The European Research Council
Advanced and Starting Grants

Alejandro Martín Hobdey
Head of Unit, Starting Grants

B-DEBATE
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Main points

- Some Background on the ERC
- Types of grants
- Evaluation process
- The “structuring effect” in Europe
- Some conclusions: what is special about the ERC?
What is the ERC?

ERC is a new type of funding body in Europe to support excellence in frontier research, a bottom-up, individual-team, pan-European competition

**Legislation**
- Scientific Council with 22 members
- Support by the ERC Executive Agency
- Significant budget (1.6 billion €/year)
- Excellence as the only valid criterion

**Strategy**
- Support for the individual scientist – no networks!
- International peer-review
- No predetermined subjects (bottom-up)
- Support of frontier research in all fields of science and humanities
FP7 budget € 50.5 billion
ERC budget € 7.5 billion; Increase by € 250 M/year
ERC: a radical new approach to funding research at EU level

- Pan-European competition between individual teams.
- Open to any researcher in the world based on the sole criterion of excellence.
- Support investigator-driven or ‘bottom-up’ research projects in all fields of science, engineering and scholarship.
- Encourage creativity, risk-taking and ambition.
- Raise the status, attractiveness and visibility of frontier research in Europe and its top scientists of today and tomorrow.
Creative freedom for the individual grantee

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 move with the grant to any place in Europe if necessary (portability of grants)
- recognition: ERC has become the ‘gold standard’
Achievements of the ERC - so far

- more than 2,600 funded proposals, 58% of them StG
- in more than 480 different host institutions in 26 countries, total 4 billion
- but “excellence attracts excellence”: 50% of PIs in 50 institutions
- highly competitive: average success rate 12% 
- strong structuring effects: competition between European universities for first time ever, EU value added
- strengthening merit-based evaluation systems in Europe
**ERC Grant schemes**

**Starting and Consolidator Grants**
Starters (2-7 years after PhD) up to € 2.0 Mio for 5 years
Consolidators (7-12 years after PhD) up to € 2.75 Mio for 5 years

**Advanced Grants**
track-record of significant research achievements in the last 10 years
up to € 3.5 Mio for 5 years

**Synergy Grants**
2 – 4 Principal Investigators
up to € 15.0 Mio for 6 years

**Proof-of-Concept**
bridging gap between research - earliest stage of marketable innovation
up to €150,000 for ERC grant holders
Researchers Career development and complementary funding schemes

- ERC SyG - Synergy
- ERC StG - Starters
- ERC StG - Consolidators
- ERC Advanced
- Marie Curie
- Erasmus
- Students
- Post Graduates
- Post-docs
- Junior Professor / Junior Researcher
- Associated Professor
- Full Professor
- Senior Professor
Call for proposals
Two calls

Starting Grants
• Attract/retain next-generation leaders
• Establish independent research team & program

Advanced Grants
• Attract/retain current world-leaders
• Stimulate investigator-driven, breakthrough research

Graph showing the age and number of grantees for Starting Grants (StG 2007/2009) and Advanced Grants (AdG 2008/2009).
ERC Grant schemes: Who can apply?

- Excellent Researchers (PIs)
  - Any nationality, any age or any current place of work

- In conjunction with a Host Institution
  - Based in EU or associated countries
Host institution

Not evaluated during evaluation process!

**Applicant legal entity**: institution that engages and hosts the PI for the duration of the project

**Any type of legal entity**: universities, research centres, business research units … *as long as it is in MS or AC*

**Commitment of HI**: to ensure that the PI may

- apply for funding independently
- manage research and funding for the project
- publish independently as senior author
- have access to reasonable space and facilities
ERC Grant Schemes (StG, CoG, AdG)
Panel structure : 3 domains and 25 panels

Each panel:
Panel Chair and
10-15 Panel Members

Social Sciences and Humanities
- SH1 Individuals, institutions & markets
- SH2 Institutions, values, beliefs and behaviour
- SH3 Environment & society
- SH4 The Human Mind and its complexity
- SH5 Cultures & cultural production
- SH6 The study of the human past

Physical Sciences & Engineering
- PE1 Mathematical foundations
- PE2 Fundamental constituents of matter
- PE3 Condensed matter physics
- PE4 Physical & Analytical Chemical sciences
- PE5 Materials & Synthesis
- PE6 Computer science & informatics
- PE7 Systems & communication engineering
- PE8 Products & process engineering
- PE9 Universe sciences
- PE10 Earth system science

Life Sciences
- LS1 Molecular & Structural Biology & Biochemistry
- LS2 Genetics, Genomics, Bioinformatics & Systems Biology
- LS3 Cellular and Developmental Biology
- LS4 Physiology, Pathophysiology & Endocrinology
- LS5 Neurosciences & neural disorders
- LS6 Immunity & infection
- LS7 Diagnostic tools, therapies & public health
- LS8 Evolutionary, population & environmental biology
- LS9 Applied life sciences & biotechnology
Submission is to Panels

