The European Research Council: Prime funder of Frontier Research in Europe

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"The ERC's mission is to encourage the highest quality research in Europe through competitive funding and to support investigator-driven frontier research across all fields, on the basis of scientific excellence."
"You never know if and how a discovery will be used in the future… When al-Khwarizmi invented the algorithms, he did not know they would be used to create IT encryption systems. So let scientists follow their dreams, without boundaries"

ERC Grantee, Israel, PoC 2014
ERC is....
1. funding: it is part of H2020

For 2020, the budget is more than 2.25 billion euros, the highest ever since the beginning of the ERC.
The European Commission

- Provides financing through the EU framework programmes
- Guarantees autonomy of the ERC
- Assures the integrity and accountability of the ERC
- Adopts annual work programmes as established by the Scientific Council

The ERC Scientific Council

- 21 prominent researchers proposed by an independent identification committee
- President appointed following recommendation of an independent committee
- Appointed by the Commission (4 years, renewable once)
- Establishes overall scientific strategy; annual work programmes (incl. calls for proposals, evaluation criteria); peer review methodology; selection and accreditation of experts
- Controls quality of operations and management
- Ensures communication with the scientific community

The ERC Executive Agency

- Executes annual work programme as established by the Scientific Council
- Implements calls for proposals and provides information and support to applicants
- Organises peer review evaluation
- Establishes and manages grant agreements
- Administers scientific and financial aspects and follow-up of grant agreements
- Carries out communications activities and ensures information dissemination to ERC stakeholders
Scientific Governance by the Scientific Council
ERC Scientific Council Members

- Prof. Geneviève ALMOUZNI (Biology)
- Prof. Manuel ARELLANO (Economics)
- Prof. Jean-Pierre BOURGUIGNON (Mathematics), ERC President
- Prof. Paola BOVOLENTA (Neurobiology)
- Prof. Margaret BUCKINGHAM (Biology)
- Prof. Eveline CRONE (Psychology)
- Prof. Ben L. FERINGA (Organic Chemistry)
- Prof. Mercedes GARCIA-ARENAL (History)
- Prof. Andrzej JAJSZCZYK (Electronics and Communication Engineering)
- Prof. Eystein JANSEN (Earth Science)
- Prof. Tomas JUNGWIRTH (Condensed Matter Physics)
- Prof. Michael KRAMER (Astrophysics)
- Prof. Kurt MEHLHORN (Computer Science)
- Prof. Barbara ROMANOWICZ (Geophysics)
- Prof. Martin STOKHOF (Philosophy), ERC Vice-President
- Prof. Giulio SUPERTI-FURGA (Medical Systems Biology)
- Prof. Jesper SVEJSTRUP (Biology)
- Prof. Nektarios TAVERNARAKIS (Molecular Systems Biology)
- Prof. Janet THORNTON (Bioinformatics and Structural Biology), ERC Vice-President
- Prof. Lene VESTERGAARD HAU (Physics)
- Prof. Michel WIEVIORKA (Sociology)
- Prof. Fabio ZWIRNER (Theoretical and High-Energy Physics), ERC Vice-President
ERC Basics

INDIVIDUAL RESEARCHERS FROM ALL OVER THE WORLD
LONG TERM GRANTS
TO HIGH-RISK/HIGH-GAIN PIONEERING PROJECTS
IN ANY FIELD OF FRONTIER RESEARCH

Life Sciences
Physical Sciences and Engineering
Social Sciences and Humanities
ERC offers independence, recognition & visibility

- to work on a research topic of **own choice**, with a team of **own choice**
- to gain true **financial autonomy** for 5 years
- to negotiate with the host institution the **best conditions** of work
- to attract **top team members** (EU and non-EU) and collaborators
- to move with the grant to any place in Europe if necessary (**portability of grants**)
- to attract additional funding and gain recognition; ERC is a quality label
What does ERC offer?

**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

**Synergy Grants**
- 2 – 4 Principal Investigators
- up to €10 Mio for 6 years.
- NEW: One PI can be located outside the EU or Associated Countries

**Proof-of-Concept**
- bridging gap between research - earliest stage of marketable innovation
- up to €150,000 for ERC grant holders
Space Science research funded by ERC

Approximately 450 funded projects in areas related to Space Science, worth some 900 Million EUR.
Space Science research funded by ERC

Space science projects funded in 17 out of the 25 panels of the ERC!
Evaluation Panel Structure (WP2019)

