to Young Scientists

Two-thirds of ERC grants to early-stage Principal Investigators.

+ 30 000 PhD and post-doc researchers working in ERC teams.
Attracting Researchers to Europe

Nationality of ERC project teams (PIs not included)
Analysis of 1,901 Starting and Advanced Grants

EU: 71%
Assoc. Countries: 10%
non-ERA: 17%
unknown: 2%

In all ERC grants
+ 9,000 non-ERA team members
most from
China, US, India, and Russia
Results for the ex-post Analysis

Overall results for the 2015 and 2016 analyses

- **A - Scientific breakthrough**: 21% in 2015, 25% in 2016
- **B - Major scientific advance**: 50% in 2015, 48% in 2016
- **C - Incremental scientific contribution**: 25% in 2015, 26% in 2016
- **D - No appreciable scientific contribution**: 4% in 2015, 1% in 2016
"Without grants we cannot do fundamental research. And I'd like to emphasise the European Research Council who generously supports us with funds for fundamental science which is so crucial for this kind of work where you try to lay the foundation for the technologies of 30/40/50 years from now." Prof. Ben FERINGA, Nobel speech, December 2016

https://www.nobelprize.org/nobel_prizes/chemistry/laureates/2016/feringa-lecture.html
ERC Grants
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</table>
ERC Funded Projects by Country of HI
Success Rate by Country of HI

Success rate (2007-2016 and StG2017)
Grantees at Home and Abroad

- Non-nationals in host country
- Nationals in host country
- Nationals abroad

ERC 2007-2016 calls + StG2017
ERC and Gender Balance
Female Participation at ERC 2007-2016

By Type

<table>
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<th>Type</th>
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<td>CoG</td>
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<td>31%</td>
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<tr>
<td>AdG</td>
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<td>15%</td>
<td>14%</td>
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<tr>
<td>Total</td>
<td>28%</td>
<td>26%</td>
<td>22%</td>
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Female Participation 2007-2016

By Domain

- LS: 32% panellists, 30% applicants, 23% grantees
- PE: 19% panellists, 17% applicants, 17% grantees
- SH: 38% panellists, 37% applicants, 35% grantees
- All domains: 28% panellists, 26% applicants, 22% grantees
Success Rates 2007-2016 by Type

- StG: 11% success rate
- CoG: 13% success rate
- AdG: 13% success rate
- Total: 12% success rate
Success Rate by Domain 2007-2016

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<th>s.rate F</th>
<th>s.rate M</th>
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<tr>
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<tr>
<td>PE</td>
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<tr>
<td>SH</td>
<td>9%</td>
<td>11%</td>
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<tr>
<td>Total</td>
<td>12%</td>
<td>10%</td>
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Success Rates Start./Cons. Grants

Starting and Consolidator Grant 2007-2016

Country of host institution at application

- Women
- Men
Success Rates for Advanced Grants

Advanced Grant 2008-2016

Country of host institution at application

success rate

Women
Men

CH LU NL DE AT UK FR SE DK IL NO BE HU LV CY ES IT PT FI IS CZ IE EL EE LT BG HR SI TR PL

30%
25%
20%
15%
10%
5%
0%
Measures in ERC Work Programmes

2007
Eligibility extensions included 12 months per child born after PhD

2010
Eligibility extensions to 18 months per child born before/after PhD

2013
Scientific leadership potential (self-evaluation) section removed

2014
Model CV template included in application forms

2015
No limit to eligibility extension (before it was 4,5) Care of sick relative also a reason for extension of the eligibility
## StG 2017 Results

<table>
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<tr>
<th>Category</th>
<th>Evaluated Step 1</th>
<th>Evaluated Step 2</th>
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<td>F</td>
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<td>406</td>
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StG 2014-2017 Gender Success Rates

StG 2014-2017 Gender success rates

Year

2014-STG 2015-STG 2016-STG 2017-STG

success rate

SR F
SR M
SR All
StG 2017 results for PIs based in Spain and Portugal

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<td>Total</td>
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ERC Perspectives
Next Framework Programme’s Challenges

- Need to **preserve** ERC main features and specificities
- Consolidate schemes welcoming **interdisciplinarity**
- Continue the **progress** made on **Gender Balance**
- Need to promote the **impact** of the ERC outside the scientific community
- Improve the coordination with the **programmes of national agencies** in particular in the context of **widening European participation**
- Need for an **enhanced budget** for research in the next framework programme
Need for Budget Increase: More Talent to Fund

With a higher budget, ERC could fund many more excellent projects across Europe. In recent years, there has been an average of > 400 unfunded top projects each year. This talent may leave/have left Europe.
Need for Budget Increase: Synergy

Support to Synergy Grants

The **success rate** of SyG in 2013 with 150 M€ budget was 3%. In order to achieve a **15% success rate** the budget would therefore need to be multiplied by 5.