- Proposals are submitted to a Target Panel
- This panel is “responsible” and takes ownership for the evaluation of the particular proposal
- Proposals only switched between panels only if clear mistake on part of applicant
- In case of cross-panel or cross-domain proposals (ID), evaluation by also by members of other panels
Review Process: two steps

**STEP 1**
Remote assessment by Panel members of *Part 1 of proposal*

- Panel meeting
- Some proposals selected for step 2

**STEP 2**
Remote assessment of *all parts of proposal* by Panel members and other reviewers

- Panel meeting + interview (StG)
- Consolidating Panel chairs meeting
- Ranked list of proposals

**Feedback to applicants**
Interdisciplinary (ID) Research

- We refer to ID proposals as “cross panel, cross domain” proposals
- ERC approach for Interdisciplinarity: “Main Streaming”
  - Large panels with generalist approach takes care of “short range” interdisciplinarity
  - Had for several years a specific fund or domain for funding ID proposals
  - By 2011, only 3% of funded proposals were via the ID budget
Interdisciplinary proposals – importance of cross panel reviews

- Step 1, need use one or two Panel members from other panels (or shadow panels) for ID proposals
  - Do not leave this to Step 2.
  - StG 2012: 15-20% of proposals have cross panel reviews

- In Step 2,
  - again use one or two PMs from other panels (or shadow panels);
  - use any Remote Referee needed in the world!

- We continue to keep an eye on this issue....
Evaluation of *Excellence* at two levels:

- Quality of the Principal Investigator
- Quality of the Research Project

Panel Members and Referees evaluate and score criteria numerically;

Panels rank the proposals and propose for funding
Evaluation Criteria

Excellence as sole criterion, to apply to:

1. Research Project (RP)
   - Ground breaking nature
   - Potential impact
   - Scientific Approach
   - Added value of the Group (only SyG)

2. Principle Investigator (PI)
   - Intellectual capacity
   - Creativity
   - Commitment
Important feature of Starting Grant: Streaming

- **StG 2010 was first time implemented**
  - Starters: 2-6 years past Ph.D
  - Consolidators 7-12 years past Ph.D

- **Allows to run “two calls in parallel” with a flexible (non-bureaucratic) separation between them.**
  - Non-conventional careers can be taken into account

- **A priori, success rate needs to be kept “comparable” between the two streams**

- **Funding by stream within a panel according to demand (like funding distribution between panels)**

- **Unlike “eligibility”, ultimate decision on streaming is with the panels**
ERC Starting Grant: 2011 Call
Success Rate Vs Years Passed PhD

ERC STG 2011 Results Of Call
Funded Proposals and Success rate by Years passed PhD

- # Proposals funded
- # funded
- success rate %
ERC Synergy Grants: new pilot scheme in 2012

- Small groups of 2-4 researchers (not networks!)
- No thematic priorities
- Researchers can be in same country, even same institution
- Unique configuration of scientists with complementary skills
- High risk/high gain research
- Possible requested amount:
  - max. € 15,000,000 for up to 6 years
In the event of heavy oversubscription at step 1, panels may identify the less competitive applications by assessing the proposals on the basis of the extended synopsis and the Principal Investigators’ track records and CVs.
Frontier research and innovation: ERC Proof of concept

- Initiated to help ERC grant-holder to bridge the gap between their research and the earliest stage of a marketable innovation
- Supporting grant-holders during the pre-demonstration
- Up to 150,000 Euro per grant
- One step evaluation
- First call in 2011 with 2 deadlines
- Next call in 2012 (deadlines: 3 May and 3 October 2012)
ERC Proof of Concept 2011

Total applications: 151
Evaluated*: 139
Funded: 51

* withdrawn and ineligible proposals not taken into account

Graph showing funded and non-funded projects by country:
- UK: Funded 11, Non-funded 17
- NL: Funded 10, Non-funded 10
- ES: Funded 2, Non-funded 5
- IL: Funded 7, Non-funded 7
- FR: Funded 9, Non-funded 4
- IT: Funded 4, Non-funded 3
- CH: Funded 1, Non-funded 3
- DE: Funded 6, Non-funded 5
- FI: Funded 2, Non-funded 4
- SE: Funded 2, Non-funded 2
- BE: Funded 1, Non-funded 1
- AT: Funded 1, Non-funded 1
- HU: Funded 2, Non-funded 2
- IE: Funded 1, Non-funded 1
- PL: Funded 1, Non-funded 1
- EL: Funded 1, Non-funded 2
- CY: Funded 1, Non-funded 1
- CZ: Funded 1, Non-funded 1
ERC Starting Grant: 2011 Call
Grantees by country of host Institution, 21 countries
Source: 486 proposals

Country of Host Institution

Social Sciences and Humanities
Physical Sciences and Engineering
Life Sciences

# Funded Proposals
ERC Starting Grant: 2010 call
Mobility: Incoming & staying candidates
Source: 427 proposals

The diagram shows the distribution of grantees by country and their mobility status.

