The European Research Council in H2020



Established by the European Commission



Contents



- ERC basics
- ERC achievements
- ERC in H2020
- Greece at ERC







ERC basicsWhat is ERC?



- An autonomous funding body set up by the EU in 2007 and led by scientists
- Funding excellent researchers of any nationality, to carry out frontier research in Europe, via annual competitions
- In all fields of science and humanities, without thematic priorities
- 1 researcher, 1 Host Institution, 1 project, 1 selection criterion
- Substantial grants and a recognised label of excellence
- International, top level peer-review



ERC basics ERC structure



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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

- 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 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







ERC Scientific Council Members



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Prof. Don Dingwell

ERC Secretary General

- Prof. Klaus BOCK (Chemistry)
- Prof. Nicholas CANNY (History)
- Prof. Sierd A.P.L. CLOETINGH (Earth Sciences)
- Prof. Tomasz DIETL (Physics)
- Prof. Daniel DOLEV (Computer Sciences)
- Prof. Athene DONALD (Biological Physics)
- Prof. Carlos M. DUARTE (Biology)
- Dr. Barbara ENSOLI (Medicine)
- Prof. Daniel ESTEVE (Physics)
- Prof. Pavel EXNER (Applied Mathematics & Mathematical Physics), ERC Vice President
- Prof. Reinhard GENZEL(Astrophysics)
- Prof. Carl-Henrik HELDIN (Molecular Cell Biology), ERC Vice President
- Prof. Timothy HUNT (Biology)
- Prof. Matthias KLEINER (Engineering)
- Prof. Eva KONDOROSI (Biology)
- Prof. Nuria SEBASTIAN GALLES (Psychology)
- Prof. Helga NOWOTNY (Science and Technology Studies), ERC President
- Prof. Alain PEYRAUBE (Linguistics)
- Prof. Mart SAARMA (Biology)
- Prof. Anna TRAMONTANO (Biochemistry)
- Prof. Isabelle VERNOS (Molecular and Cell Biology)
 - Prof. Reinhilde VEUGELERS (Economics)



6

ERC basics ERC funding schemes



Starting Grants

starters (2-7 years after PhD) up to € 2.0 Mio for 5 years

Consolidator Grants

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



ERC basicsSubstantial grants to the very best



- > The Researcher (PI : Principal Investigator)
 - ERC funds individual scientists
 - Any nationality, age or current place of work in the world
 - Starting, consolidator or advanced grant (depending on work experience and scientific achievements)
- Research team
 - The PI can choose national or trans-national team members if scientific added value proven
 - The grant covers the salary of team members



ERC basicsSubstantial grants to fund frontier research



Frontier research project

- All fields of fundamental research: Physical Sciences & Engineering, Life Sciences, Social Sciences & Humanities
- Bottom-up: no predetermined subjects, no priorities
- High risk/high gain
- 5 years projects
- No consortia, no co-funding

Host Institution (HI) in Europe

- The one where the researcher already works, or any other institution based in EU or associated countries
- Grants are portable (= the PI can change Host Institution)
- Universities, research centres; public or private



Evaluation of proposals: main features



- Goal of the evaluation: select the best frontier research proposals
- Only evaluation criteria: excellence
- Method: peer review
- Structure: 25 panels distributed in 3 scientific domains (10 Physical Sciences, 9 Life sciences and 6 Social Sciences and Humanities)
- Each panel consists of 1 panel chair and 12-15 panel members

What makes ERC evaluation exceptional?



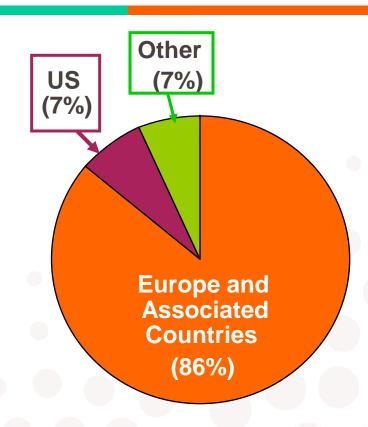
Peers Review procedure



Evaluation of proposals: peers



- Panel members: typically 375 / call
 - High-level scientists
 - Recruited by ScC from all over the world: ~14% from outside Europe
 - About 12-15 members plus a chair person
- Referees: typically 2000 / call
 - Evaluate only a small number of proposals
 - Similar to normal practise in peerreviewed journals