**We consider that the typical budget for Synergy projects should be 450 M€ – 750 M€ per year**
ERC Scientific Council Statement on FP9

✓ Continuity
✓ Agility
✓ Scale-up

Building on a European Success Story to Further Empower European Researchers
Statement by the ERC Scientific Council on the position of the European Research Council in the next European Union Framework Programme for Research and Innovation
5 May 2017

In the space of 10 years, the European Research Council (ERC) has become a real European success story. Its original set-up and governance add a new dimension to the European Union (EU) Framework Programmes, and the funding it provides for the best investigator-driven frontier research complements national efforts. The EU should build on this achievement and scale-up the ERC. Beyond 2021, Europe needs to increase its overall investment in research and innovation to speed up its progress towards becoming a dynamic knowledge society empowering researchers to develop their boldest ideas broadly.

The ERC is based on a simple concept with an ambitious goal. Its backbone is a robust evaluation process which selects the best ideas put forward by daring scientists to push the frontiers of knowledge, drawing from a wider pool of talents and ideas than would be possible for national schemes. It grew steadily in the EU 7th Framework Programme and was consolidated in the next one. Horizon 2020, becoming a reference.

The ultimate goal of the ERC is nothing less than to raise the level, dynamism and creativity of the whole European research ecosystem. It does so by:

- Empowering a new generation of scientists and improving the attractiveness of research institutions across Europe. This is done by supporting the emergence and improving the career prospects of early stage researchers in Europe so as to attract, repatriate and retain the best scientific talent while promoting institutional change;
- Backing research leaders in Europe to push the knowledge frontier and to train and inspire others;
- Providing a reference point for all of Europe’s national research entities and individual institutions encouraging further structural reforms, efforts, and investments across Europe.

The goal of the ERC is even more relevant today than it was when it was founded. The pace of technological change has increased to the point that the prosperity and well-being of developed societies depends even more on the ability to generate, share, access and use knowledge and to link it to innovation. Europe still lags behind in terms of world-leading centres of innovation, which develop around world-leading research institutions. Science in the broadest sense, from the natural and life sciences to the social sciences and humanities, is more important than ever to nurture truly open, pluralistic and reflective societies and to enhance Europe’s competitiveness.

The EU proved capable of delivering on a very ambitious vision for such a project, based on two simple guiding principles: autonomy under the responsibility of a Scientific Council; and an unswerving focus on scientific quality, aiming for excellence. As a result, the establishment of the ERC under FP7, and its continuation under Horizon 2020, are recognised to have been major policy achievements of the EU implemented by the European Commission.

The ERC introduced three major policy innovations in the Framework Programme:

- Complementing national funding, by setting a new objective of significantly and directly strengthening Europe’s science base, recognising its pivotal role in developing and attracting talent and investments, contributing to the solution of societal challenges and nurturing public debate;
- Providing flexible, long-term funding to develop ambitious projects proposed by high potential individual researchers of any nationality and in any field, giving them the freedom to take risks at the frontiers of science;
- Implementing the ERC at arm’s length from the European Commission and the Member States, by entrusting its strategy to an independent Scientific Council, supported by a dedicated implementation structure, enabling it to focus solely on scientific excellence.
"Reducing the overall level of R&I investment would be a mistake a clear reversal of progress. At a minimum, the budget should maintain the average annual growth rate of Horizon 2020, [which…] would lead to a seven-year budget of at least €120 billion at current prices. Anything below that would break momentum and call into question the EU's commitment to deliver on its political priorities, as embodied in the Rome declaration of March 2017 in which innovation is considered crucial."

"Increasing the budget of the post-2020 EU R&I programme will provide more resources for the European Research Council (ERC), which finances projects defined and driven by researchers on the sole criterion of excellence. As shown by the interim evaluation of Horizon 2020, the ERC has become a global beacon of excellence and provides those that do the science of the future with the skills and competences that Europe needs to stay at the forefront of development."
Next MFF: a Political Opportunity

"There must be sufficient resources for FP9 and they must be guaranteed. Budget cuts while it is underway must be avoided. FP9 must be funded as befits an ambitious R&D programme and guaranteed a budget of EUR 100 billion as a starting point therefore.”


“For the funding period 2014-2020, we have nearly €1 trillion… But most… is allocated on the basis of historical reasons… we have to overcome this type of spending based on old priorities, and instead spend money with a view to achieving real European added value.” Wolfgang SCHÄUBLE, DE Finance Minister, 9.2015

www.bundesfinanzministerium.de/Content/EN/Reden/2015/2015-09-28-keynote-eu-budget-focused-on-results.html
Two areas seem to be consensually identified as having a high potential added value: research and development, and internal and external security. Research and development is already an important element of EU spending, although research suggests that there is a worrying trend in favouring applied research, where immediate or short-term results can be used in industrial applications, rather than fundamental research, which requires a long-term vision and patience in relation to immediate economic benefits, but is the highest segment providing added value. Beyond this inherent problem of research policy, the fact remains that EU research and development accounts for a much more modest share of the EU budget than agriculture and cohesion policies. In a global context where EU research is compared to American, Indian or Chinese research, this should be one of the essential policy priorities in the future.
The European Research Council

- National Contact Point: [erc.europa.eu/national-contact-points](http://erc.europa.eu/national-contact-points)
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  - [twitter.com/ERC_Research](http://twitter.com/ERC_Research)
  - [www.linkedin.com/company/european-research-council](http://www.linkedin.com/company/european-research-council)