- **Grantees moving to another country** ("European" & "non-European" nationals)
- **Grantees staying in the country**: "Non-European" nationals
- **Grantees staying in the country**: other "European" nationals
- **Grantees staying in the country**: nationals of that country

The countries represented in the diagram are:
- UK
- FR
- DE
- CH
- IL
- NL
- ES
- IT
- SE
- BE
- AT
- PT
- DK
- FI
- HU
- IE
- CZ
- EL
- NO
- PL
- CY

The legend key is located at the top right of the diagram.
Success rates
ERC Starting & Advanced grant calls 2007 - 2011

Success rates per country of HI

awarded/evaluated proposals (%)
International exchange of researchers
ERC Starting & Advanced grant calls 2007 - 2011

- Nationals abroad
- Non-nationals in the country

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<th>Country</th>
<th>Number of nationals abroad</th>
<th>Number of non-nationals in the country</th>
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General profile of ERC grants’ team members (result of survey)

Distribution by nationality:
Established by the European Commission

Top European Institutions hosting at least 20 ERC Grantees by funding Schemes

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<thead>
<tr>
<th>Country</th>
<th>Higher-Education Institution</th>
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StG 2007-2011
AdG 2008-2011

Legal signatories of the first grant agreement

Data as of 10/04/2012
ERC Starting Grant: 2011 Call
Grantees by nationality – 38 nationalities
Source: 486 proposals

ERC STG 2011 Results Of Call
% Funded proposals, and # proposals, by Applicant Nationality
ERC STG 2011 Success Rate Vs HI Country

ERC STG 2011 Results Of Call - # Submissions Vs Overall Success rate by Country of Host Institution

Success rate ~ 12%
ERC STG 2011 Success Rate Vs Applicant Nationality

ERC STG 2011 Results Of Call - # Submissions Vs Overall Success rate by Nationality

Success rate ~ 12%
ERC Starting Grant: 2011 Call – Mobility: changing country at time of application

ERC STG 2011 Results Of Call # Main list Proposals
Changing Country (total 34)
ERC panel members by country of HI and gender

ERC Starting and Advanced grant calls 2007 - 2011

Averaged over the first eight ERC calls 34% of the ERC panel members were women.

* no of instances that experts of a certain country of origin are being used
ERC STG 2011 and ADG 2010 pre vs. post meeting rankings

StG2011 Step 2 pre vs post-meeting ranks

R-Squared 0.8068

AdG2010 Step 2 pre vs post-meeting ranks

R-Squared 0.8154
StG 2011 - Plot of proportion of Female main list proposals vs. Female Panel Members

ERC STG 2011 % F Panel Members Vs % F on Main List
STG 2011 F Panel Members Vs F Success rate

ERC STG 2011 % F Panel Members vs F Success rate

R² = 0.1232
National initiatives supporting the ERC schemes
A new partnership between Research Institutes - National Funding Councils - ERC

- The Spanish Ministry of Education and Science launched a call for bridging grants (StG 07)
- Flanders: Research Foundation offers to the best ranked PI on the ERC-StG reserve list a research project
- FR: ANR launched an initiative to support unfunded StG 07 finalists.
- CH: SNSF launched an initiative to back unfunded StG 07 finalists.
- IT: Call for proposals open to all unfunded StG 07 finalists
- SI: The Research Agency started a complementary scheme for unfunded finalists (StG + AdG)
- The Research Council supports unfunded ERC StG candidates with a Norwegian host institution
- FI: Call open to finalists in reserve lists
- NO: The Research Council supports unfunded ERC StG candidates with a Norwegian host institution
- SE: The Research Council funds the six unfunded Swedish StG 07 finalists
- HU: Call published for unfunded ERC finalists of the first and the second Starting Grant.
- TR: TUBITAK gives 5000 € incentive for ERC applicants who passes 2nd step evaluation
- CY: Research Promotion Foundation supports unfunded ERC StG 09 finalists.
- PL: New research agency – National Centre of Research will start initiative
- LU: Support for unfunded finalists equal to the amount available at the ERC
- IE: Top-up awards were available as incentives for the first Starting Grant
- CY: Research Promotion Foundation supports unfunded ERC StG 09 finalists.
Some conclusions: what is special about the ERC in terms of frontier research? (1/2)

- It is a young organisation: it has not aged (much) yet
  - Simple approach
  - Simple rules
  - Simple evaluation
- We have a (very) independent Scientific Council with considerable autonomy
- The time was right for the EU
- Completely bottom up with no priorities
  - Few and “large” panels
- Strong reliance on personal interviews
- Simple evaluation criteria
Some conclusions: what is special about the ERC in terms of frontier research? (2/2)

- We have a structuring” or “leverage effect” in the EU
  - ERC-like funding programmes
  - New funding agencies set up modelled on the ERC
  - “Transforming” transformative research in the EU

- Constantly learning and adapting
  - Synergy
  - Proof of Concept
  - Streaming
  - Monitoring and analysis of results
  - etc
Thank You!