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# 5 years of Excellence in the European Research Area 2007-2011

## the case of GREECE

ΕΘΝΙΚΟ ΚΕΝΤΡΟ ΤΕΚΜΗΡΙΩΣΗΣ
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# Index

Annex

# Tables, Charts & Diagrams

*It is with great pleasure that we introduce our new "Intelligence Report" which is being produced as part of the activities that the National Documentation Centre of Greece (EKT) undertakes as a National Contact Point for the 7th Framework Programme for Research and Technological Development (FP7) of the European Commission. With this report we aim to present empirical data derived from institutional experience and expertise and contribute to the process of mapping and understanding research activity in Greece.*

*Based on its statutory role for the collection, organization and distribution of scientific information, EKT undertakes a broad range of projects and activities which aim to enable open access to, and dissemination of, research results and support the needs of policy makers as well as the academic and research community in the Greek area of Research and Innovation (R&I). To this end, the institution develops user-oriented services for the world of research and innovation (such as open access repositories, e-publishing activities, digital libraries, national services for library organization, etc.) and acts as a strategic partner and an essential building block for the European Research Area.*

*Addressing the need for open and transparent data which promotes research and innovation, EKT has established the systematic publication of a series of "intelligence reports", studies, science metrics and thematic editions. These publications rely on research data emerging from the institution's diverse activities and strategic co-operations and cover a broad range of realms. With an aim to transmit and share knowledge acquired by the implementation of projects and further develop expertise in the domain of Research and Innovation, the approach to the dissemination of research results adopted by EKT currently places emphasis on:*

***Studies and Science Metrics:** On a regular basis, EKT publishes a series of studies and thematic reports which collect, analyse and synthesise valuable data on Greek scientific activity so that it can be effectively integrated into the broader European and international context. Based on policy priorities (which emerge either out of the country's research environment or specific needs, or at the European level), studies on scientific indicators (bibliometrics, scientometrics and webometrics) are currently used as valuable reference tools by a variety of national and international public bodies, research institutions, universities and policy makers. In addition, EKT runs the Current Information Systems (CRIS) and produces thematic studies that rely on data emerging from different areas of EKT's activities.*

***Intelligence Reports:** Since 1998, EKT has been acting as a National Contact Point from the Fifth to the Seventh FPs, providing comprehensive information and support to Greek research teams. EKT disseminates findings and results which emerge in the course of European projects, through regular Intelligence Reports which aim to present the objectives, results, impact, activities, assessments and achievements as well as the technical and policy implications of the actions which are either completed or in progress. This realm covers EU-supported research as well as key research activities at the national level in the European Research Area, and other European projects. The present report belongs to this set of publications.*

*The IDEAS Programme of the European Research Council, commonly known as the Programme of Excellence, has been recognized as the success story of FP7. This Programme provides the focus for the first of our series of "intelligence reports" on FP7 - a valuable tool for the exploitation and analysis of data which emerges from the implementation of the European projects in Greece. The IDEAS Programme supports investigator-driven, frontier research that may be carried out in any field*

*of research across the entire spectrum of disciplines. Excellence is the sole criterion for funding. The Programme is being implemented by the European Research Council (ERC) according to the principles of scientific excellence, autonomy, efficiency, transparency and accountability.*

*This report, entitled "5 years of excellence in the European Research Area 2007-2011: the case of Greece" provides a detailed analysis of the first five years of the ERC and the IDEAS Programme, their achievements and their impact on the European Research Area. It focuses on the Greek case, demonstrating results on the Greek Research and Innovation landscape. Findings are indicative of the excellence of the Greek scientific and academic community in terms of ERC success.*

*In a remarkably short time, the ERC has gained widespread recognition as a world-class research funding agency and it has been a catalyst of change for the member states, setting high standards for the development of national and institutional research strategies, policies and practices. The first part of the report introduces the European Research Council and its vision of placing excellent, bottom-up, exploratory research at the heart of European research system.*

*The ERC has also gained a central place in the Europe 2020 strategy for growth and in the Innovation Union Strategy for promoting Europe's economic recovery, global competiveness and social prosperity. Boosting the budget dedicated to top-rate researchers, and especially younger talents, is a key instrument for stimulating the competiveness and growth needed for Greece's economic recovery.*

*The second part presents detailed information and statistics (success rates, distribution of funds) regarding the proposals submitted to the ERC in response to ERC Calls. In the third part, the focus is on the evidence and indicators of excellence which describe the landscape for Research & Innovation in Greece. Data obtained from the IDEAS Programme (such as patterns of mobility, gender distribution) are distributed along with charts, tables and figures which point to the major achievements of the ERC in the European Research Area and particularly those achievements that concern Greece. Attention is given to ERC operational performance, its direct and structural impact in terms of effects on research actions, research policies and funding structures.*

*Lastly, the report highlights the role of the National Documentation Centre of Greece as a National Contact Point for the 7th Framework Programme, its activities and achievements, and finishes with the future of the ERC in the frame of Horizon 2020.*

*This report is based on data collected by EKT, as the Programme's National Contact Point, from documents and information available at the ERC website http//erc.europa.eu (such as ERC annual reports and press releases) and statistics kindly provided by the European Research Council Executive Agency (ERCEA). Special thanks should be given to Dr Theodore Papazoglou (Head of UNIT A1- Support to the ERC Scientific Council of the ERCEA) for his constant support and guidance and to all ERC grantees and evaluators in Greece for sharing their invaluable expertise with potential Greek ERC applicants at relevant information days and workshops.*

# 1. ERC & the IDEAS Programme

The IDEAS programme supports investigator-driven, frontier research that may be carried out in any field of research across the entire spectrum of disciplines (apart from nuclear energy research), without predetermined priorities. Projects are implemented by "individual teams" led by a "principal investigator" (PI). Excellence is the sole criterion for funding, and the peer review criteria are the excellence of the PI and the excellence of the research project. The IDEAS programme is implemented by the European Research Council (ERC) according to the principles of scientific excellence, autonomy, efficiency, transparency and accountability.

The ERC (1) is the first pan-European funding agency for investigator-driven frontier research. It was set up in 2007 under the EU's 7th Framework for Research & Development (FP7) - the main instrument for funding research in Europe, running from 2007 to 2013. The total budget of the ERC is 7.5 billion €, spread over a period of seven years, representing 15% of the entire FP7 budget.

The ERC is the newest pioneering component of FP7 (2) and displays notable differences with other EU R&D programmes. ERC funding schemes are not based on traditional policy-driven priorities of the European Research Area such as transnational cooperation, thematic priorities, or national and geographical quotas, and supports research of a qualitatively different nature by encouraging excellent bottom-up projects at the cutting edge of science.

Today there is no clear distinction between 'basic' and 'applied' research due to the fact that emerging areas of science and technology often cover substantial elements of both. Even the boundaries between advancing the frontier of knowledge and solving practical problems are blurred. As a result, the term 'frontier" was coined to define the nature of research supported by the European Research Council. ERC activities are directed towards encouraging outstanding researchers to go beyond the established frontiers of knowledge and the boundaries of disciplines. They comprise the funding of projects not only designed around fundamental research questions but also those developed around well-defined technological challenges.

The ERC aims to increase the attractiveness of Europe for the best researchers worldwide and for industrial research investment and to strengthen the EU's capacity to generate new knowledge that will feed back into the economy and society, improving Europe's global competitiveness, prosperity and well-being. Ultimately, the ERC aims to make the European research base better prepared to respond to the needs of a knowledge-based society and provide Europe with the capabilities in frontier research necessary to meet global challenges. In this sense, the ERC represents a decisive instrument towards achieving the objectives of the 2020 Innovation Union (3).

The operational principles of the ERC is that of a Europe-wide competitive funding structure for frontier research executed by individual teams, complementing and not replacing national funding. Competition is open to the very best creative researchers across all scientific domains, irrespective of age, gender or nationality, who want to conduct their research in an EU Member State or Associated Country. The ERC offers substantial funding to senior research leaders (ERC Advanced Grants) as well as to early career top researchers (ERC Starting Grants). It also provides flexibility and portability of funds. The ERC supports the brightest ideas through calls that encourage curiosity-driven, innovative, risk-taking interdisciplinary research of the highest quality at the frontiers of knowledge. The competitive evaluation process - based on peer-review panels that are highly recognised and respected - is based on the sole criterion of scientific excellence.

## History & Governance Bodies

All major research policy stakeholders recognize that frontier research is a key driver of technological and social innovation. To succeed, any innovation system needs to reinforce its science base which produces new knowledge and opens up radically new research venues. However, an impact assessment of previous FPs identified the lack of dedicated mechanisms to support and strengthen excellent frontier research in Europe. Indeed, prior to the ERC, this type of research was funded mainly at national level, while the focal point of EU R&D programmes laid mainly in pre-competitive cooperative applied research. The ERC was then created in order to ad-

dress the key weaknesses of the European Research Area (4), to broaden the traditional funding instruments of the Framework Programme, and to expand their target audience to reach even more outstanding researchers.

In this sense, for many years the European scientific community - under the active leadership of the Commissioner for Research - has sought to create a novel approach to EU research funding dedicated to investigator-initiated "frontier" research. The European Research Council (ERC) officially came into existence on 2 February 2007 by a Decision of the Commission (5), in accordance with the Decisions of Council and Parliament on the Seventh Framework Programme (6), the Rules for Participation (7), and the Decision of the Council on the Specific Programme "Ideas" (8).

Presently, the ERC has a dual structure with an independent Scientific Council, setting the scientific strategy, and an autonomous Executive Agency that handle the operational management. The ERC operates with autonomy and integrity, and is guaranteed by the European Commission, to which it is accountable.

Between February and July 2009 a comprehensive Review (9) of the ERC's structures and mechanisms was undertaken by an independent panel of experts appointed by the European Commission. The overall conclusion of the Review was that the ERC has become a recognised success story of the 7th Framework programme, having established itself as an indispensable component of the European Research Area with a high reputation for the quality and efficiency of its operations. Nevertheless, concerns were expressed about the long-term sustainability of the ERC's legal and administrative structure, and the need to further adapt the governance bodies, mechanisms, administrative rules and practices to the ERC's mission to become a truly world-class funding agency in frontier research. Following the recommendations set by the review panel to streamline governance and to couple the two constituents of the ERC - the Scientific Council and The Executive Agency - two integrative mechanisms have been developed: the Secretary General and the ERC Board.

In December 2010, the Commission established an ERC Task Force (10) with the mandate to provide options for a long-lasting legal and organisational structure of the ERC. The Task Force, in agreement with the 2009 review, concluded that an improved structure of the Executive Agency was needed, in view of the forthcoming Framework Programme for Research and Innovation for 2014-2020 "Horizon 2020". Its major recommendation was to increase the ERC's operational autonomy, i.e. to reduce the powers of the Commission concerning the ERC's governance, and to have better arrangements for the supervision of ERC scientific, administrative and financial operations.

**The ERC Scientific Council (ScC)** is the decision-making body of the ERC. The Chair of the Scientific Council is the President of the ERC who acts as the formal representative of the ERC as well as of its Scientific Council before the European Commission and other bodies.

The Scientific Council's role is to set up the ERC's overall scientific strategy and the Work Programme, to monitor and control quality and performance, and to establish a communication strategy. From a scientific perspective, it is also responsible for establishing positions on the implementation and management of calls for proposals and evaluation criteria, peer review processes and proposal evaluation.

The ERC Scientific Council is composed of 22 eminent scientists and scholars, including a number of Nobel Prize winners that have been appointed by the Commission on the basis of their undisputed reputation as leaders - independent and committed to research. Additionally, in 2009, an "Identification Committee" was set up by the Commission in order to identify new members to fill vacant posts in the Scientific Council and make recommendations on a method for the future replacement of its members.

The current President of the ERC is Prof. Dr Helga Nowotny (serving since 1 March 2010). She chairs the ERC Board and Scientific Council meetings and prepares the agenda. The president is assisted by two Vice-Presidents who are equally the Vice-Chairs of the Scientific Council. It has to be noted that Prof. Dr. Fotis C. Kafatos was the first ERC President (until 1 March 2010) and has been elected Honorary President.