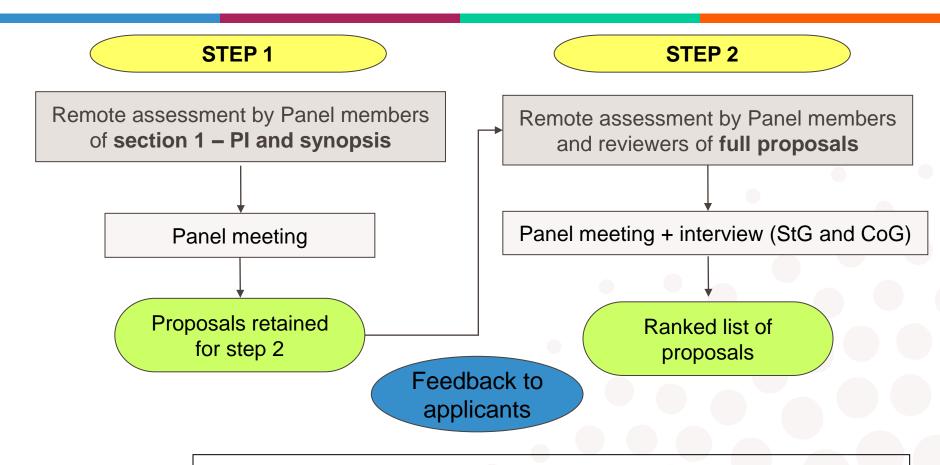




Evaluation of proposals: review procedure



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- Right balance between generalist + specialized review
- Appropriate treatment of interdisciplinary proposals
- Good benefit-cost ratio



Evaluation of proposals: panel structure



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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

Social Sciences and Humanities

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

Physical Sciences & Engineering

- PE1 Mathematics
- 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





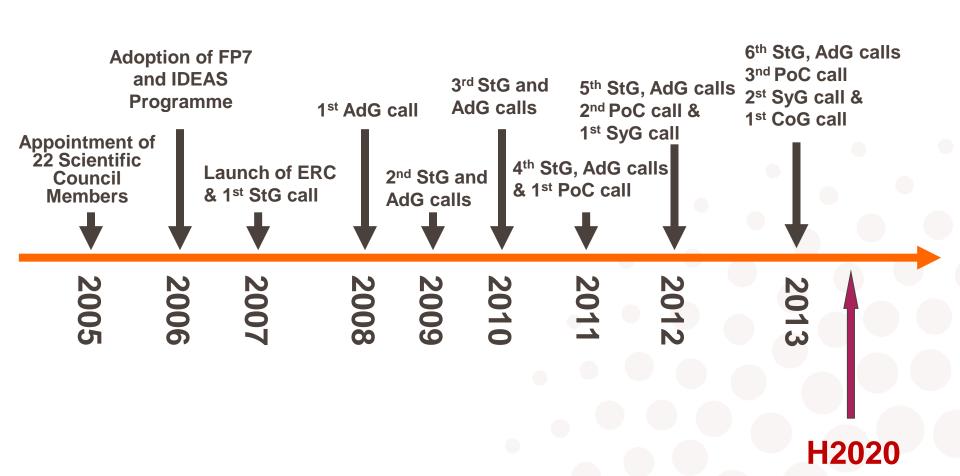
ERC achievements



ERC achievements Time line



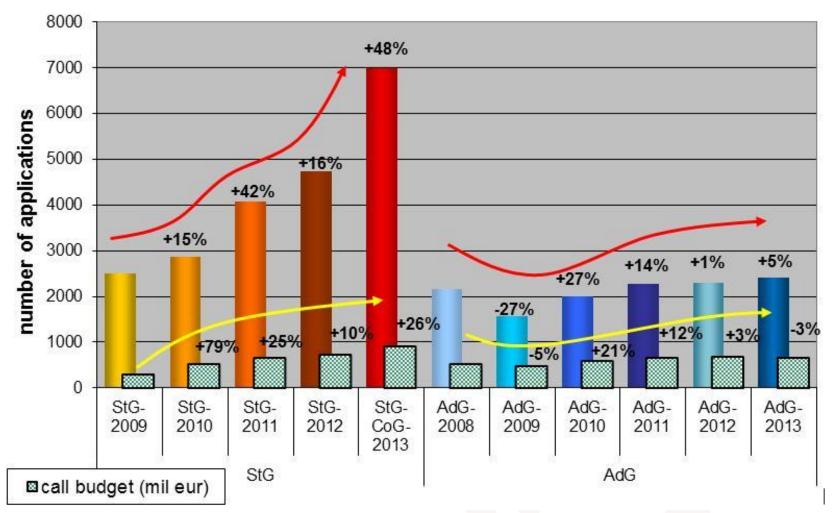
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ERC achievementsRising applications



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	Total number		of which			
ERC Calls	of applications	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		
Starting Grant	26,693	25,858	2,332	10.5		
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	284	12.0		
Advanced Grant	12,756	12,404	1,702	13.9		
Proof of Concept 2011 - 1&2	151	139	51	36.7		
Proof of Concept 2012 - 1&2	143	120	60	50.0		
Proof of Concept 2013 - 1	145	139	33	23.7		
Proof of Concept	439	398	144	36.8		
Synergy Grant 2012	710	697	11	1.6		

^{*} withdrawn and ineligible proposals not taken into account

^{**} percentage of funded proposals in relation to evaluated proposals



erc

European Research Council
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ERC achievements After 6 years of existence...



