The European Research Council

EL ERC Y SU SCIENTIFIC COUNCIL ESPAÑA EN EL ERC

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European Research Council

Established by the European Commission



Madrid, 5-6-2023

Outline

- Brief historical note
- ERC in Horizon Europe
- ERC Scientific Council
- ERC achievements
- Spain at ERC



Brief historical note



The Mayor Report

"In designing the governance structure of the ERC it is imperative that it has full autonomy in research matters, granting decisions and funding policies, while being accountable for finance and mission to the Union and other sponsors."

> The European Research Council, a Cornerstone in the European Research Area Expert Group Report December, 2003





ERC rationale

- Reinforce excellence, especially in new, fast-growing research areas
- Stay ahead in a world of growing scientific and technological competition
- Link science to technological innovation
- Compete for talent
- Encourage greater investment

Frontier Research: The European Challenge High-Level Expert Group Report February, 2005





Founding members of the ERC Scientific Council

Appointed by the European Commission on 18-7-2005

Claudio BORDIGNON (IT) Manuel CASTELLS (ES) Paul J. CRUTZEN (NL) Mathias DEWATRIPONT (BE) Daniel ESTEVE (FR) Pavel EXNER (CZ) Hans-Joachim FREUND (DE) Wendy HALL (UK) Carl-Henrik HELDIN (SE) Fotis C. KAFATOS (GR) Michal KLEIBER (PL) Norbert KROO (HU) Maria Teresa V.T. LAGO (PT) **Oscar MARIN PARRA (ES)** Lord MAY (UK) Helga NOWOTNY (AT) Christiane NÜSSLEIN-VOLHARD (DE) Leena PELTONEN-PALOTIE (FI) Alain PEYRAUBE (FR) Jens R. ROSTRUP-NIELSEN (DK) Salvatore SETTIS (IT) Rolf M. ZINKERNAGEL (CH)

First Scientific Council Plenary meeting held on 13-10-2005 in Brussels

Fotis C. KAFATOS elected as Chair after the meeting

8 ScC plenary meetings before ERC was officially created on 1-1-2007



COOPERATION

Collaborative trans-national research activities Industry, universities, research centres, public administrations

10 Themes

IDEAS

Funding for basic or "frontier" research by individual teams competing at European level Creativity & dynamism: "investigation driven research"

PEOPLE

Initiatives in support of training, mobility and career development, to strengthen EU human resources. "Marie Curie" actions

CAPACITIES

Development of research infrastructures; Support to regional clusters; SMEs; Science in Society; International cooperation



"Under the 'Ideas' programme, activities should be implemented by a European Research Council ('ERC'), which should enjoy a high degree of autonomy to develop very high-level frontier research at European level, building on excellence in Europe and raising its profile at international level. The ERC should maintain regular contact with the scientific community and European Institutions. As regards the ERC structures, the **mid-term review** of the Seventh Framework Programme may show the need for further improvements necessitating appropriate amendments."

"For support for 'frontier' research actions under the 'Ideas' programme the **sole criterion of excellence** shall apply."





Total: € 53.200 million



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 Scientific Council

- **22 prominent researchers** proposed by an independent identification 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 of experts
- Controls quality of operations and management
- Ensures communication with the scientific community

The ERC 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



Secretary General

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ERC governance

- Independent Scientific Council with 22 members including the ERC President
- Full authority over funding strategy and evaluation
- Support by a "Dedicated Implementation Structure" (ERC Executive Agency)
- The Secretary General plays the role of 'chief executive officer'



ERC review



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ERC governance

ERC Secretary General

Ernst-Ludwig WINNACKER 2/2007-6/2009 Andreu MAS-COLELL, 7/2009-12/2010 Donald B. DINGWELL, 6/2011-12/2013

Recommendations:

- Suppress the Secretary General,
- A Brussels-based ERC President, devoting at least 80% of his/her time to ERC business,
- Maintain the Executive Agency structure for the "Dedicated Implementation Structure",
- Increase the presence of the Scientific Council in the Agency Steering Committee.