**The ERC Executive Agency (ERCEA).** Based in Brussels and with 350 staff by the end of 2011, the Executive Agency implements the Specific Programme IDEAS according to the strategies and methodologies established by the independent ERC Scientific Council. At the launch of the ERC in February 2007, there

was a dedicated implementation structure that operated under the Research Directorate-General as part of the European Commission. It was legally established as an executive agency by the Commission in December 2007 in accordance with decision N°2008/37/EC (11), obtaining administrative autonomy in July 2009 (12).

Since its administrative autonomy was granted in 2009, the Agency has been responsible for all aspects of administrative implementation and programme execution as provided for in the Work Programme. In particular, it implements the evaluation procedures, peer-review and selection processes according to the principles established by the Scientific Council and ensures the proper financial and scientific management of grants.

The Executive Agency operates on the basis of the powers delegated to it by the European Commission, which has the ultimate political responsibility for the implementation of the specific programme IDEAS. In that sense, the Commission exercises its supervisory responsibilities over the activities of the ERC Agency through a **Steering Committee**. The Director of the ERC Executive Agency (currently Pablo Amor) is responsible for the implementation of the ERC strategy as established by the Scientific Council and for the management of the Agency and its staff.

**ERC Secretary General.** The ERC Secretary General has a key role in ensuring the integrated operation of the ERC, based on the strategy and programme of activities prepared by the ERC Scientific Council. The Secretary General - rigorously screened for relevant experience and scientific qualifications - is appointed by the Scientific Council and is its permanent representative in Brussels. The Secretary General ensures an effective cooperation with the Executive Agency and the European Commission on a day-to-day basis.

The ERC Secretary General is currently Professor Donald Dingwell.

**ERC Board.** To streamline governance and further assure the liaison of the Scientific Council with the European Commission and the Executive Agency, the Chair- and Vice-Chairpersons of the Scientific Council and the Secretary General, together with the Director of the Agency, meet regularly as the ERC Board. These meetings are also attended by the senior management of the Agency and take place to oversee the implementation of the ERC strategy and Work Programme prepared by the Scientific Council.

# ERC Funding Schemes

**ERC funding schemes** are open to top researchers of any nationality, genre, or age who are engaged in pioneering research at the frontier of knowledge in their field and who are working or moving to work in Europe (27 EU Member States & Associated Countries).

ERC Grants are awarded and managed through open competition and according to simple procedures that maintain the focus on scientific excellence, encourage creativity and interdisciplinarity and combine flexibility with accountability.

The ERC Grants, although given to research organisations, are “personalized”: researchers (Principal Investigators) can, at any time, move to another host institution and take the grant with them. This «grant portability» provides leverage to researchers in the negotiations of their working conditions and promotes competition amongst host institutions which should lead to the improvement of the European research environment.

Two grant schemes designed by the Scientific Council form the core of ERC activities:

- ERC Starting Independent Research Grants (ERC Starting Grants) targeted at early-career excellent researchers and
- ERC Advanced Investigator Grants (ERC Advanced Grants) for already established research leaders in their field

Two additional funding initiatives with a significantly smaller budget were launched in 2011:

- The ERC Synergy Grants for small groups of excellent researchers
- The ERC “Proof of Concept” targeted at ERC grantees

ERC Starting Grants (ERC-StG) support top researchers with 2 to 12 years of experience after their PhD. Grants of up to 1,5 Mio € (up to 2 Mio € under certain circumstances) are awarded for up to five years. The ERC Starting Grant scheme aims to boost the career and performance of the next generation of research leaders by supporting their early scientific independence. The ERC "Starting Grants" address the gap in funding opportunities for researchers in the early stages of their careers. Through this scheme, outstanding researchers are assisted in establishing or consolidating their own team with a view to a transition from working under a supervisor to becoming independent researchers. Prospective grantees will need to make proposals of exceptional quality. ERC Grants require the scientific independence of grantees to be guaranteed by host institutions.

From the 2013 ERC Work Programme, the ERC Starting Grants have been divided into two different ERC funding schemes: the ERC Starting Grants and the ERC Consolidator Grants. The new ERC Starting funding scheme aims to support promising researchers who have the proven potential of becoming independent research leaders, with 2 to 7 years of experience after their PhD, and grants of up to 1,5 Mio € (in some situations up to 2 Mio €) for up to five years. The ERC Consolidator funding scheme is designed to support researchers who are consolidating their own independent research team or programme, with 7 to 12 years of experience after their PhD, and grants of up to 2 Mio € (in some circumstances up to 2,75 Mio €) for up to five years.

ERC Advanced Grants (ERC-AdG) are aimed at excellent established investigators. Grants amount to up to 2,5 Mio € (under certain circumstances up to 3,5 Mio €) for up to five years. The ERC Advanced Grants supports researchers of whatever age who have already established themselves as exceptional leaders in their field. The Advanced Grants are intended to fund highly innovative and ambitious projects and the most talented experienced investigators that display a recent outstanding track record (last 10 years) and a leadership profile in terms of originality and impact of research achievements.

ERC Synergy Grants (ERC-SyG) are aimed at small groups of excellent researchers (2 to 4) to carry out an ambitious project with high synergy effects. Grants of up to 15 Mio € are awarded for up to six years. In recent years, small research groups of Principal Investigators and their teams, frequently organised around interdisciplinary problems and shared facilities, have emerged as an increasingly productive unit of research. In 2011, the ERC Synergy scheme was introduced on a pilot basis to enable small groups of two to four Principal Investigators (with a designated Lead Principal Investigator) and their teams to bring together complementary skills, knowledge, and resources, in order to jointly address research problems at the frontier of knowledge going beyond what the individual PIs could achieve alone. The Synergy Grant scheme also adopts an investigator-driven approach with the research priorities and the configuration of the group determined by the PIs alone. It is open to exceptional independent researchers regardless of their career stage, age, gender and nationality, and proposals are evaluated on the sole criterion of excellence. As indicated in the ERC Annual Report of 2011, the Scientific Council will assess the Synergy Grant pilot over two calls (ERC-2012-SyG and ERC-2013-SyG) before deciding whether to cancel, retain or strengthen this type of funding in the future.

ERC Proof of Concept (ERC-PoC) is open only to ERC Grant holders. Grants of up to 150.000 € are awarded for up to 12 months. The blue sky research that the ERC has been supporting since its launch in 2007 often generates new discoveries, but also unexpected opportunities for commercial and societal applications. The ERC is committed to ensure the full exploitation of the excellent ideas it funds and in 2011 it introduced the "Proof of Concept" top-up grants to reduce the funding gap referred to as the "valley of death" that exists between frontier research and the earliest stage of a (marketable) innovation. This targeted new funding scheme will capture the maximum value of frontier research by getting good ideas one step further towards their utilization by the market and by society.

The PoC Grant scheme is open to all Principal Investigators who already hold or recently finished an ERC project. ERC Grant holders can apply for additional funding to establish the innovation potential of ideas arising

from their ERC-funded projects and to bring them to a pre-demonstration stage where potential commercialization opportunities have been identified. Successful applicants will have additional funding to prepare a dossier for potential investors (venture capitalists or companies) that could take the innovative idea (technology etc.) through the early commercialization phase. The PoC Grant supports activities such as viability studies; technical validation; market research; clarifying intellectual property rights issues and strategies; investigating potential business opportunities; establishing pathways to later-stage funding; and covering the initial expenses for establishing a company.

**The ERC Coordination & Support Actions (CSAs)** and the calls for tender are not regular ERC Grants, but instead are projects for the monitoring, assessment and evaluation of ERC activities. These include projects, studies, expert groups, seminars, data access and dissemination, as well as information and communication activities on the ERC. The CSAs or calls for tender do not support research, technological development or demonstration activities.

**ERC Grant Schemes: a Learning Process.** Since the beginning of the ERC and the launch of the first ERC call, fine-tuning measures have been applied to the grant schemes. These were based on ERC policies, lessons learned (past experiences), feedback from applicants and review panels (evaluators).

- Based on the lessons learned during previous calls - more specifically, the extremely high number of applications in the first Starting Grant call (ERC-2007-StG) - the application procedure has been changed from a two–stage submission process to one where the full application is submitted in a single stage process, re-submission restrictions have been established, and benchmark features regarding the profile of the applicant (Principal Investigator) have been incorporated in order to encourage proposals and researchers at the right level of ambition and competitivity.

- In line with the ERC' s main objective to attract & repatriate researchers, in addition to the relatively attractive funding conditions, both ERC Starting and Advanced Grant schemes offer incentives to encourage researchers of any nationality to move from countries outside the European Research Area (ERA) to an EU or Associated Country. Those applicants can request additional financial resources to cover "start-up" costs such as the purchase of major equipment they may not have in their new research environment (500.000 € for a Starting Grant and 1 Mio € for an Advanced Grant). Clearer indications of the expected commitment to the ERC-funded activity by the selected PIs have also been included. In this sense, both types of grantees are expected to spend 50% of their time in Europe whereas Starting and Advanced grantees have to dedicate at least 50% and 30% of their time to the ERC project, respectively.

- In compliance with the strategy of the ERC Scientific Council to target & support the next generation of research leaders in Europe, there has been a significant budgetary strengthening of the Starting Grant scheme which has led to an extension of the eligibility window for Starting grantees (3-9 years post PhD in the ERC-2007-StG call; 2-10 years post PhD in the ERC-2009-StG call and from 2010 2-12 years post PhD). It should be noted that since the 2010 Work Programme, there is an approximate 50/50 split in the funding for both main schemes the Starting and the Advanced Grants.

- Following feedback from applicants and reviewers (evaluators), the ERC evaluation criteria have been adjusted to take into account justified career gaps and/or unconventional research career paths. In addition, and in order to ensure that the ERC is at the forefront of best practices regarding the gender balance of grantees, since 2010 women researchers have been awarded with an increased extension of the Starting Grant eligibility window of 18 months per child born before or after a PhD award. Finally, there has also been fine-tuning measures to the ERC Grants such as a simplification of the proposal structure (no self-evaluation) and the recognition of two streams of applicants to the Starting Grant scheme ("starters" and "consolidators"). In this sense, in the 2013 ERC Work Programme, the ERC Starting Grants have been divided into two separated funding schemes, named ERC Starting Grants and ERC Consolidator Grants.

# 2. ERC Calls: Information & Statistics

To date (September 2012), the ERC has launched 15 calls[f] for proposals, of which 9 have been completed (see Table 1). The ERC has also launched 3 calls for Co-ordination and Support Actions (CSAs) as well as Calls for Tender which are for projects or services on the functioning of the ERC, so are not of interest to most researchers. The statistical data provided in this section refers to the 8 ERC calls for which the submission, evaluation and granting process was completed by the end of 2011. A 2nd edition of the current report will depict comprehensive analysis on all ERC calls launched under FP7.