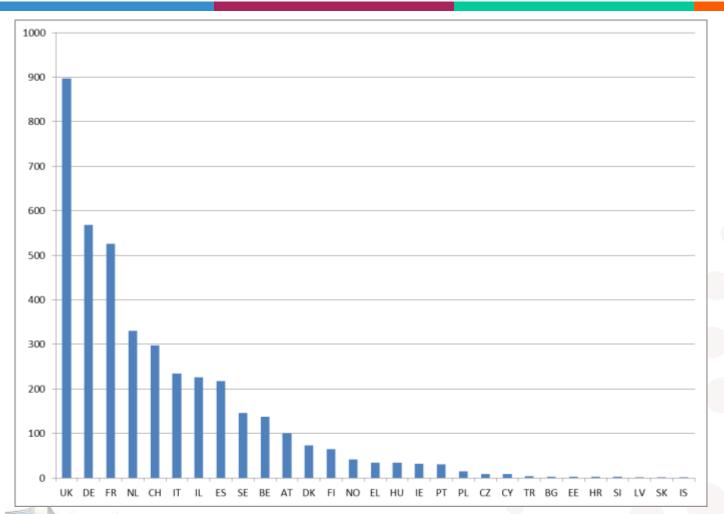
- Highly recognised by the research community
- 4 000 top researchers funded (65% are at an early-career stage); 58 nationalities represented
- Highly competitive (average success rate 12%)
- Working in >500 different institutions in 29 countries
- 50% of grantees in 50 institutions: "Excellence attracts excellence"
- Benchmarking effect: impact on national programmes and agencies; national funding for best "runners-up"
- Efficient and fast grant management



ERC achievements Grants per country of host institution



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ERC Starting Grant calls 2007-2013 ERC Advanced Grant calls 2008-2013

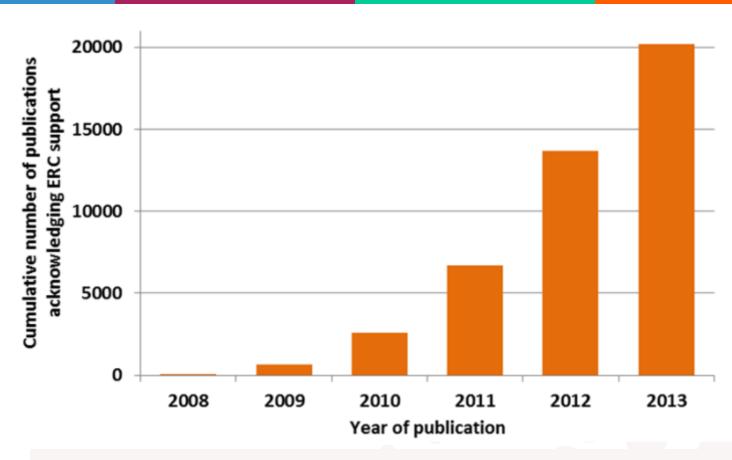
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FR	National Institute of Health and Medical Research (Inserm)	3	31	17	48	47		1	
FR	French Alternative Energies and Atomic Energy Commission	4	32	9	41	7	33	1	
ES	Spanish National Research Council (CSIC)	5	20	15	35	14	16	5	
FR	National Institute for Research in Computer Science and Automatic Control (INRIA)	6	19	12	31		31		

ERC achievements

Publication from ERC funded projects



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Already over 20.000 papers acknowledging ERC support published in international, peer reviewed journals.



ERC achievements Highly distinguished grantees





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Stanislav Smirnov **AdG 2008** Simon Donaldson AdG 2009 **Elon Lindenstrauss** AdG 2010 2013 Wolf Prize awarded to

Peter Zoller - SyG 2012

2013 Holberg Prize awarded to Bruno Latour - AdG 2010

2013 Crafoord Prize awarded to Lars Klareskog - AdG 2009

Other Prizes awarded to ERC grantees

EMBO GOLD MEDAL 2011 - Simon BOULTON - AdG 2010

FEBS|EMBO WOMEN IN SCIENCE 2011 - Carol ROBINSON - AdG 2010

EMBO GOLD MEDAL 2010 - Jason W CHIN - StG 2007

THE SHAW PRIZE IN MATHEMATICAL SCIENCES 2011 - Christodoulou Demetrios - AdG 2009

CRAFOORD PRIZE 2011 and EUROPEAN LATSIS PRIZE 2010 - Ilkka Hanski - AdG 2008

L'ORÉAL-UNESCO AWARD FOR WOMEN IN SCIENCE 2011 - Anne L'Huillier - AdG 2008

to ERC grantees

EMBO GOLD MEDAL 2012 Jiri FRIML - StG 2011

2012 Prizes awarded

BALZAN PRIZE 2012 David BAULCOMBE - AdG 2008

EUROPEAN LATSIS PRIZE 2012 Uffe HAAGERUP - AdG 2009

KELVIN PRIZE 2012 Colin McINNES - AdG 2008

WOLF PRIZE 2010 - Anton ZEILINGER, David BAULCOMBE-AdG 2008, Alain ASPECT-AdG 2010LEIBNIZ PRIZE 2012 Michael BRECHT - AdG 2008 & Joerg WRACHTRUP - AdG 2010