ERC new governance

- Independent Scientific Council with 22 members including the ERC President
- Full authority over funding strategy and evaluation
- Support by a Dedicated Implementation Structure (ERC Executive Agency)
- President plays the role of 'chief executive officer'



ERC Scientific Council

22 members, including its chair, who is the ERC President 61 researchers have served as Scientific Council In addition, 22 currently serving

AT	3	IE	2
BE	3	IL	1
СН	2	IT	7
CZ	3	LU	1
DE	9	NL	4
DK	4	NO	2
EL	1	PL	4
ES	8	PT	2
FI	1	SE	1
FR	8	UK	10
HR	1	US	3
HU	3	тот	83

ERC Presidents:

Fotis C. KAFATOS 2/2007-2/2010 Helga NOWOTNY 3/2010-12/2013 Jean-Pierre BOURGUIGNON 1/2014-12/2019 Mauro FERRARI 1/2020-4/2020 Jean-Pierre BOURGUIGNON (ad interim) 7/2020-8/2021 Maria LEPTIN 10/2021-



ERC in Horizon Europe



ERC in Horizon Europe





ERC budget



European Research Council: component of Pillar I 'Excellence Science' of the Horizon Europe Framework Programme (2021-2027, € 16 bn)

Rationale:

Provide attractive and flexible funding to enable talented and creative individual researchers, with an emphasis on early-stage researchers, and their teams to pursue the most promising avenues at the frontier of science, on the basis of EU-wide competition based solely on the criterion of excellence.

• Area of intervention:

Frontier research (research funded by the ERC is expected to lead to advances at the frontier of knowledge). Funding should be awarded according to two principles: **bottom-up** and **sole criterion of scientific excellence**.





• Implementation:

ERC Scientific Council: composed of independent scientists, engineers and scholars of the highest repute and with the appropriate expertise, including both women and men in different age groups, and ensuring a diversity of research areas and a variety of geographical origins.

ERC dedicated implementation structure: responsible for the administrative implementation and execution of the ERC (<u>ERC Executive Agency</u>).



ERC Scientific Council



ERC Scientific Council



Eveline CRONE (Psychology) Vice-President



Geneviève ALMOUZNI (Biology)



Harriet BULKELEY (Geography)



Ben FERINGA









Maria LEPTIN (Biology) ERC President

Eystein JANSEN

(Earth Science)

Vice-President

Gerd GIGERENZER

(Psychology)

Giovanni SARTOR (Law)









Milena ŽIC FUCHS (Linguistics)



Jesper SVEJSTRUP

(Biology)

Vice-President









Chryssa KOUVELIOTOU (High-Energy Astrophysics) (Mechanical Engineering)





Sylvie LORENTE



Luke O'NEILL (Biochemistry & Immunology)

Björn OTTERSTEN (Electric Engineering)









(Physics)







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ERC Scientific Council: (1)

- 22 members operating according to the following core principles: scientific excellence, open science, autonomy, efficiency, effectiveness, transparency, accountability and research integrity, and supporting, in a bottom-up manner, frontier research carried out across all fields by principal investigators and their teams in competition at European level, including early-stage career researchers;
- Chaired by the ERC President, who shall ensure the leadership of the ERC Scientific Council and its liaison with the ERC dedicated implementation structure and shall represent the ERC Scientific Council in the world of science;
- The European Commission appoints its members and acts as the guarantor of the autonomy and integrity of the ERC and ensures the proper execution of the tasks entrusted to it.



ERC Scientific Council: (2)

 The ERC Scientific Council shall be composed of independent scientists, engineers and scholars of the highest repute and with the appropriate expertise, including both women and men in different age groups, and ensuring a diversity of research areas and a variety of geographical origins. They shall act in their personal capacity, independent of extraneous interests. The members of the ERC Scientific Council shall be appointed by the Commission, following an independent and transparent procedure for their identification agreed with the ERC Scientific Council, including an open consultation of the scientific community and a report to the European Parliament and the Council.

ERC Standing Identification Committee

Carl-Henrik HELDIN (chair) - Uppsala University, Sweden Heleen MURRE-VAN DEN BERG – Radboud University, the Netherlands Kirsten GRAM-HANSEN - Aalborg University, Denmark Michal KAROŃSKI - Adam Mickiewicz University, Poland Carlos MARTINEZ ALONSO - Spanish National Research Council (CSIC), Spain Mira MEZINI - Technical University of Darmstadt, Germany/Albania



ERC Scientific Council: (3)

- own Rules of procedure and Code of conduct;
- organized in three scientific domains, Life Sciences, Physical Sciences and Engineering and Social Sciences and Humanities, with a Vice-president appointed for each domain who serve as 'domain coordinators';
- Vice-presidents coordinate the selection of evaluation panel members;
- ERC Board (President, Vice-presidents and Director of the ERC Executive Agency): assure strong, close and continuous liaison and cooperation between the Scientific Council and the ERC Executive Agency;
- Secretariat provided by the ERC Executive Agency (Unit A1 "Support to the Scientific Council");
- Code of conduct for Scientific Council members: avoid conflict of interest.