• **Table 1**: **Information on ERC Calls launched**

| | Call Identifier (ID) | Publication Date | Deadlines & Links to the Participant Portal (13) | Status |
|---|---|---|---|---|
| Starting Grant 2007 | ERC-2007-StG | 22/12/2006 | 25/04/2007 [a] | Closed & evaluated |
| Advanced Grant 2008 | ERC-2008-AdG | 30/11/2007 | 28/02/2008 (PE) [b]<br>18/03/2008 (SH)<br>22/04/2008 (LS) | Closed & evaluated |
| Starting Grant 2009 | ERC-2009-StG | 24/07/2008 | 29/10/2008 (PE) [b]<br>19/11/2008 (SH)<br>10/12/2008 (LS) | Closed & evaluated |
| Advanced Grant 2009 | ERC-2009-AdG | 19/11/2008 | 25/03/2009 (PE) [b]<br>15/04/2009 (SH)<br>06/05/2009 (LS) | Closed & evaluated |
| Starting Grant 2010 | ERC-2010-StG | 30/07/2009 | 28/10/2009 (PE) [b]<br>18/11/2009 (LS)<br>09/12/2009 (SH) | Closed & evaluated |
| Advanced Grant 2010 | ERC-2010-AdG | 29/10/2009 | 24/02/2010 (PE) [b]<br>17/03/2010 (LS)<br>07/04/2010 (SH) | Closed & evaluated |
| Starting Grant 2011 | ERC-2011-StG | 20/07/2010 | 14/10/2010 (PE) [b]<br>09/11/2010 (LS)<br>24/11/2010 (SH) | Closed & evaluated |
| Advanced Grant 2011 | ERC-2011-AdG | 04/11/2010 | 09/02/2011 (PE) [b]<br>10/03/2011 (LS)<br>06/04/2011 (SH | Closed & evaluated |
| Proof of Concept 2011 | ERC-2011-PoC | 29/03/2011 | 16/11/2011 [c] | Closed & evaluated |
| Starting Grant 2012 | ERC-2012-StG | 20/07/2011 | 12/10/2011 (PE) [b]<br>09/11/2011 (LS)<br>24/11/2011 (SH) | Closed & under evaluation |
| Synergy Grant 2012 | ERC-2012-SyG | 25/10/2011 | 25/01/2012 [a] | Closed & under evaluation |
| Advanced Grant 2012 | ERC-2012-AdG | 16/11/2011 | 16/02/2012 (PE) [b]<br>14/03/2012 (LS)<br>11/04/2012 (SH) | Closed & under evaluation |
| Proof of Concept 2012 | ERC-2012-PoC | 02/02/2012 | 03/10/2012 [d] | Open |

**(a)** Single deadline for all domains **(b)** Different deadlines per domain; PE= Physical Sciences & Engineering domain; SH = Social Sciences & Humanities domain; LS = Life Sciences domain **(c)** The ERC-2011-PoC call had an intermediate deadline of 15th June 2011 **(d)** The ERC-2012-PoC call had an intermediate deadline of 3rd May 2012 **(e)** The ERC has also launched 3 calls for CSAs (Coordination & Support Actions): ERC-2008-Support; ERC-2009-Support; ERC-2012-Support-1 **(f)** On 10th July 2012, the ERC-2013-StG and ERC-2013-AdG calls were launched.

**Table 2: Information on global & Greek participation per ERC Call**

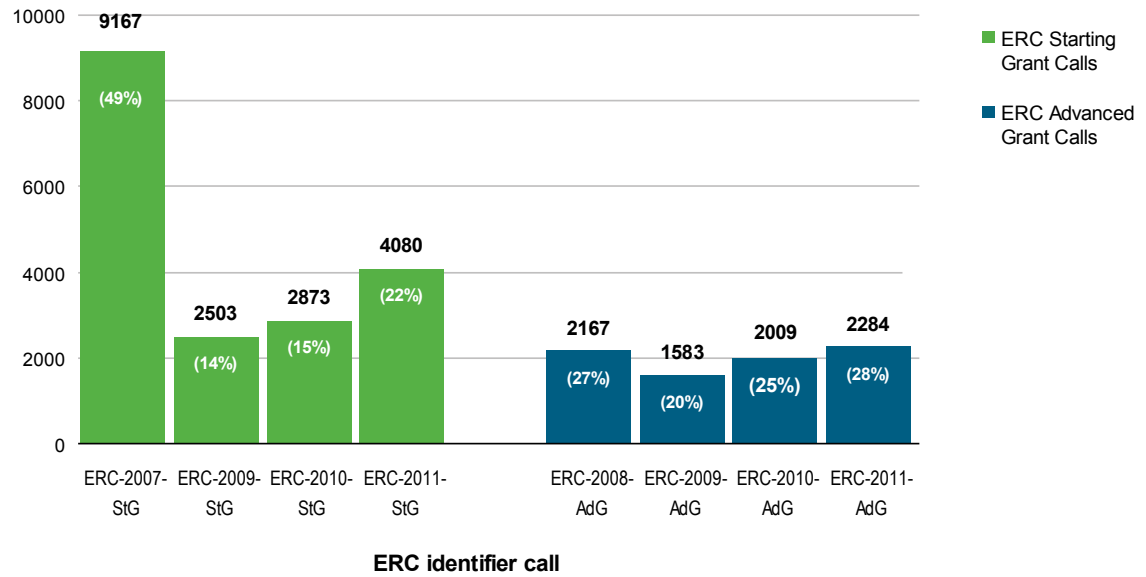
| | Call Budget (Mio €) | Proposals received | Proposals evaluated [a] | Total Grants | Success Rate [b] | Number (&%) of Greek applications [c] | Number (&%) of Greek Grants [d] | Greek Success Rate [b] | Amount in € for Greece | % of the Budget for Greece | Statistics | List of Grantees |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ERC-2007-StG** | 335 | 9.167 | 8.787 | 299 | 3,4% | 327 (3,7%) | 4 (1,3%) | 1,2% | 3.868.395 | 1,15% | Indicative statistics | Starting Grant 2007 winners |
| **ERC-2009-StG** | 325 | 2.503 | 2.392 | 245 | 10,2% | 85 (3,6%) | 3 (1,2%) | 3,5% | 3.333.040 | 1,0% | Indicative statistics | Starting Grant 2009 winners<br>Additional Researchers selected |
| **ERC-2010-StG** | 580 | 2.873 | 2.767 | 436 | 15,8% | 36 (1,3%) | 3 (0,7%) | 8,3% | 3.800.459 | 0,7% | Indicative statistics | Starting Grants 2010 selected |
| **ERC-2011-StG** | 670 | 4.080 | 4.005 | 487 | 12,2% | 70 (1,7%) | 4 (0,8%) | 5,7% | 5.887.915 | 0,9% | Indicative statistics | Starting Grants 2011 selected |
| **Total ERC-StG Calls** | 1.910 | 18.623 | 17.951 | 1.467 | 10,4% [b] | 518 (2,9%) | 14 (1%) | 4,7% [e] | 16.889.809 | 0,9% | | |
| **ERC-2008-AdG** | 553 | 2.167 | 2.034 | 282 | 13,9% | 88 (4,3%) | 4 (1,4%) | 4,5% | 7.757.592 (9.225.992) [f] | 1,4% | Indicative statistics | Advanced Grant 2008 winners |
| **ERC-2009-AdG** | 515 | 1.583 | 1.526 | 245 | 16,1% | 27 (1,8%) | 0 (0%) | 0% | 0 | 0% | Indicative statistics | Advanced Grant 2009 winners |
| **ERC-2010-AdG** | 590 | 2.009 | 1.967 | 271 | 13,8% | 36 (1,8%) | 2 (0,7%) | 5,6% | 4.245.999 | 0,8% | Indicative statistics | Advanced Grants 2010 selected |
| **ERC-2011-AdG** | 661 | 2.284 | 2.245 | 301 | 13,4% | 51 (2,3%) | 4 (1,4%) | 7,8% | 8.141.211 | 1,2% | Indicative statistics | Advanced Grants 2011 selected |
| **Total ERC-AdG Calls** | 2.319 | 8.043 | 7.772 | 1.099 | 14,3%[b] | 202 (2,6%) | 10 (0,9%) | 4,5% | 20.144.802 | 0,9% | | |
| **Total ERC-StG & ERC-AdG Calls** | 4.229 | 26.666 | 25.723 | 2.566 | 12,4%[b] | 720 (2,8%) | 24 (0,9%) | 4,6% | 37.034.611 | 0,9% | | |

**(a)** Ineligible and withdrawn proposals are not taken into consideration and account for about 3.5% of ERC proposals submitted **(b)** 'Success rate is based on proposals evaluated and not on proposals submitted. For the ERC Starting and Advanced funding schemes and the 8 ERC calls completed & evaluated, average success rates are calculated by the ERCEA as the average of the calls success rates. **(c)** 'Greek Applications' refers to proposals submitted by a Principal Investigator (PI) with a Greek Host Institution that have been evaluated. Ineligible and withdrawn proposals have not been taken into consideration **(d)** 'Greek Grants' refers to grants implemented by the PI in Greek Host Institutions **(e)** If the ERC-2007-StG is excluded due to oversubscription, then the overall average success rate for the Starting Grants rises to 12.7% and the Greek average success rate rises to 5,8% **(f)** Due to the unfortunate death of Prof. Vardavoulias (NTUA) - the PI of the funded proposal MEDIGRA - the budget and duration of the proposal was cut down from 2.450.000 euros for five years to 981.600 for three years. The role of the PI was undertaken by a "project supervisor" named Prof. Dafalias (NTUA).

# Proposals Submitted to the ERC

The ERC has received 26.666 proposals: 18.623 Starting Grant and 8.043 Advanced Grant submissions. The Starting funding scheme has proven more successful than the Advanced Grant scheme in attracting applications: 70% and 30% respectively out of the total number of ERC proposals submitted. Chart 1 depicts the evolution in number of proposals submitted to the ERC calls.

• **Chart 1**: **Number (& %) of proposals submitted per ERC call**




The sharp decline of 73% in the number of applications between the first and the second call of the Starting Grant scheme might be partly explained by the change in application procedures (from two-stage to single-stage, full-proposal submission), the establishment of a set of benchmarks related to the profile of the applicant as well as the lower success rate of the first Starting Grant call. On the other side, the novelty of the IDEAS programme may explain the extremely large number of applications (9167) in the first ERC call that represents approximately 50% of the proposals submitted to the Starting Grant scheme and one third of the ERC Grant applications. From 2010, there is an increasing trend in the submissions to the Starting Grant scheme with an increase of applications for the ERC-2010-StG and ERC-2011-StG call compared to the previous year: 15% and 42% respectively.

The Advanced Grant scheme follows the same pattern in the number of applicants per call with a drop of submissions between the first and second ERC Advanced Grant call of 27% and an increase of applicants in the third and the fourth calls of 27% & 14% respectively. However it should be noted that in the Advanced funding scheme, more researchers applied to the fourth than to the first call, whereas in the Starting Grant scheme, the number of applications for the fourth call (ERC-2011-StG) represents less than half of the submissions made for its first call (ERC-2007-StG).

Overall, Greece has submitted 720 proposals that have been evaluated, representing 2,8% of ERC applications reviewed. 72% (518 proposals) and 28% (202 proposals) of the Greek applications were addressed to the Starting and Advanced funding schemes, respectively (see Chart 2). 406 proposals (56% of Greek applications) were submitted to the Physical Sciences and Engineering domain, 235 (33%) to the Life Sciences and 79 (11%) to the Social Sciences and Humanities domain (see Chart 3). From now on, 'Greek Proposals' refers to ERC applications submitted by Greek Host Institutions.