MILLENIUM AWARD 2010 - Michael GRATZEL - AdG 2009

ERC achievements

A success story for European research



More than 5 years of excellent IDEAS





Events around the world - ERC goes global campaign





Quarterly e-newsletter

Specific brochures & more



Wide **media** coverage (both specialised & general press)

User-friendly website and social media accounts





ERC achievements ERC around the world

European



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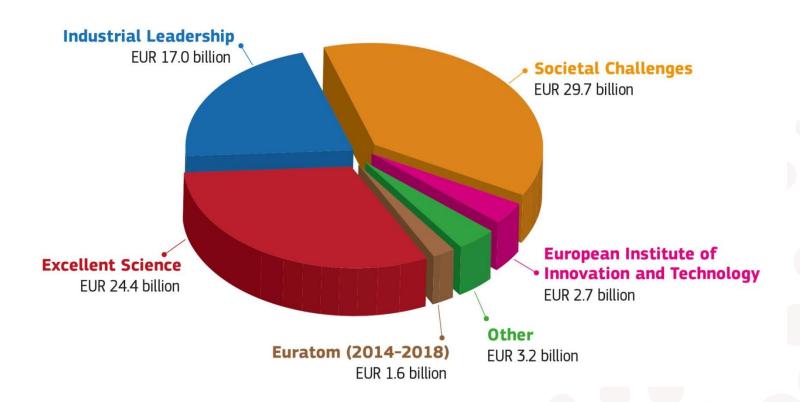
ERC in H2020



€ 79 billion from 2014 to 2020



HORIZON 2020 BUDGET (in current prices)





Work Programmes 2014 – Funding for calls



Excellent Science Pillar:∼ € 3 billion				
European Research Council	4 calls	€ 1 662 million		
Marie Skłodowska-Curie actions	6 calls	€ 800 million		
Future and Emerging Technologies (FET)	4 calls	€ 200 million		
European Research Infrastructures (including e-Infrastructures)	4 calls	€ 277 million		

Work Programmes 2014 – Funding for calls



Industrial Leadership Pillar:~ € 1.4 billion			
Information and Communication Technologies (ICT)	2 calls	€ 700 million	
Nanotechnologies, Advanced Materials, Biotechnology and Production	5 calls	€ 500 million	
Space	5 calls	€ 128 million	
Access to Risk Finance	2 calls	€ 5 million	
Innovation in small and medium-sized enterprises (Does not include €3 billion for SME instrument or Eurostars)	1 call	€ 10 million	

In addition € 300 million for Financial Instruments (not through calls)



Work Programmes 2014 – Funding for calls



Societal Challenges Pillar:~ € 2.8 billion				
Health, demographic change and wellbeing	2 calls	€ 600 million		
Food Security, Sustainable Agriculture and Forestry, Marine and Maritime and Inland Water Research and the Bioeconomy	3 calls	€ 300 million		
Secure, clean and efficient energy	4 calls	€ 600 million		
Smart, green and integrated transport	3 calls	€ 540 million		
Climate action, environment, resource efficiency and raw materials	3 calls	€ 300 million		
Europe in a changing world – inclusive, innovative and reflective societies	5 calls	€ 112 million		
Secure Societies	4 calls	€ 200 million		

In addition		
Spreading Excellence and Widening Participation	3 calls	€ 50 million
Science with and for Society	4 calls	€ 45 million



Major Simplification for the benefit of applicants



- 1. A single set of rules for all funding under Horizon 2020
- ✓ Fewer, more flexible, funding instruments
- 2. Simpler reimbursement: 1 project = 1 funding rate
- √ 100% of the total eligible costs (70% for innovation actions)
- Non-profit legal entities can also receive 100% in innovation actions
- ✓ Single flat rate for indirect costs (25% of eligible costs)
- 3. Faster time to grant
- Within 8 months of call deadline



Major Simplification for the benefit of applicants



- 4. Fewer, better targeted controls and audits
- 5. Coherent implementation
 - ✓ Through dedicated agencies
 - ✓ Single IT system
- 6. Simplification in grant agreements



Simpler access through the

Participant Portal



- Single entry point from calls to electronic submission of proposals
- New tools for smart searches for the benefit of users, including newcomers to the programme.