Tasks of the ERC Scientific Council (1)

- Scientific strategy:
 - i. establish the overall **scientific strategy** for the ERC, in the light of scientific opportunities and European scientific needs;
 - ii. establish the ERC work programme;
 - iii. establish the necessary international cooperation initiatives including outreach activities.



Tasks of the ERC Scientific Council (2)

- Scientific management, monitoring and quality control:
 - i. ensure a **world-class peer review system** based on scientific excellence and on fully transparent, fair and impartial treatment of proposals;
 - ii. make a proposal on the basis of which **experts** shall be appointed;
 - iii. continuously monitor the quality of the operations and implementation;
 - iv. review and assess the ERC's achievements and the quality and impact of the research funded by the ERC and make recommendations and guidelines for corrective or future actions accordingly;
 - v. establish **positions** on any other matter affecting the achievements and impact of the ERC's activities and the quality of the research carried out.



Tasks of the ERC Scientific Council (3)

- Communication and dissemination:
 - i. raise the global profile and visibility of the ERC by conducting **communication and outreach activities**, including scientific conferences, to promote the ERC's activities and achievements and the results of the projects funded by the ERC with the scientific community, key stakeholders and the general public;
 - ii. where appropriate, consult with the scientific, engineering and academic **community**, regional and national research **funding agencies** and other **stakeholders**;
 - iii. regularly **report** to the Commission on its own activities.



Working methods of the ERC Scientific Council

- 4-5 plenary meetings every year in Brussels and/or abroad;
- **Board meetings**, the President and Vice-presidents meet on a monthly basis the Director and management of the ERC Executive Agency;
- Standing committees, working groups and task forces, meetings either around plenary meetings or remotely;
- **Domain meetings** before plenary meetings, focused on the recruitment of experts;
- regular observation of evaluation panel meetings;
- Final Panel Chairs Meetings once annually, remotely;
- two members of the ERC Scientific Council are members of the ERC Executive Agency's Steering Committee.



Standing Committees (1)

- The ERC Scientific Council has set up **three Standing Committees** (composed of President, Vice-presidents, and three members, one for each scientific domain):
 - Standing Committee of Panels ("CoP"):
 - formulation of policies and procedures concerning the selection of ERC evaluation panel members and reviewers;
 - steering the setting up of an expanded data base of experts and its continued monitoring;
 - preparing and approving specific proposals for panel structure;
 - development of norms and rules for the proper functioning of the panels.



Standing Committees (2)

• Conflict of Interests, Scientific Misconduct and Ethics ("CoIME"):

- formulating guidelines on conflict of interest, fraud and ethical matters related to any facet of the ERC's competences;
- examining information on cases of alleged scientific misconduct;
- considering any particular instance or situation where **ethical concerns** may arise.



Standing Committees (3)

- **Programme Impact Monitoring and Evaluation** ("PRIME"):
 - guiding the implementation of the ERC Monitoring and Evaluation Strategy;
 - consolidating, prioritizing and presenting to the Scientific Council new proposals for monitoring and evaluation activities;
 - considering and recommending updates of the ERC overall scientific strategy;
 - considering and proposing further adjustments to the ERC Monitoring and Evaluation Strategy.



ERC strategy for programme monitoring and evaluation

ERC mission & expectations	M&E objectives		Dimensions		
reinforce the excellence, dynamism and creativity of European research	Knowledge		Advancing knowledge frontier	Emerging areas	Performing globally
support and attract talented and creative researchers; assist the transition to academic independence	Researchers		Promoting talent	Nurturing talent	Attracting talent
drive up the quality of the European research system	Research systems		Host institutions	Research policies	Funding structures
drive innovation and business inventiveness and tackle societal challenges from bottom-up	Impact beyond science		Economic benefits	Societal benefits	Policy making
emphasise effectiveness, clarity, stability and simplicity in implementation and management	Operations		Accountability & information	Science management	Management efficiency



Working Groups

- Gender and diversity issues;
- Open science;
- Innovation;
- Widening European participation.