**Chart 2**: **Number (& %) of Greek proposals submitted & evaluated per ERC funding scheme**

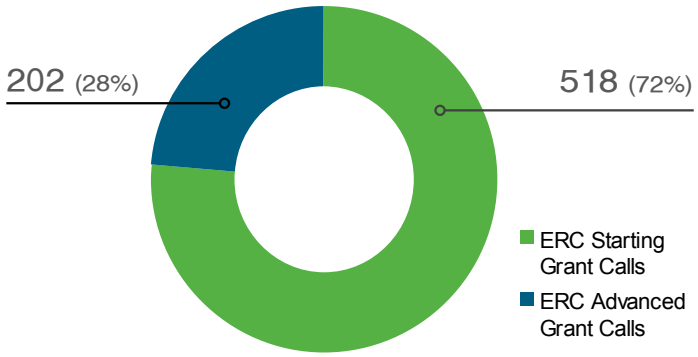
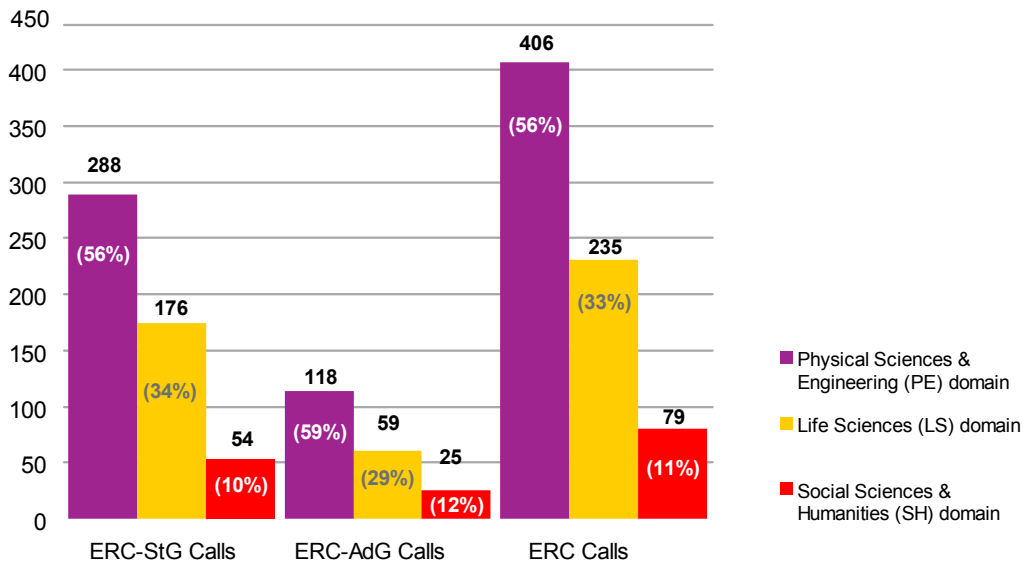



**Chart 3**: **Number (& %) of Greek proposals submitted & evaluated per domain & ERC funding scheme**



• **Chart 4**: **Number (& %) of Greek proposals submitted & evaluated per ERC call & ERC funding scheme**

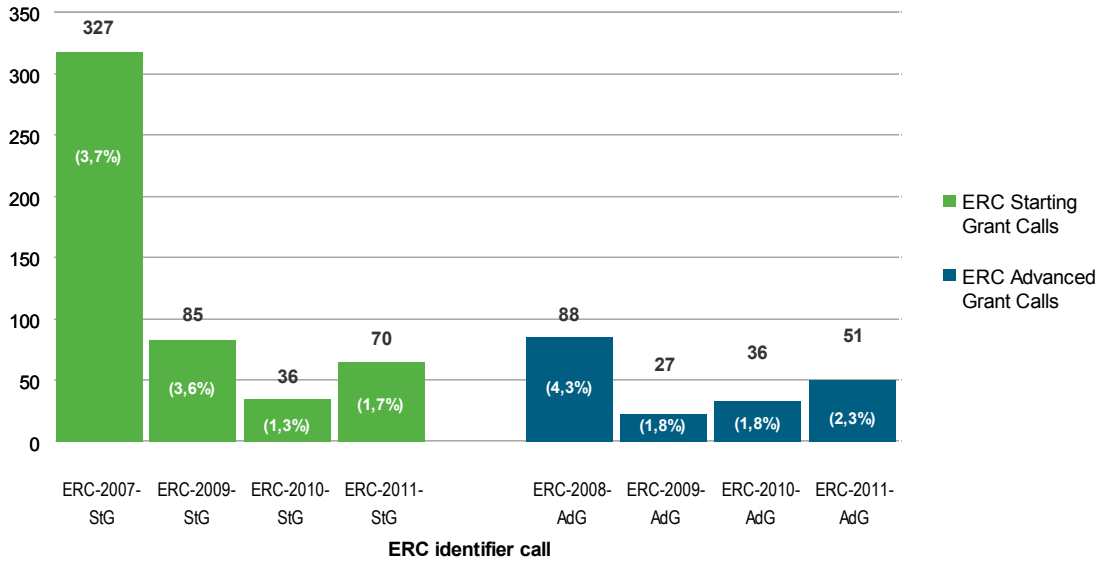



Chart 4 shows a similar pattern in the evolution of the number and % of Greek applications to that of ERC applications per call and grant scheme (see Chart 1). As in the rest of the EU & Associated Countries, there is a significant drop in Greek applications of 74% and 69% between the first and second ERC Starting & Advanced calls, respectively. There is also a recovery in Advanced Grant applications from 2010 with an increase in Greek submissions of 33% and 42% between the second and third calls and between the third and fourth calls, respectively. However, the Starting funding scheme still exhibits a significant decrease of 58% in Greek applications between the second and third calls and the recovery did not materialise until the fourth call, which saw an increase in Greek submissions of 94% compared to the previous year. The establishment of benchmark features related to the profile of the applicant (Principal Investigator) incorporated in order to encourage ambitious proposals and researchers at the right competitive level, together with the low Greek success rate, seems to have significantly discouraged Greek participation in ERC Grant calls.

# ERC Competition: Success Rates at First & Second-Stage Evaluation

The competition for ERC Grants has been intense, with the selection for funding based on a rigorous high-quality peer review procedure. The average success rates are about 14% and 10% in the Advanced and Starting funding schemes respectively.

Greek average success rates are about 5% in both the Advanced and Starting Grants (see Table 2). However, if the first Starting Grant call is not taken into consideration due to oversubscription, the overall and Greek average success rate of the Starting Grants rise to 13 % and 6%, respectively. Table 3 provides information on the ERC proposals submitted by Greek Host Institutions per domain as well as their outcome in the first and second stage evaluation procedure.

**Table 3: Results on Greek participation (submission, evaluation & funding) per ERC call & domain [(a)]**

| | Number & (%) of Greek proposals submitted per domain | | | | Greek proposals going to 2nd stage of evaluation per domain (success rate [b]) | | | | Greek Proposals funded per domain (success rate) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LS | PE | SH | Total (& % per funding scheme) | LS | PE | SH | Total | LS | PE | SH | Total |
| ERC-2007-StG | 110 | 187 | 30 | 327 (63%) | 3 (2,7) | 6 (3,2) | 1 (3,3) | 10 (3,1) | 1 (0,9) | 3 (1,6) | 0 (0) | 4 (1,2) |
| ERC-2009-StG | 33 | 43 | 9 | 85 (16%) | 2 (6,1) | 6 (14) | 1 (11,1) | 9 (10,6) | 1 (3) | 2 (4,7) | 0 (0) | 3 (3,5) |
| ERC-2010-StG | 12 | 21 | 3 | 36 (7%) | 2 (16,7) | 3 (14,3) | 0 (0) | 5 (13,9) | 2 (16,7) | 1 (4,8) | 0 (0) | 3 (8,3) |
| ERC-2011-StG | 21 | 37 | 12 | 70 (14%) | 3 (14,3) | 5 (13,5) | 0 (0) | 8 (11,4) | 2 (9,5) | 2 (5,4) | 0 (0) | 4 (5,7) |
| Total ERC-StG Calls | 176 (34%) | 288 (56%) | 54 (10%) | 518 (72%) | 10 (10) (12,4)* | 20 (11,3) (13,9)* | 2 (3,6) (3,7)* | 32 (9,8) (12)* | 6 (7,5) (9,7)* | 8 (4,1) (5)* | 0 (0) | 14 (4,7) (5,8)* |
| ERC-2008-AdG | 29 | 51 | 8 | 88 (44%) | 4 (13,8) | 10 (19,6) | 0 (0) | 14 (15,9) | 2 (6,9) | 2 (3,9) | 0 (0) | 4 (4,5) |
| ERC-2009-AdG | 7 | 15 | 5 | 27 (13%) | 2 (28,6) | 2 (13,3) | 0 (0) | 4 (14,8) | 0 (0) | 0 (0) | 0 (0) | 0 (0) |
| ERC-2010-AdG | 11 | 24 | 1 | 36 (18%) | 2 (18,2) | 5 (20,8) | 0 (0) | 7 (19,4) | 0 (0) | 2 (8,3) | 0 (0) | 2 (5,6) |
| ERC-2011-AdG | 12 | 28 | 11 | 51 (25%) | 2 (16,7) | 6 (21,4) | 0 (0) | 8 (15,7) | 1 (8,3) | 3 (10,7) | 0 (0) | 4 (7,8) |
| Total ERC-AdG Calls | 59 (29%) | 118 (59%) | 25 (12%) | 202 (28%) | 10 (19,3) | 23 (18,8) | 0 (0) | 33 (16,5) | 3 (3,8) | 7 (5,7) | 0 (0) | 10 (4,5) |
| Total ERC-StG & ERC-AdG Calls [c] | 235 (33%) | 406 (56%) | 79 (11%) | 720 | 20 (14,6) | 43 (15) | 2 (1,8) | 65 (13,3) | 9 (5,7) | 15 (4,9) | 0 (0) | 24 (4,6) |

**(a)** Data kindly provided by the ERCEA (European Research Council Executive Agency).

**(b)** Success rates are based on proposals evaluated. Ineligible and withdrawn proposals have not been taken into consideration. Success rates depicted for the Total ERC Starting & Advanced calls & for the Total of ERC calls are not based on the number of proposals submitted & funded but on the average of the corresponding success rates.

* Success rate calculated excluding the ERC-2007-StG call due to oversubscription.

**(c)** In the ERC-2011-PoC call, 1 Greek proposal was submitted (in the first deadline) & granted.139 eligible proposals were submitted in total (73 in the first deadline & 66 in the second deadline). 15 proposals were considered ineligible, 9 of them due to non submission of the HI's support letter. 52 proposals were funded (30 & 22 in the first & second deadline, respectively). Of the 15 Mio € budget for this call, 7.600.000 € of funding was granted. The overall success rate was 37% whereas the Greek success rate was 100%. ERC Starting grantees accounted for 62% of successful applicants.

Chart 5 compares the overall and Greek success rates per ERC call and shows their evolution. In the Starting Grant calls, the overall and Greek success rates displayed a significant increase from the first to the third call where both success rates reached their maximum of 16% and 8%, respectively. In the Advanced Grant calls, the overall and Greek success rates do not follow the same pattern: while the overall success rate reached its maximum in the 2nd call (16%), the Greek success rate attained its peak in the fourth call (8%). The Greek average success rate is about three times lower than the total average success rate and one of the lowest among ERA countries. However, in the last two calls of both funding schemes, this ratio has significantly decreased, from three, to about two times lower.