Life Sciences
- LS1 Molecular Biology, Biochemistry, Structural Biology and Molecular Biophysics
- LS2 Genetics, ‘Omics’, Bioinformatics and Systems Biology
- LS3 Cellular and Developmental Biology
- LS4 Physiology, Pathophysiology and Endocrinology
- LS5 Neurosciences and Neural Disorders
- LS6 Immunity and Infection
- LS7 Applied Medical Technologies, Diagnostics, Therapies and Public Health
- LS8 Ecology, Evolution and Environmental Biology
- LS9 Applied Life Sciences, Biotechnology and Molecular and Biosystems Engineering

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

Social Sciences and Humanities
- SH1 Individuals, Markets and Organisations
- SH2 Institutions, Values, Environment and Space
- SH3 The Social World, Diversity, Population
- SH4 The Human Mind and Its Complexity
- SH5 Cultures and Cultural Production
- SH6 The Study of the Human Past
Prof. Cathy Quantin
Université Claude Bernard Lyon1
Laboratoire de Géologie de Lyon

Project instrumental in proposing landing sites

ESA ExoMars Mission 2020
Space Science research funded by ERC

Project MAMSIE: Mixing and Angular Momentum transpor of massive stars
PI Prof. Conny Aerts
KU Leuven
Contacts with the community: ERC – ESA workshop in 2015

- joint ESA-ERC networking event on frontiers of space science and technology of November 2015 in Noordwijk (NL).

- The event was co-chaired by Prof Chris Rapley (Chair of the ESA’s High-level Science Policy Advisory Committee - HISPAC) and Prof Sierd Cloetingh (Vice-President of the ERC and Vice-Chair of the ERC Scientific Council).

- The main scope of the event was to build engagement between the two research communities (ESA scientists and ERC grantees) given the complementarity of their research interests and activities that would foster future collaborations between research groups and individuals from the two communities.

- 21 ERC grantees and 26 ESA scientists participated in the event, joined by about 10 specialists from ESTEC and 3 ERC executive staff.
ERC ACHIEVEMENTS
Horizon 2020 is one of Europe's biggest success stories. The new Horizon Europe programme aims even higher. As part of this, we want to increase funding for the European Research Council to strengthen the EU's global scientific leadership, and reengage citizens by setting ambitious new missions for EU research.

Carlos MOEDAS, European Commissioner for Research, Science and Innovation

"Today's event is one of the most important in my tenure as 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, 21.3.17
After More than 10 Years, a Success Story

- Over 9,400 top researchers funded since the ERC's creation in 2007
- Over 60,000 researchers and other professionals employed in ERC research teams
- €13 billion ERC budget for 2014-2020 under Horizon 2020
- Over 100,000 articles from ERC projects published in prestigious scientific journals
- >780 research institutions hosting ERC grantees – universities, public or private research centres in the EU or associated countries
- 82 nationalities of grant holders
ERC Delivers

- **74%** of the completed ERC-funded projects made **scientific breakthroughs or major advances in science**

- **7%** of the ERC-acknowledging publications were among the **top 1%** most cited in their scientific field and publication year

- **20%** of completed LS and PE projects reported at least one patent (on average **2 patents reported per project**
20% of the ERC-funded Projects Deliver Scientific Breakthroughs

Qualitative evaluation of completed ERC projects
Overall results for 2015, 2016, 2017 and 2018

- **2015**: 22% A - Scientific breakthrough, 50% B - Major scientific advance, 25% C - Incremental scientific contribution, 4% D - No appreciable scientific contribution
- **2016**: 25% A, 48% B, 26% C, 1% D
- **2017**: 19% A, 60% B, 20% C, 2% D
- **2018**: 16% A, 59% B, 25% C, 0% D
ERC Perspectives
ERC Scientific Council on Horizon Europe

- **Continuity:**
  - Of structure from the current legal framework
  - Of governance arrangements: independence of Scientific Council and operational autonomy

- **Agility:**
  - To innovate and adapt its scientific strategy
  - To manage its resources flexibly
  - To use tailor made tools and procedures when necessary

- **Scale-up:**
  - To turn ERC into one of Europe's main funders
  - To ensure appropriate success rates
  - To support more Europe's top-performing researchers
More Top Talent to Fund!

With a higher budget, ERC could fund much more excellence across Europe. In recent years, there has been an average of >400 unfunded top projects each year. This talent may leave/have left Europe.
Horizon Europe Budget Distribution

Proposal by the European Commission

* EUR 3.5 billion allocated under the InvestEU Fund.
A New European Scenario

- The Commission’s proposal for Horizon Europe must now be approved by the European Council and the European Parliament.

- **Big transition:** The EU has a **new Parliament** and soon a **new College of Commissioners**.

- ERC will keep advocating for **adequate support to Frontier Research**.

- Scientific communities all over the world are our allies in obtaining the right priority for Research and Innovation.
The European Research Council

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Thank you!

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