ERC achievements



ERC in figures



Over **13,000** top researchers funded since the ERC creation in 2007



Over **220,000** articles from ERC projects published in scientific journals



Over **90,000** researchers and other professionals employed in ERC research teams



Over **2,400** patents and other IPR applications generated by ERC funding



Over **400** start-ups identified as founded or co-founded by ERC grantees



Over **900** research institutions hosting ERC grantees – universities, public or private research centres in the EU or Associated Countries



89 nationalities of grant holders



12 Nobel Prizes, **6** Fields Medals, **11** Wolf Prizes and other prizes awarded to ERC grantees

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Reported scientific publications (FP7 and H2020)





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Horizon Dashboard 03/03/2022

Top funder in the World

"The ERC had the highest category normalised citation impact, the highest percentage of papers in the world's top 1% and the highest percentage of papers involving international co-authorship of the 50 funders most frequently acknowledged by authors in the Web of Science between 2007 and 2016."

(Clarivate Analytics – "The European Research Council – The first 10 years")



Table 2. The 50 most frequently acknowledged funders in the Web of Science sorted by category normalised citation impact, 2007-16⁶

Name	Papers	Category normalized citationimpact	Percentage top 1% papers	Percentage internationally collaborative papers	
European Research Council (ERC)	40,422	2.46	4.84%	59.24%	
Wellcome Trust	41,040	2.10	3.60%	55.62%	
United States Department of Energy (DOE)	123,864	2.09	3.92%	39.39%	
NIH National Cancer Institute (NCI)	55,496	2.08	3.68%	29.69%	
Medical Research Council UK	38,442	2.08	3.76%	48.81%	
NIH National Heart Lung & Blood Institute (NHLBI)	30,092	1.95	3.27%	28.81%	
Swiss National Science Foundation	50,598	1.90	3.01%	59.03%	
Federal Ministry of Education & Research (BMBF)	43,462	1.75	2.68%	48.12%	
National Institutes of Health (NIH) – USA ⁷	617,950	1.73	2.61%	28.37%	
National Science Foundation (NSF)	380,893	1.73	2.76%	36.36%	
National Health and Medical Research Council of Australia	40,898	1.70	2.31%	42.24%	
Australian Research Council	65,631	1.65	2.26%	50.65%	
French National Research Agency	41,385	1.62	2.04%	47.65%	
Ministry of Science and Technology, China	32,098	1.61	2.49%	28.98%	
Swedish Research Council	41,161	1.60	2.09%	57.87%	
Engineering & Physical Sciences Research Council (EPSRC)	60,697	1.58	2.07%	43.01%	

Scientific impact





Reported IPR applications (FP7 and H2020)



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Impact beyond science

- > 44% of ERC grants generated research subsequently cited by patent applications filed by firms and institutions all-over the world (50% are firms)
- 61% of life science projects are cited in patent applications, followed by projects in physical sciences and engineering (46%) and in social sciences and humanities (7%)
- Predominance in fields closer to the science frontier and industries with greater science-based R&D orientation: Biotechnology, pharmaceuticals, computer technology, organic fine chemistry, measurement, and semiconductors
- 11% of ERC grantees had created companies or transferred results of their research to pre-existing companies

https://erc.europa.eu/sites/default/files/2023-01/Assessing_the_Influence_ERC-funded_Research_Patented_Inventions.pdf



Spain at ERC



ERC-funded projects by country of Host Institution

736 ERC main individual based in Spain

Total grant value over 1.3 billion euro

Success rate in FP7: Success rate in H2020: Success rate in HE: 6.8% (10.4 %) 8.4% (12.4 %) 10.7% (14.5 %)

Host countries as of 28/03/2023



ERC-funded projects by country of Host Institution

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ERC-funded projects per million inhabitants