ERC in the H2020 structure



The HORIZON 2020 main components:

- Excellent Science
 - → World class science is foundation of technologies, jobs, well-being
 - → Europe needs to develop, attract, retain research talent
 - → Researchers need access to the best infrastructures
- Industrial leadership
- Societal challenges

Excellent Science:

- European Research Council (budget under H2020: € 13 billion)
- Future and Emerging Technologies
- Marie Sklodoswka Curie Actions
- Research Infrastructures



ERC in H2020

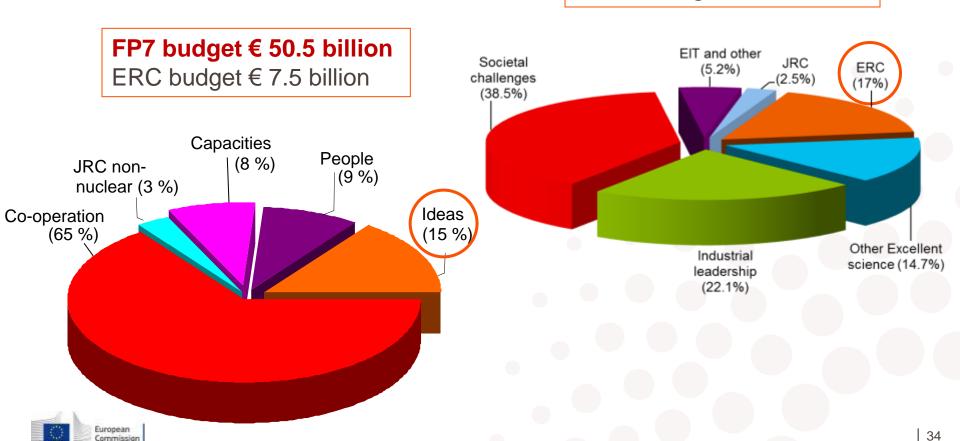
Budget Horizon 2020 after negotiations between Parliament-Council-Commission



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H2020 budget € 77 billion

ERC budget € 13 billion



ERC in H2020 Changes and continuity



- Essential features maintained:
 - Same schemes, same principles, same selection procedures/criteria
 - Independent Scientific Council with full authority over funding strategy
 - Executive Agency with autonomous operation
- Increased budget (13 Bio € in current prices for 2014-2020):
 - More opportunities than ever for top research talents
- Strengthening the Scientific Governance of the European Research Council:
 - Strengthening the links between the Scientific Council and the Executive Agency
 - Merging positions of President of ERC and Secretary General
 - Full-time President based in Brussels
 - 3 Vice-Chairs elected from amongst the Scientific Council members

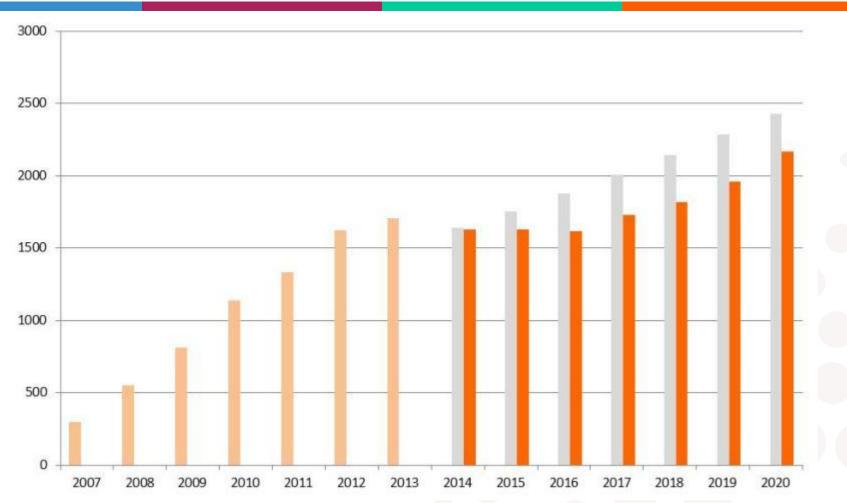


ERC in H2020

2014 – 2020 budget



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ERC budget:

FP7

H2020

light grey = COM proposal₃₆ orange = after trilogue

ERC in H2020 Work program 2014, summary of main features



- Indicative publication date of first calls: December 11, 2013
- ➤ Three ERC frontier research grants will be available under Work Programme 2014: Starting; Consolidator; and Advanced Grants
- The Scientific Council will analyse the pilot phase of the ERC Synergy Grant (calls were made under Work Programmes 2012 and 2013) before deciding on the scope and timing of future calls. No SyG call under Work Programme 2014
- Extension of restrictions on applications will apply to the 2015 calls based on the outcome of the evaluation of the 2014 calls
- ERC Principal Investigators will also continue to be able to apply for the Proof of Concept Grant, first introduced in 2011
- Overhead: 25%
- Indicative budget for 2015 to help the research community to plan applications



ERC in H2020 Work program 2014, indicative planning



ERC calls	Budget	Call Publication*	Submission Deadline(s)*
Starting Grants ERC-2014-StG	485 M€	11 December 2013	25 March 2014
Consolidator Grants ERC-2014-CoG	713 M€	11 December 2013	20 May 2014
Advanced Grants ERC-2014-AdG	450 M€	17 June 2014	21 October 2014
Proof of Concept ERC-2014-PoC	15 M€	11 December 2013	DL1: 1 April 2014 DL2: 1 Oct. 2014