**Chart 5: Overall & Greek success rates per ERC call (ERC Grants in Greek HIs per call)**

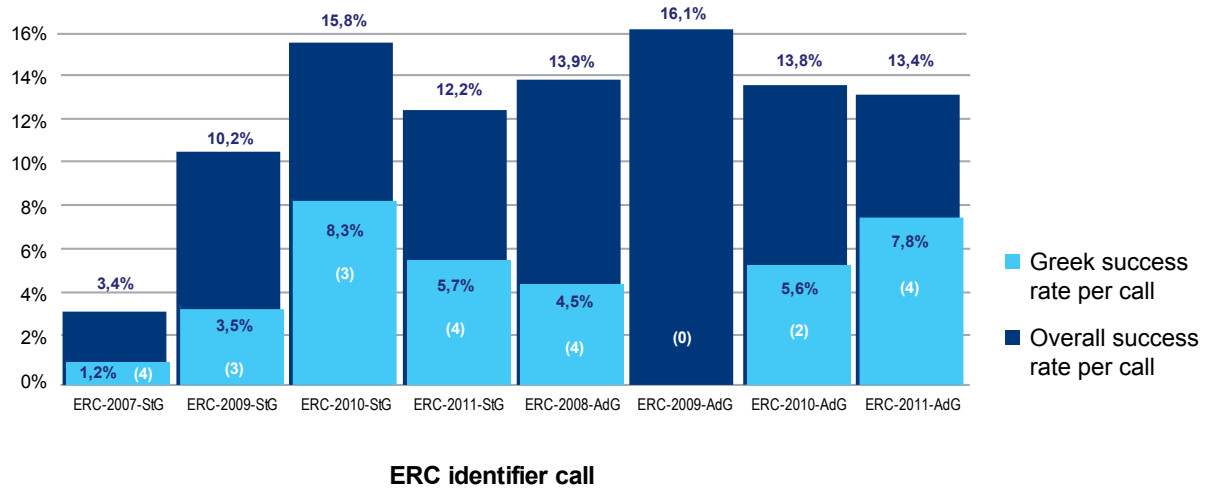



**Chart 6: Number (& 1st-stage average success rate) of proposals reaching 2nd-stage evaluation per grant scheme**

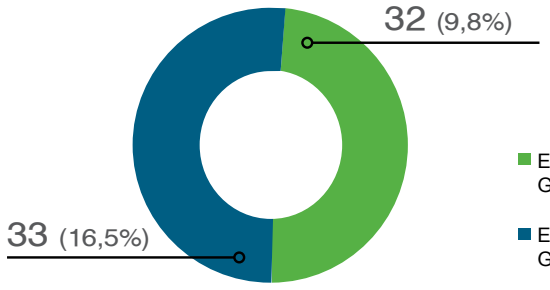



**Chart 7: Number (& average success rate) of Greek proposals funded per grant scheme**

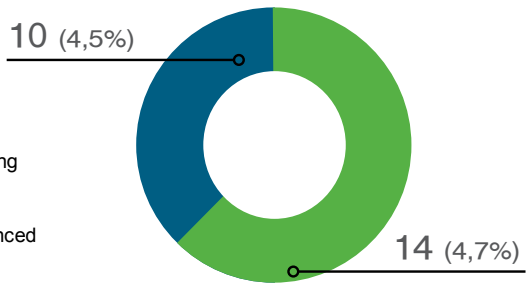


**Chart 8**: Number (& 1st-stage average success rate) of Greek proposals reaching 2nd-stage evaluation per domain

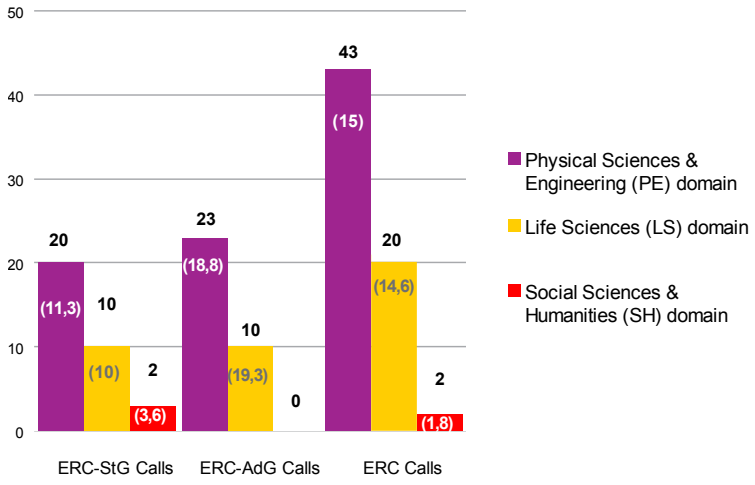



**Chart 9**: Number (& average success rate) of Greek proposals funded per domain

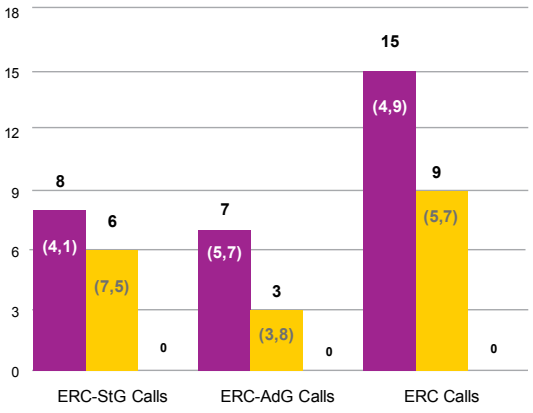



Chart 6 and chart 8 show the number of Greek proposals evaluated that have reached the second-stage of evaluation, where the full proposal is taken into consideration. Of the 720 proposals submitted by Greek organisations, 65 were successful in stage one of the evaluation procedure, with a success rate of about 10% (average success rate of 13%). 32 of the 518 projects submitted to the Starting Grant scheme went to stage two of the ERC peer review, leading to a first-stage success rate of about 6% (average success rate of 10%). 33 of the 202 applications for the Advanced funding scheme reached full proposal evaluation, leading to a significantly higher first-stage success rate of about 16% (average success rate of 17%).

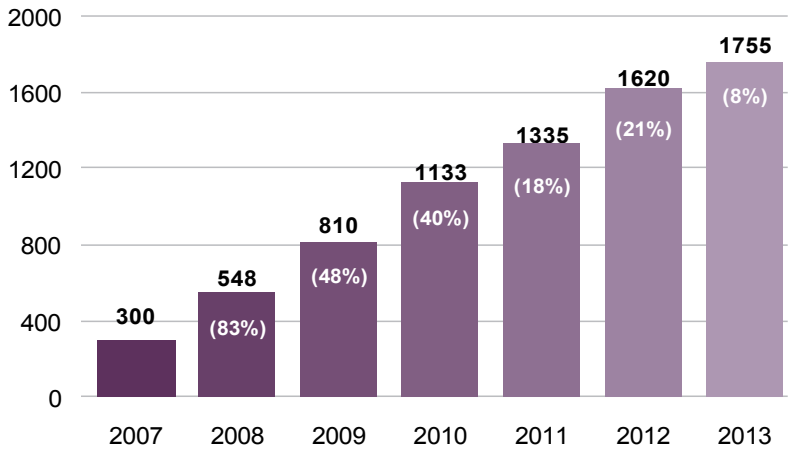
Taking into consideration the proposals' domain, 43 out of 406 projects in Physical Sciences and Engineering (PE) reached the second-stage evaluation with a first-stage success rate of 11% (first-stage average success rate of 15%). 20 out 235 proposals submitted to the Life Sciences (LS) domain reached full-proposal evaluation, culminating in a success rate of about 9% (first-stage average success rate of 5%). Only 2 proposals of the 79 projects submitted in the Social Sciences and Humanities' domain (SH) reached the second stage of the ERC peer-review evaluation with a very low first-stage success rate of about 3% (first-stage average success rate of 2%). These results are even more striking if the ERC funding scheme is considered. In this sense, both proposals that reached the second-stage of evaluation were submitted to the Starting funding scheme, leading to the distressing fact that none of the Greek ERC Advanced applications to the SH domain has so far reached full-proposal evaluation.

Chart 7 and chart 9 depict the number of Greek proposals that have been selected for funding and the success rate per funding scheme and domain. In this sense, Greek proposals submitted in the Life Sciences and the Physical Sciences & Engineering domain display a similar average success rate of about 6% and 5% respectively. If the funding scheme is also taken into consideration, the average success rate of the Greek applications submitted for the Advanced Grant competition is higher in the PE than in the LS domain (6% and 4% respectively) whereas in the Starting Grant competition the success rate is lower in the PE than in the LS domain (4% versus 8%).

# Distribution of ERC Funds

The ERC budget accounts for 15% of the total budget of the 7th Framework Programme (7,51 billion € out of 50,5 billion €). Chart 10 depicts the ERC annual budget from 2007 to 2013 and the percentage increase with respect to the previous year's budget. Since 2010, the ERC has received a total annual budget of over 1 billion €, growing from approximately 300 Mio € in 2007 to 1,7 billion € in 2013. The annual Work Programmes of 2007 and 2008 include only one Starting and one Advanced Grant call respectively (first Starting Grant call in 2007 and first Advanced Grant call in 2008) whereas since 2009, each annual Work Programme has included one Starting and one Advanced Grant call.

- **Chart 10**: **ERC annual budget in Mio € (& % of annual budget increase compared to budget of previous year)**




- **Chart 11**: **Budget in Mio € for the ERC Starting & Advanced Grant calls launched**

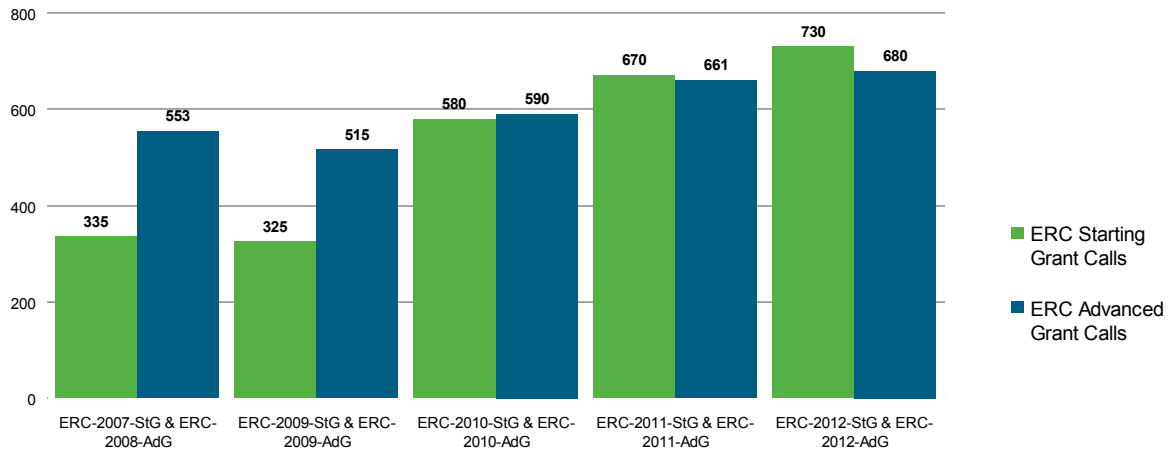
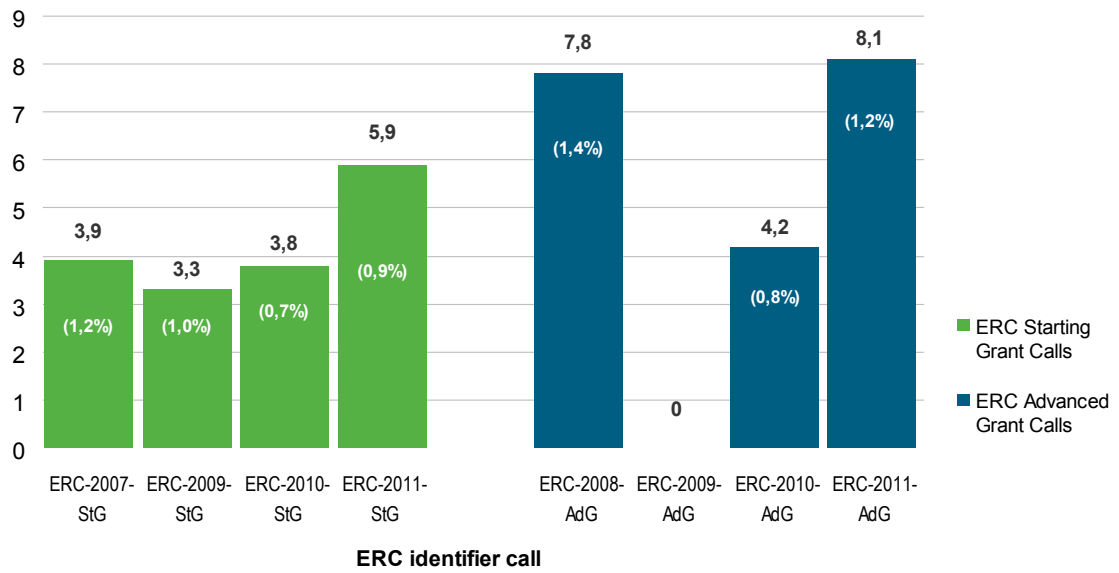


Chart 11 shows the budget per ERC Grant call as well as the budget trend in both ERC Grant schemes. In this sense, there has been a 3% and 7% decrease (compared to the first calls) in the budget of the second Starting and Advanced Grant calls, respectively. However, from 2010, there is a rise in the budget calls of both funding schemes, which is 4 times higher in the Starting than in the Advanced Grant scheme. Indeed, there is a 125% and 32% increase between the second and fourth call budgets of the Starting and Advanced funding scheme, respectively. In the first two calls, the Starting Grant scheme had approximately two thirds of the budget of the Advanced funding scheme. However in the 2010 ERC Work Programme both funding schemes had a similar budget and from 2011 the Starting Grant calls displayed a slightly bigger budget than the Advanced Grant calls (1,5% & 7% increase in the third and fourth calls of both funding schemes, respectively). The significant budgetary strengthening of the Starting Grant scheme is in compliance with the new strategy of the ERC Scientific Council to target and support the next generation of research leaders in Europe.