ERC grants versus gross expenditure on R&D



Success rate by country of Host Institution

<u>average SR</u> Overall: 12% Step1: 27% Step2: 44%





ERC Starting, Consolidator and Advanced Grant calls 2007-2022

Distribution of grants by domain and panel

Total PE

Panel	Total	Spain	% Spain	Panel	Total	Spain	% Spain	Panel	Total	Spain	% Spain
LS01	414	10	2.4%	PE01	529	24	4.5%	SH01	393	54	13.7%
LS02	431	27	6.3%	PE02	654	31	4.7%	SH02	561	22	3.9%
LS03	390	15	3.8%	PE03	580	37	6.4%	SH03	396	26	6.6%
LSO4	486	46	9.5%	PE04	518	25	4.8%	SH04	586	15	2.6%
LS05	576	17	3.0%	PE05	645	62	9.6%	SH05	461	16	3.5%
LS06	399	10	2.5%	PE06	662	29	4.4%	SH06	500	37	7.4%
LS07	659	29	4.4%	PE07	484	26	5.4%	SH07	64	6	9.4%
LS08	511	30	5.9%	PE08	650	69	10.6%	Total SH	2961	176	5.9%
LS09	355	33	9.3%	PE09	460	20	4.3%				
Total LS	4221	217	5.1%	PE10	507	11	2.2%				
				PE11	76	9	11.8%				



343

5765

5.9%

Evolution of grants with Spanish HIs (total = 736)



2013: 13 StG and 20 CoG 2014: 22 StG and 29 CoG 2015: 16 StG and 17 CoG 2016: 25 StG and 23 CoG 2017: 20 StG and 13 CoG 2018: 18 StG and 17 C0G 2019: 19 StG and 15 CoG 2020: 25 StG and 23 CoG 2021: 35 StG and 24 CoG



Evolution of % of grants with Spanish HIs



2013: 4.3% StG and 6.4% CoG 2014: 5.9% StG and 7.8% CoG 2015: 4.6% StG and 5.6% CoG 2016: 6.4% StG and 7.3% CoG 2017: 4.9% StG and 4.0% CoG 2018: 4.4% StG and 5.8% COG 2019: 4.7% StG and 5.8% CoG 2020: 5.7% StG and 7.0% CoG 2021: 7.4% StG and 7.5% CoG 2022: 4.2% StG and 7.6% CoG

Evolution of % of applications with Spanish HIs



2013: 10.6% StG and 12.0% CoG 2014: 8.6% StG and 11.8% CoG 2015: 6.9% StG and 8.4% CoG 2016: 7.7% StG and 8.6% CoG 2017: 7.5% StG and 9.4% CoG 2018: 7.0% StG and 8.1% COG 2019: 7.7% StG and 8.8% CoG 2020: 6.3% StG and 8.7% CoG 2021: 6.9% StG and 8.3% CoG 2022: 7.3% StG and 9.3% CoG

Evolution of applications with Spanish HIs



2013: 344 StG and 431 CoG 2014: 276 StG and 293 CoG 2015: 197 StG and 169 CoG 2016: 223 StG and 196 CoG 2017: 226 StG and 234 CoG 2018: 218 StG and 234 CoG 2019: 236 StG and 212 CoG 2020: 205 StG and 214 CoG 2021: 277 StG and 215 CoG 2022: 207 StG and 202 CoG

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Top Host Institutions in Spain



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Grantees at home and abroad



Synergy grantees



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Evolution of Synergy applications and grants





ERC Proof of Concept 2011-2022



ERC grants in Spain by region

Regions	StG	CoG	AdG	Total	LS	PE	SH	PoC	SyG
Andalusia	20	5	7	32	12	16	4	5	1
Aragon	9	4	4	17	1	15	1	2	
Asturias	3	1	1	5	2	3		1	
Balearic Islands	1	1	1	3	1		2		
Basque Country	20	13	13	46	9	32	5	11	2
Canary Islands	2	3	2	7	1	4	2		
Cantabria	1	3		4	3		1		
Castilla y Leon	7		1	8		4	4	2	
Castilla-La Mancha		1		1		1			
Catalonia	152	99	111	362	95	152	115	109	22
Galicia	18	7	2	27	8	12	7	5	3
Madrid	65	45	43	153	52	73	28	32	7
Murcia	1	2	1	4	2	2		2	
Navarra	7	3	4	14	8	2	4		
Valencia	22	18	13	53	23	27	3	7	2
Total	328	205	203	736	217	343	176	176	37



ERC panel members by country of host institution

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* Number of instances that experts based in a certain country contributed to the ERC peer review (based on the ERC calls StG, CoG, AdG and SyG 2007-2022)

Thank You!

More information: erc.europa.eu



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