^{*} Pending the adoption of the WP 2014



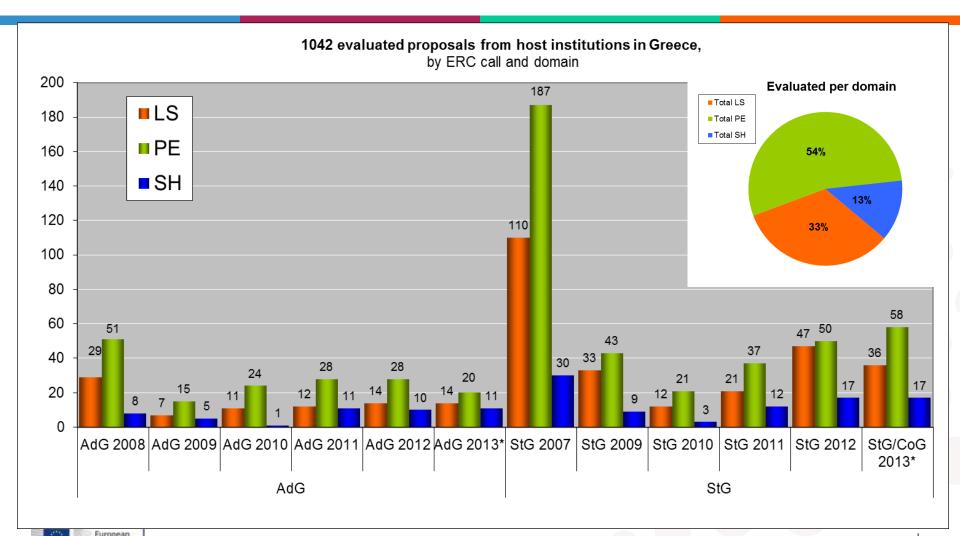




Evaluated proposals from hosts in Greece



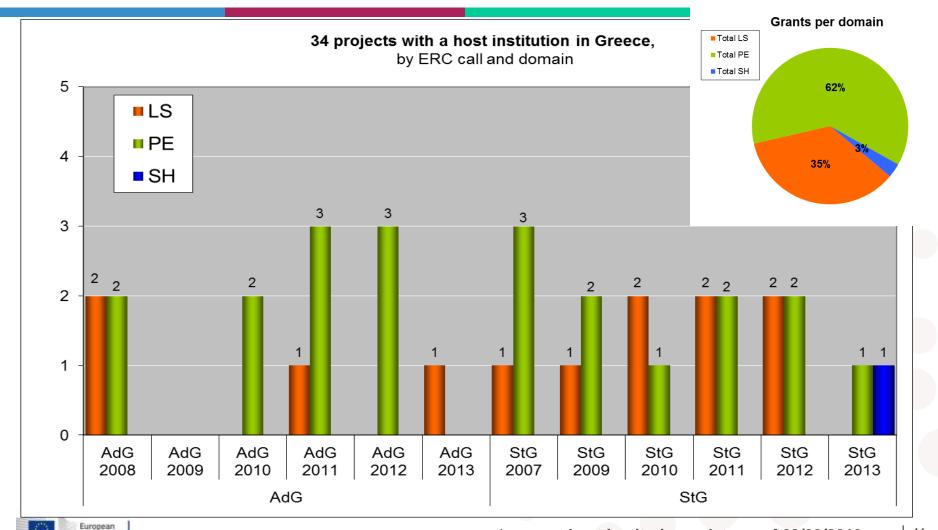
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Granted proposals at host institutions in Greece

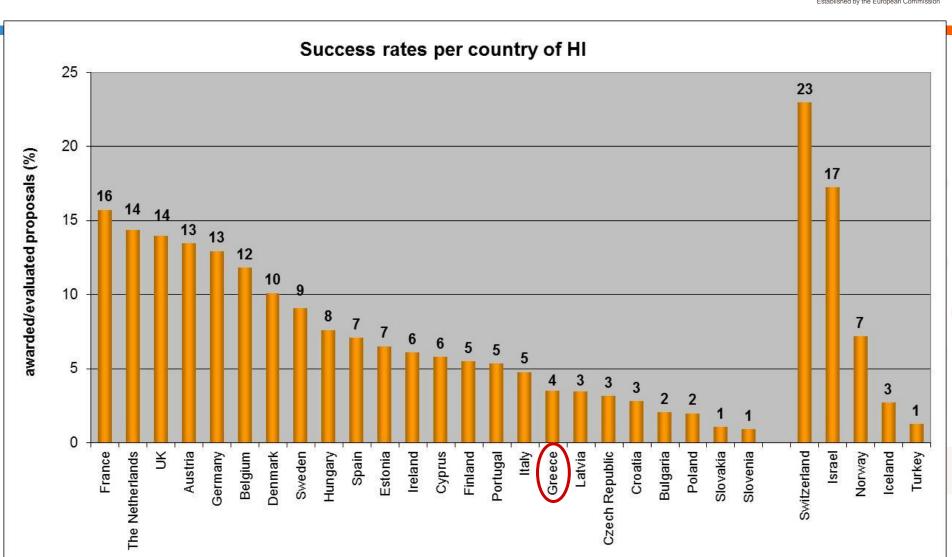


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Success rates per country of Host Institution