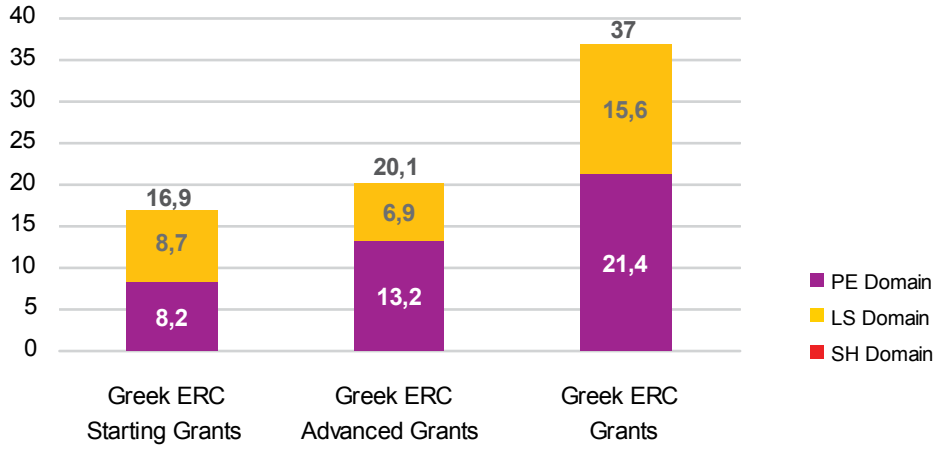
The ERC funds top researchers engaged in pioneering research at the frontier of knowledge in their field. To date, some 4,2 billion € have been granted to ground-breaking excellent projects in frontier research. 1,9 billion € in Physical Sciences and Engineering, 1,6 billion € in Life Sciences and about 700 Mio € in Social Sciences and Humanities.

The ERC has invested a total of 37 Mio € (0,9% of ERC budget) in frontier research in Greece in excellent projects designed around fundamental research or around well-defined technological challenges. Chart 12 shows the distribution of ERC funds dedicated to Greece per call. In both funding schemes there has been a decrease from the 1st to the 2nd call but from 2009 there is a positive trend with a maximum peak reached in the last completed Starting and Advanced calls (ERC-2011-StG & ERC-2011-AdG). 16,9 Mio € (46% of Greek budget) have been granted to emerging top researchers and 20,1 Mio € (54%) to well-established leaders in their field (see Chart 13). In terms of subject domains, 21,4 Mio € went to the Physical Sciences and Engineering and 15,6 Mio € to the Life Sciences. Unfortunately, Greece - the country with such a strong heritage in social sciences and humanities - has not received any funding for projects in the SH domain (see Chart 13).

**Chart 12**: **Amount in Mio € for Greece per ERC call and (& % of ERC budget for Greece)**



• **Chart 13**: **Amount in Mio € for Greece per ERC funding scheme & domain**




## ERC Proposals Funded

To date, the ERC has funded 2.566 top researchers working in about 470 different institutions across Europe: 1.467 (57%) are Starting grantees whereas 1.099 (43%) are Advanced grantees. More than 1.100 projects (45% of the total) have been funded in the Physical Sciences and Engineering, about 900 (36%) in the Life Sciences and more than 450 (19%) in the Social Sciences and Humanities.

The ERC Grant holders list displays 53 nationalities, as specified at the time of the Grant Agreement. Among these nationalities, 20 are outside the European Research Area (ERA). US nationals with 75 grantees represent 47% of all non-ERA grantees (i.e. non-EU and non-Associated Countries). However most of the non-ERA grantees (89%) were already resident in an ERA country at the time of their application.

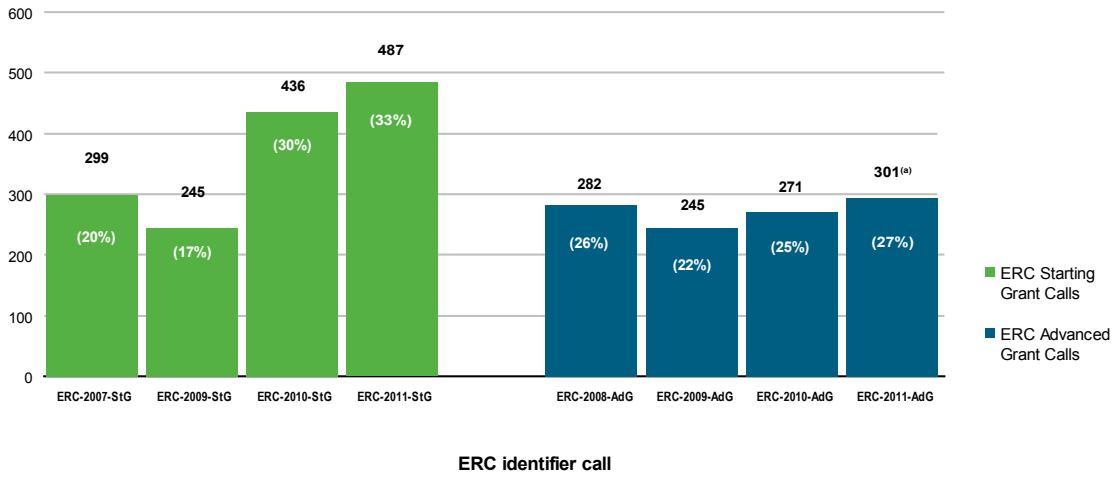
The majority of the Starting Grant holders of the first four calls are hosted by institutions located in the EU, while 12% have a host institution in an FP7 Associated Country. For the first four Advanced Grant calls, the share of host institutions from Associated Countries is significantly higher (16%).

Typically, projects are funded for five years. Projects of this duration account for 90% of all funded projects, while 6% of projects are funded for 4 years and 2% for 3 years.

An average grant size in the Life Sciences and Physical Sciences & Engineering domain is about 1.4 Mio € and 2.2 Mio € in the Starting and Advanced funding schemes respectively. The corresponding figures for Social Sciences and Humanities are 1 Mio € and 1.9 Mio € (14).

Chart 14 depicts the evolution in the number of proposals funded by the ERC that is in line with the evolution of the budget dedicated to the ERC calls and funding schemes (see Chart 11). In this sense, there is a 125% and 32% budget rise between the second and fourth call of the Starting and Advanced funding scheme respectively which correspond to a 98% and 20% increase in the number of proposals funded.

**Chart 14**: **Number (& %) of proposals funded per ERC call & funding scheme**




**(a)** 301 refers to the number of selected proposals (not yet funded).

The ERC has awarded 24 grants in Greece: 14 to ERC Starting grantees and 10 to ERC Advanced grantees (see Chart 7). 15 and 9 proposals have been funded in the Physical Sciences and Life Sciences domains respectively (see Chart 9). Unfortunately, despite the great heritage of Greece in Social sciences and Humanities, no proposal has been funded so far in the SH domain. A list of successful ERC Greek projects is presented in Table 4.

Only one Greek project is funded for 4 years whereas 22 last for five years. It should be noted that although the MEDIGRA project was initially funded for five years, due to the unfortunate death of the Principal Investigator (PI), Professor Vardoulakis, a project supervisor was nominated and the budget as well as the duration of the grant were significantly reduced (see Table 4).

In the Life Sciences, an average Greek grant size is about 1,4 Mio € for a Starting Grant and 2,3 Mio € for an Advanced Grant. In the Physical Sciences and Engineering, the average for a Starting Grant is 1,0 Mio €, and 2,2 Mio € for an Advanced Grant (grants for five years have only been considered)

There is a significant influence of the country's size (in terms of population and number of researchers) and R&D expenditure on the distribution of grants among countries. In this sense, Greece is ranked sixteenth among EU & Associated Countries when considering the number of funded proposals hosted by Greek Host Institutions. However, Greece occupies 12th position in terms of nationality of the Principal Investigators (15).

**Table 4**: List of 24 Greek funded proposals in the first 8 ERC calls (a)

| CALL IDENTIFIER | PI NAME[b] | HOST INTITUTION FOR ERC GRANT[c] | PI POSITION AT GREEK FACULTY, SCHOOL, INSTITUTE * |
|---|---|---|---|
| ERC-2007-StG | Katerina Aifantis | Aristotle University of Thessaloniki | 1. Faculty of Engineering - Department Mathematical, Physical & Computational Sciences - Laboratory of Mechanics & Materials - Aristotle University of Thessaloniki<br>2. Affiliated Scientist - Medical School - 1st Clinic of Neurology - Aristotle University of Thessaloniki<br>3. Affiliated Scientist - Institute of Electronic Structure & Laser- FORTH |
| ERC-2007-StG | Popi Syntichaki | Biomedical Research Foundation - Academy of Athens (BRFAA) | Assistant Professor Level - Genetics & Gene Therapy Laboratory - Center of Basic Research II -BRFAA |
| ERC-2007-StG | Dimitris Achlioptas | Computer Technology Institute & Press Diophantus (CTI) | 1. Professor - School of Sciences - Faculty of Informatics and Telecommunications - National & Kapodistrian University of Athens<br>2. Research Unit 1 «Foundations of Computer Science, Relevant Technologies & Applications" - CTI (Athens) |
| ERC-2007-StG &<br>ERC-2011-PoC | Theodore Peter Rakitzis | Foundation for Research & Technology Hellas (FORTH) | 1. Associate Professor - Faculty of Science & Engineering - Department of Physics-University of Crete<br>2. Institute of Electronic Structure & Laser - FORTH |
| ERC-2008-AdG | Nektarios Tavernarakis | Foundation for Research & Technology Hellas (FORTH) | 1. Professor of Molecular Systems Biology - Medical School of the University of Crete<br>2. Professor/Research Director - Institute of Molecular Biology and Biotechnology- FORTH. |
| ERC-2008-AdG | George Kordas | National Center for Scientific Research "Demokritos" | Researcher A - Research Director The Institute of Materials Science - NCSR Demokritos |
| ERC-2008-AdG | Ioannis Vardoulakis (PI)<br>Ioannis Dafalias (Project supervisor) | National Technical University of Athens (NTUA) | Professor & Director of the Laboratory for Geomaterials - School of Applied Mathematical & Physical Sciences- Department of Mechanics - NTUA |
| ERC-2008-AdG | George Gazetas | National Technical University of Athens (NTUA) | Professor of Soil Mechanics & Director Soil Mechanics Laboratory - School of Civil Engineering - Department of Geotechnical Engineering - NTUA |
| ERC-2009-StG | Vily Panoutsakopoulou | Biomedical Research Foundation- Academy of Athens (BRFAA) | Investigator-Associate Professor Level - Cellular Immunology Laboratory Center Basic Research I - Cell Biology Division - BRFAA |
| ERC-2009-StG | Chrysoula Tsogka | Foundation for Research & Technology Hellas (FORTH) | 1. Associate Professor - School of Sciences & Technology - Department of Applied Mathematics - University of Crete &<br>2. Institute of Applied Computational Mathematics FORTH |
| ERC-2009-StG | Athanasios Papathanasiou | National Technical University of Athens (NTUA) | Elected Assistant Professor - School of Chemical Engineering- Department II of Department of Process Analysis & Plant Design - NTUA |
| ERC-2010-StG | Aggelos Kiayias | National & Kapodistrian University of Athens | Assistant Professor - School of Sciences - Faculty of Informatics and Telecommunications - National & Kapodistrian University of Athens |