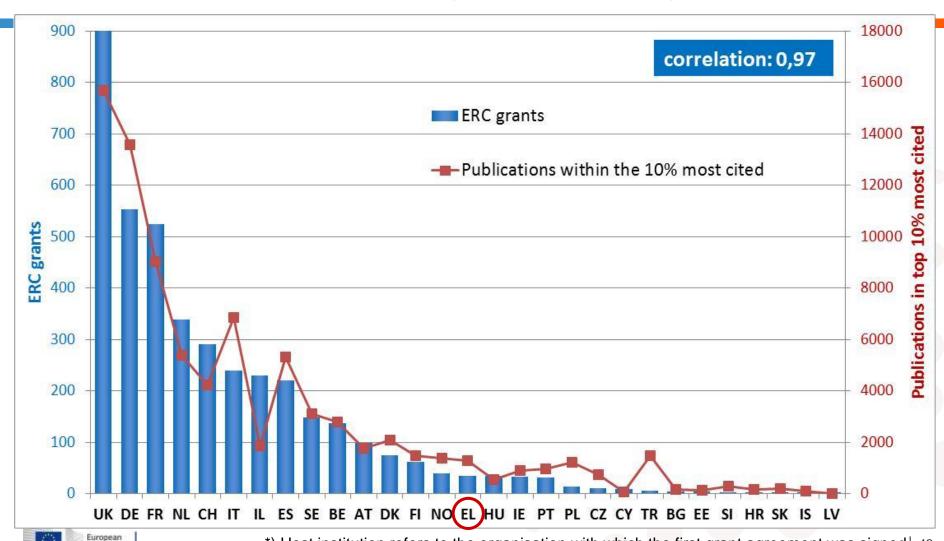




ERC grant distribution to countries of HI

ERC StG and AdG calls 2007-2013 (without CoG 2013)

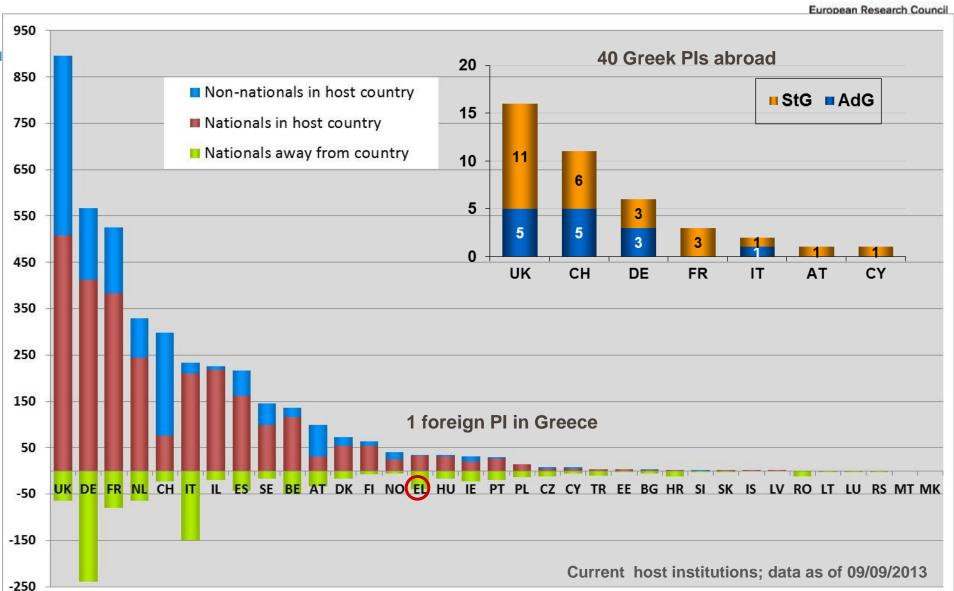




Mobility of researchers







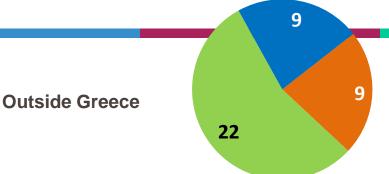
Greek ERC grantees outside Greece

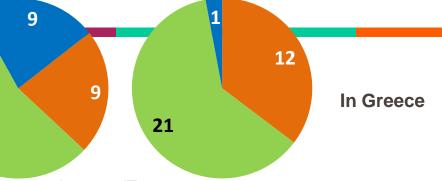
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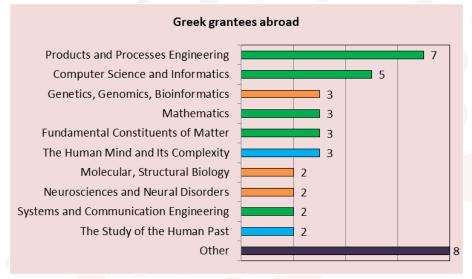




Greeks applying with a HI outside Greece	evaluated	grantees	s.rate
resident in Greece	31	4	13%
resident in other EU countries	342	35	10%
resident outside EU	8	1	13%
Total	381	40	10%

Greeks applying with a HI in Greece	evaluated	grantees	s.rate
resident in Greece	869	28	3%
resident in other EU countries	19	1	5%
resident outside EU	39	4	10%
Total	927	33	4%

Host institution	Greek PIs
Imperial College	4
University of Oxford	4
Swiss Federal Institute of Technology Zurich	4
University of Geneva	3
University of Cambridge	3
Swiss Federal Institute of Technology Lausar	3
Other	19
TOTAL	40

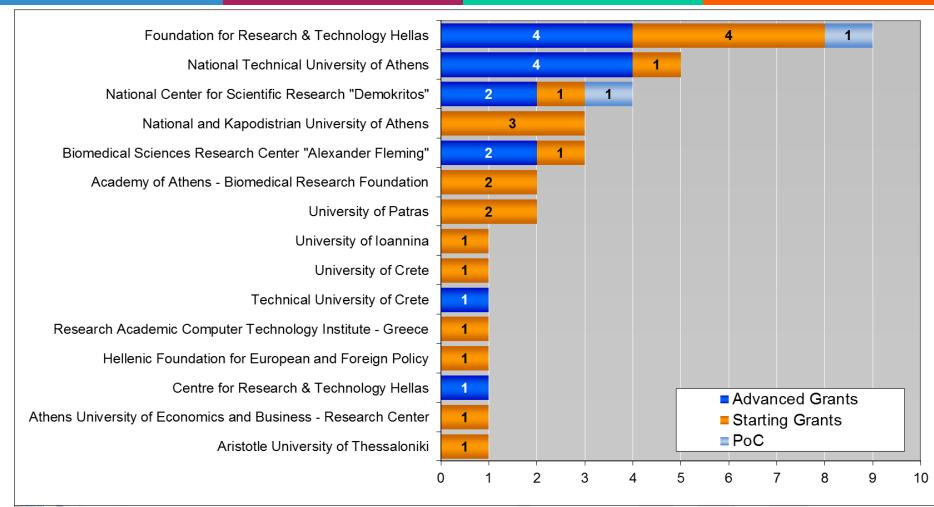


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Host institutions in Greece

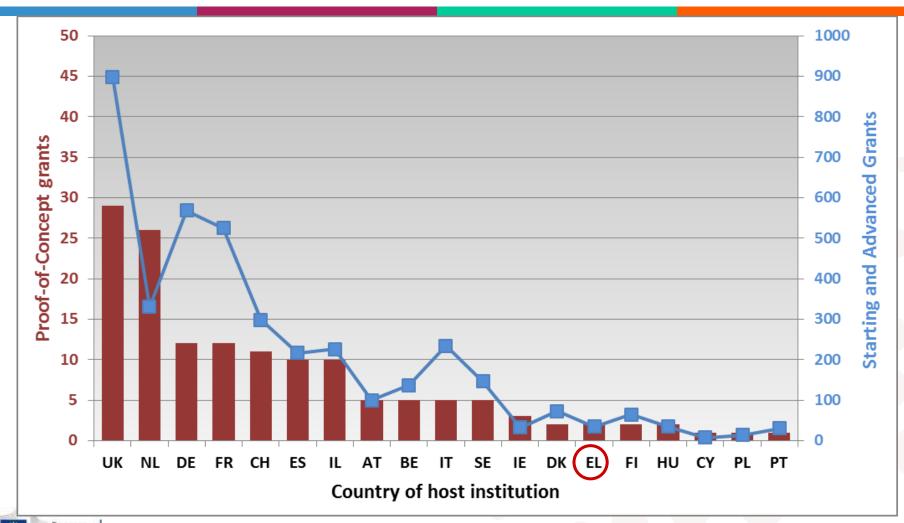
ERC StG and AdG calls 2007-2013 (without CoG 2013)





PoC grants by country of host institution ERC PoC calls 2011, 2012 and 2013-1





A few examples of ERC projects



Nanodrugs for targeted treatments of cancer



Project: A Novel Nanocontainer drug carrier for targeted treatment of prostate cancer (NANOTHERAPY)

PI: George Kordas **HI:** National Center for Scientific Research

"Demokritos"

Call: Advanced Grant 2008 and PoC Grant 2013 Funding: €2 million for 5 years + €150 000 PoC Grant

2013

Characterising organic particles and their impact on climate change and pollution



Project: Atmospheric Organic Particulate Matter, Air Quality and Climate Change Studies

(ATMOPACS)

PI: Spyros Pandis

HI: Foundation for Research and Technology Hellas

Call: Advanced Grant 2010 **Funding:** € 2.5 million for 5

years



For further information



- Participant Portal
- http://ec.europa.eu/research/participants/portal/desktop/en/home.html
- Research enquiry service
- http://ec.europa.eu/research/enquiries
- Expert evaluators needed!
- http://ec.europa.eu/research/index.cfm?pg=newsalert&year=2013&na=na-221113
- Learn more about Horizon 2020
- http://ec.europa.eu/horizon2020



Thank you for your attention!

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