| ACRONYM | MAIN EVALUATION PANEL [d] | BUDGET (euros) | DURATION | COMMENTS |
|---|---|---|---|---|
| MINATRAN: Probing the micro-nano transition: theoretical and experimental foundations, simulations and applications | PE6 - Computer Science & Informatics | 1.128.400 | 01/10/2008 - 30/09/2013 | |
| PAGE: The role of mRNA-processing bodies in ageing | LS3 - Cellular & Developmental Biology | 1.080.000 | 01/09/2008 - 31/08/2013 | Grant Portability: submission with FORTH |
| RIMACO: Rigorous Mathematical Connections between the Theory of Computations and Statistical Physics | PE1 - Mathematical Foundations | 749.996 | 01/07/2008 - 30/06/2013 | |
| TRICEPS: Time-resolved ring-cavity-enhanced polarization spectroscopy: | PE2 - Fundamental Constituents of Matter | 909.999 | 01/01/2009-31/12/2013 | Prof Rakitzis has also top-up grant “Proof of Concept “ (ERC-2011-PoC call) |
| NEURONAGE: Molecular basis of neuronal ageing | Interdisciplinary LS3 (Cellular & Developmental Biology) & LS5 (Neurosciences & Neural Disorders) | 2.376.000 | 01/05/2009 - 30/04/2014 | |
| NANOTHERAPY: Novel nano-container drug carrier for targeted treatment of prostate cancer | LS7 - Diagnostic Tools, Therapies & Public Health | 2.000.000 | 01/02/2009 - 31/01/2014 | When considering the area of application, the project comes under LS7 but when considering methodologies applied, it comes under PE5. |
| MEDIGRA: Mechanics of energy dissipation in dense granular materials | PE 8 - Products & Process Engineering | 981.600 | 01/11/2008 - 31/10/2011 | Proposal had initial funding of 2.450.000 euros for 5 years. Due to death of PI, the budget was reduced to 981.600 for 3 years. |
| DARE: Soil foundation structure systems beyond conventional seismic failure thresholds: application to new or existing structures and monuments | PE 8 - Products & Process Engineering | 2.399.992 | 01/12/2008 - 31/10/2013 | |
| OPN-IMMUNOREGULATION: Immune mechanisms of osteopontin-mediated protection in allergic airway disease | LS6 - Immunity & Infection | 1.511.200 | 01/12/2009 - 30/11/2014 | |
| ADAPTIVES: Algorithmic Development and Analysis of Pioneer Techniques for Imaging with waVES | PE1 - Mathematical Foundations | 690.000 | 01/06/2010 - 31/05/2015 | |
| HYDROFAKIR: Roughness design towards reversible non- / full-wetting surfaces: From Fakir Droplets to Liquid Films | PE 8 - Products & Process Engineering | 1.131.840 | 01/02/2010 - 31/05/2015 | |
| CODAMODA: Controlling Data Movement in the Digital Age | PE6 - Computer Science & Informatics | 1.212.959 | 01/04/2011 - 31/03/2016 | |

| CALL IDENTIFIER | PI NAME[b] | HOST INTITUTION FOR ERC GRANT[c] | PI POSITION AT GREEK FACULTY, SCHOOL, INSTITUTE * |
|---|---|---|---|
| ERC-2010-StG | Georgia Salanti | University of Ioannina | Assistant Professor - Medical School - Department of Hygiene & Epidemiology - University of Ioannina |
| ERC-2010-StG | Georgios Stathopoulos | University of Patras | Assistant Professor - Medical School- Division of Basic Medical Sciences I - Department of General Biology: Molecular Cell Biology Unit - University of Patras |
| ERC-2010-AdG | Athanasios Konstandopoulos | Centre for Research & Technology Hellas (CERTH) | 1. Director - Chemical Process Engineering Research Institute & 2. Associate Professor - Polytechnic School Department of Chemical Engineering - Aristotle University of Thessaloniki |
| ERC-2010-AdG | Spyridon Pandis | Foundation for Research & Technology Hellas (FORTH) | 1. Professor - Polytechnic School Department of Chemical Engineering - University of Patras & 2. Collaborating Faculty member - Institute of Chemical Engineering & High Temperature Chemical Processes (ICE-HT) - FORTH |
| ERC-2011-StG | Nikos Chronis | Foundation for Research & Technology Hellas (FORTH) | Institute of Molecular Biology & Biotechnology - FORTH |
| ERC-2011-StG | Dimitra-Isidora Roussopoulou | National & Kapodistrian University of Athens | Assistant Professor - School of Sciences - Faculty of Informatics and Telecommunications - National & Kapodistrian University of Athens |
| ERC-2011-StG | Georgios Vassilikogiannakis | University of Crete | Associate Professor - Faculty of Science & Engineering - Department of Chemistry - Division of Organic Chemistry - University of Crete |
| ERC-2011-StG | Zoi Lygerou | University of Patras | Associate Professor - Medical School - Division of Basic Medical Sciences I - Department of General Biology: Molecular Cell Biology Unit - University of Patras |
| ERC-2011-AdG | Iannis Talianidis | Biomedical Sciences Research Center Alexander Fleming | Head of Laboratory - The Institute of Molecular Biology & Genetics - BSRC Fleming |
| ERC-2011-AdG | Athanasios Dimoulas | National Center for Scientific Research "Demokritos" | Researcher A - Research Director The Institute of Materials Science - NCSR Demokritos |
| ERC-2011-AdG | Ioannis Dafalias | National Technical University of Athens (NTUA) | Professor - School of Applied Mathematical & Physical Sciences - Department of Mechanics - NTUA |
| ERC-2011-AdG | Manolis Papadrakakis | National Technical University of Athens (NTUA) | Professor - Laboratory of Structural Analysis & Seismic Research - School of Civil Engineering - Department of Structural Engineering - NTUA |

| ACRONYM | MAIN EVALUATION PANEL [d] | BUDGET (euros) | DURATION | COMMENTS |
|---|---|---|---|---|
| IMMA: Integrating the Multiple Meta-Analysis: a framework for evaluating and ranking multiple health care technologies. | LS7 - Diagnostic Tools, Therapies & Public Health | 592.500 | 01/10/2010 - 30/09/2015 | |
| KRASHIMPE: KRas mutation interactions with host immunity in malignant pleural effusion. | LS4 - Physiology, Pathophysiology & Endocrinology | 1.995.000 | 01/042011 - 31/03/2016 | |
| ARMOS: Advanced multifunctional Reactors for green Mobility and Solar fuels | PE8 - Products & Process Engineering | 1.749.999 | 01/02/2011 - 31/01/2016 | |
| ATMOPACS: Atmospheric Organic Particulate Matter, Air Quality and Climate Change Studies | PE10 - Earth System Science | 2.496.000 | 01/01/2011 - 31/12/2015 | |
| HIVBIOCHIP: A Point-of-Care biochip for HIV monitoring in the developing world | LS9 - Applied Life Sciences, Biotechnology Bioengineering | 1.986.000 | 01/06/2012 - 31/05/2017 | In June 2012, Grant Portability to NCSR Demokritos. This information will be considered in the 2nd edition of the report |
| PPP: Protecting and Preserving Human Knowledge for Posterity | PE6 - Computer Science & Informatics | 1.032.915 | 01/10/2011 - 30/09/2016 | |
| SINOXYGEN: Advancing the Green Chemistry of Singlet Oxygen and Applying it to Synthetic Challenges | PE5 - Materials & Synthesis | 1.338.000 | 01/10/2011 - 30/09/2016 | |
| DYNACOM: From Genome Integrity to Genome Plasticity: Dynamic Complexes Controlling Once per Cell Cycle Replication | LS3 - Cellular & Developmental Biology | 1.531.000 | 01/02/2012 - 31/01/2017 | |
| SET-NET: Enzymatic and genomic targets of histone modifying enzymes and their role in liver metabolism and hepatocarcinogenesis | LS4 - Physiology, Pathophysiology & Endocrinology | 2.499.600 | 01/01/2012 - 31/12/2016 | |
| SMARTGATE: «Smart Gates for the 'Green' Transistor» | PE7- Systems & Communication Engineering | 1.221.611 | 01/01/2012- 31/12/2015 | Duration of ERC Grant: 4 years |
| SOMEF: Critical State Soil Mechanics Revisited: Fabric Effects | PE8 - Products & Process Engineering | 1.924.000 | 01/03/2012 - 28/02/2017 | |
| MASTER: Mastering the Computational Challenges in Numerical Modeling and Optimum Design of CNT Reinforced Composites | PE8 - Products & Process Engineering | 2.496.000 | 01/03/2012 - 28/02/2017 | |

**(a)** Data available at the ERC website - funded project & the CORDIS website (16)
**(b)** Link to professional-dedicated website. Only positions at Greek HIs are listed
**(c)** Refers to Host Institution (HI) chosen by Principal Investigator (PI) for implementation of the ERC Grant
**(d)** ERC panel descriptors of 2012 Work Programme

# 3. Mapping of Excellence in the Greek Research & Innovation Landscape

Until recently, European added value was mainly defined as the European dimension of the problem, priority or policy tackled by research teams in different countries. However, with the establishment of the ERC, a new meaning of the European Added-Value (17) has emerged that is based on the competition for research funding at European level, assessed on the basis of excellence. In this sense, the ERC is a pan-European funding agency for investigator-driven frontier research able to select outstanding researchers and ideas from a wider pool than national schemes would allow. By channeling resources to the best researchers and ideas at the frontier of knowledge and by supporting the development of new centres of excellence in emerging sectors across Europe, the ERC should play a key role in creating a global competitive European Research Area that will increase the quality of the overall European research system and so lead to the knowledge and innovation society envisioned by the Europe 2020 strategy.

The ERC has also significantly contributed to the establishment of new benchmarks of excellence and competitiveness among European research and innovation (R&I) stakeholders that should lead to crucial structural changes in the European Research Area (4). Indeed, new International rankings established on the basis of ERC success have been used to assess the strengths and weaknesses of national research systems and individual institutions and to reform and adapt their strategies, policies and practices in order to increase their effectiveness and attractiveness. In this sense, European universities and research institutions have begun to use their success in ERC calls as a stamp of prestige and excellence and to actively compete for top researchers by offering the most attractive "working" conditions.

The following "Mapping of Excellence" in the Greek R&I landscape is based on the performance of researchers and the attractiveness of Host Institutions in Greece, based on the results of the ERC calls completed so far. From now on, "Greek ERC Grants" refer to ERC Grants that are implemented in Greek Host Institutions.

It should be noted that a more comprehensive picture of Greek R&I excellence could be provided by analyzing the successful applications of Greek organisations submitted to the FP7-REGPOT (Research Potential) calls. In this programme, competition for funding is also on the basis of excellence but among institutions located in EU convergence and outermost regions and equivalent regions in Associated Countries. This programme does not fund research activities per se but aims to improve the research capacities of highest quality and/or promising centres, within the FP7 thematic priorities, by reinforcing their Scientific & Technological potential.

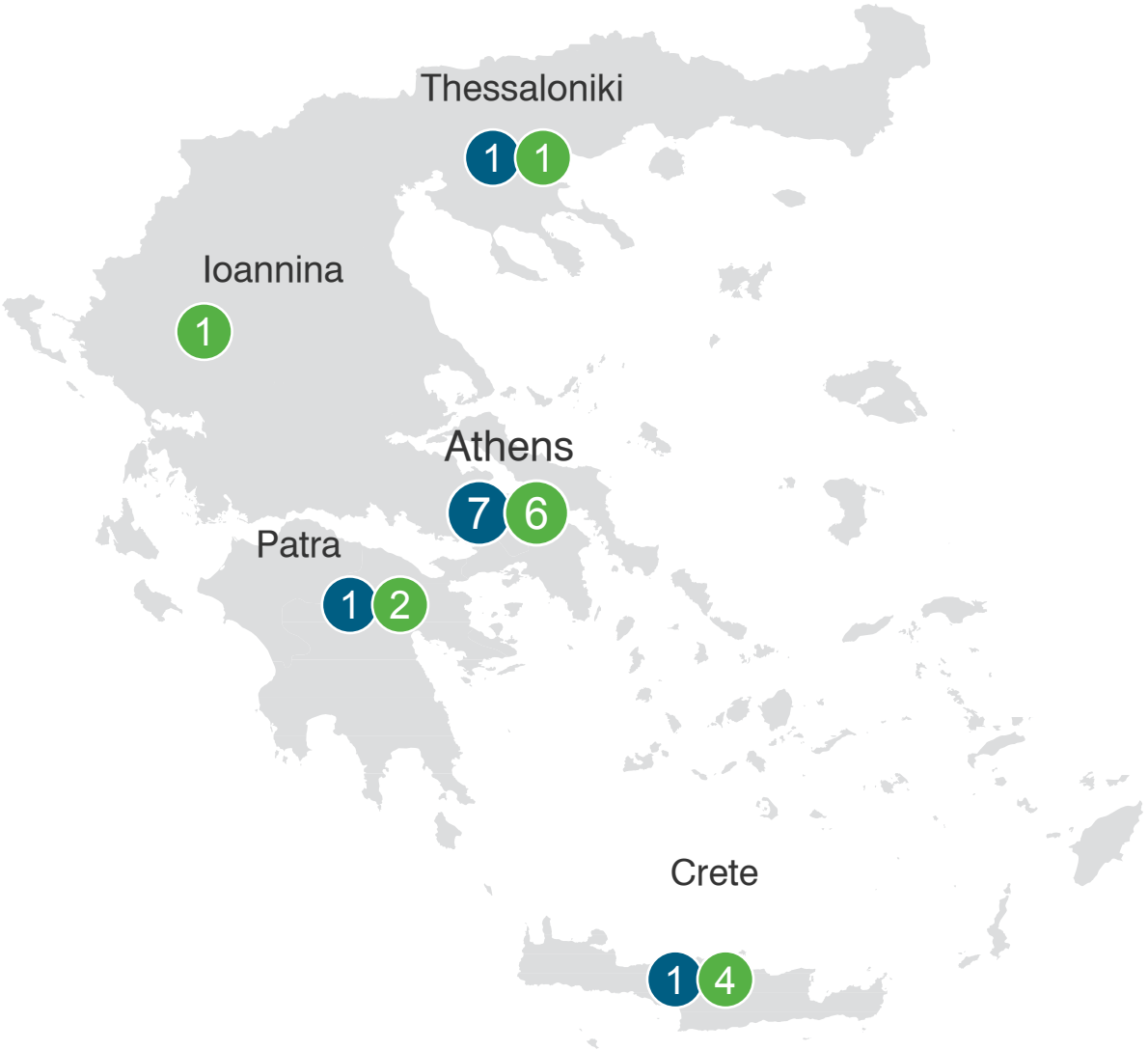



**Diagram 1**: Geographical distribution of ERC Grants in Greece


Athens
7
6

# Mapping of Excellence Based on the Geographical Distribution of ERC Grants in Greece.

The distribution of Greek ERC Grants is totally in line with the distribution of EU R&D funded projects in Greece.

## Athens

| | | | | | |
|---|---|---|---|---|---|
| ● | ERC-2007-StG | LS3 - Cellular & Developmental Biology | PAGE | Popi Syntichaki | Biomedical Research Foundation- Academy of Athens |
| | ERC-2007-StG | PE1 - Mathematical Foundations | RIMACO | Dimitris Achlioptas | Computer Technology Institute & Press Diophantus (Athens branch) |
| | ERC-2009-StG | LS6 - Immunity & Infection | OPN-IMMUNOREGULATION | Vily Panoutsakopoulou | Biomedical Research Foundation- Academy of Athens |
| | ERC-2009-StG | PE 8 - Products & Process Engineering | HYDROFAKIR | Athanasios Papathanasiou | National Technical University of Athens |
| | ERC-2010-StG | PE6 - Computer Science & Informatics | CODAMODA | Aggelos Kiayias | National & Kapodistrian University of Athens |
| | ERC-2011-StG | PE6 - Computer Science & Informatics | PPP | Dimitra-Isidora Roussopoulou | National & Kapodistrian University of Athens |
| ● | ERC-2008-AdG | LS7 - Diagnostic tools, Therapies & Public Health | NANOTHERAPY | George Kordas | National Center for Scientific Research "Demokritos" |
| | ERC-2008-AdG | PE 8 - Products & Process Engineering | MEDIGRA | Ioannis Vardoulakis (PI)<br>Ioannis Dafalias (project supervisor) | National Technical University of Athens |
| | ERC-2008 AdG | PE 8 - Products & Process Engineering | DARE | George Gazetas | National Technical University of Athens |
| | ERC-2011-AdG | LS4 - Physiology, Pathophysiology & Endocrinology | SET-NET | Iannis Talianidis | Biomedical Sciences Research Center Alexander Fleming |
| | ERC-2011-AdG | PE7- Systems & Communication Engineering | SMARTGATE | Athanasios Dimoulas | National Center for Scientific Research "Demokritos" |
| | ERC-2011-AdG | PE8 - Products & Process Engineering | SOMEF | Iannis Dafalias | National Technical University of Athens |
| | ERC-2011-AdG | PE8 - Products & Process Engineering | MASTER | Manolis Papadrakakis | National Technical University of Athens |


Thessaloniki
1 1
Ioannina
1
Patra
1 2
Crete
1 4

## Thessaloniki

| | | | | | |
|---|---|---|---|---|---|
| ERC-2007-StG | PE6 - Computer Science & Informatics | MINATRAN | Katerina Aifantis | Aristotle University of Thessaloniki |
| ERC-2010-AdG | PE8 - Products & Process Engineering | ARMOS | Athanasios Konstandopoulos | Centre for Research & Technology Hellas |

## Ioannina

| | | | | |
|---|---|---|---|---|
| ERC-2010-StG | LS9 - Applied Life Sciences, Biotechnology & Bioengineering | IMMA | Georgia Salanti | University of Ioannina |

## Patra

| | | | | |
|---|---|---|---|---|
| ERC-2010-StG | LS4 - Physiology, Pathophysiology & Endocrinology | KRASHIMPE | Georgios Stathopoulos | University of Patras |
| ERC-2011-StG | LS3 - Cellular & Developmental Biology | DYNACOM | Zoi Lygerou | University of Patras |
| ERC-2010-AdG | PE10 - Earth System Science | ATMOPACS | Spyridon Pandis | Foundation for Research & Technology Hellas |

## Crete

| | | | | |
|---|---|---|---|---|
| ERC-2007-StG | PE2 - Fundamental Constituents of Matter | TRICEPS | Theodore Peter Rakitzis | Foundation for Research & Technology Hellas |
| ERC-2009-StG | PE1 - Mathematical Foundations | ADAPTIVES | Chrysoula Tsogka | Foundation for Research & Technology Hellas |
| ERC-2011-StG | LS9 - Applied LifeSciences, Biotechnology & Bioengineering | HIVbiochip | Nikos Chronis | Foundation for Research & Technology Hellas |
| ERC-2011-StG | PE5 - Materials & Synthesis | SINOXYGEN | Georgios Vassilikogiannakis | University of Crete |
| ERC-2008-AdG | LS3 - Cellular & Developmental Biology | NEURONAGE | Nektarios Tavernarakis | Foundation for Research & Technology Hellas |

The Athens Urban area accounts for 13 Greek ERC Grants (54%) that are being implemented in 6 different host institutions (HIs) (see Chart 16). Indeed, 6 out of the 14 Greek Starting grantees and 7 out of 10 Greek Advanced grantees are located in the Attica region (see Chart 15). These data are directly related to Athens' population size, the number of researchers and the potential HIs. In this sense, Athens accounts for about 40% of the Greek population and 50% of total researchers (Eurostat - 2005). The island of Crete is ranked second with 4 Starting and 1 Advanced grantees located in two distinct organisations and cities (Heraklion & Rethimno). Crete accounts for 21% of the ERC Grants which represents a significantly higher proportion than its share in terms of population, researchers and potential HIs. Patras is in third position, with 2 Starting and 1 Advanced Grants being implemented in two different organisations. Other Greek cities exhibiting ERC Grants are Thessaloniki and Ioannina (see Chart 15 & Chart 16)

**Chart 15**: **Geographical distribution of ERC Grants in Greece per funding scheme**

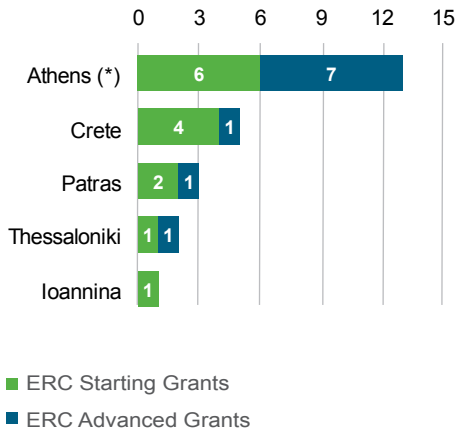
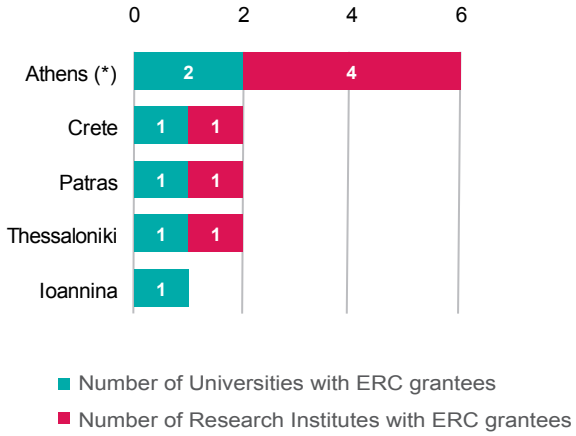



**Chart 16**: **Number of Greek HIs with ERC grantees per type of organisation & per area**



# Mapping of Excellence Based on the Greek Organisations Hosting ERC Grants & ERC Reviewers

ERC competitions are primarily competitions among individual outstanding researchers that submit a proposal on a cutting-edge scientific topic of their choice and choose their research environment. However the host institutions are another important factor in the ERC Grants since they compete not only for the best researchers but also for funds to increase their research budget and perform excellent frontier research.

The vast majority of ERC Grants are implemented in universities and public research organisations of EU and associated countries. A very small percentage of the ERC applications, about 1%, concerns projects that are hosted by a private organisation and only 11 ERC Grants are currently being implemented in private research organisations or in industry, with a success rate of about 14%.

In Greece, there are no ERC Grants hosted by private organisations. Twelve of the Greek ERC Grants are implemented in universities whereas the other 12 are hosted by public research organisations. It should be noted that 6 out of the 7 ERC grantees that display a dual affiliation to a Greek research organisation and university have selected the research organisation to implement their ERC project (see Table 4). Chart 17 depicts the distribution of Greek ERC Grants per type of Host Institution and funding scheme whereas chart 18 shows the number of Greek ERC Grants per type of HI and domain of application. While 2/3 of the Greek ERC Grants submitted to the Life Sciences domain (6) are implemented in Greek research organisations, more than half of the Greek ERC grantees applying to the Physical Sciences and Engineering domain (9) are hosted in Greek universities.

**Chart 17**: ERC Grants in Greece per type of Host Institution & funding scheme

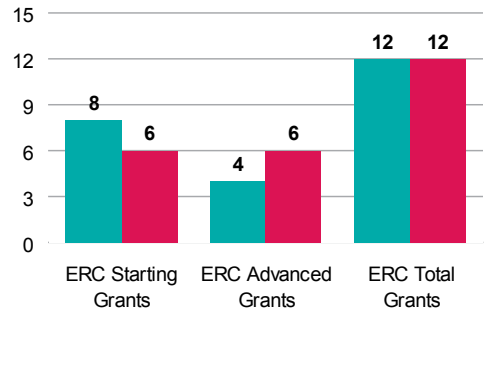
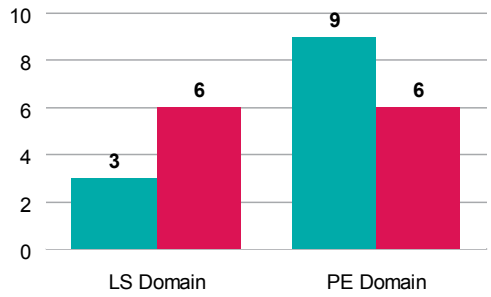



**Chart 18**: ERC Grants in Greece per type of Host Institution & domain




In the first eight completed ERC calls, 2.566 Grant Agreements were signed with about 470 different Host Institutions which indicated a strong concentration of ERC funded projects in a relatively small number of research institutions. Approximately 50% of all grants are implemented in about 50 organisations which host 12 ERC funded Principal Investigators (PIs) or more. New International ranking lists of European research institutions have been developed on the basis of ERC success (i.e on the number of ERC Grants hosted). They are used to assess and benchmark the performance of European research institutions and can be useful tools for a variety of stakeholders ranging from students, to policy makers or industry/business partners. Table 5 depicts a list of organisations hosting at least 15 ERC PIs by funding scheme (14).

**Table 5**: Organisations hosting at least 15 ERC grantees (PIs)

| Host Institution | Starting Grants | Advanced Grants | Total |
|---|---|---|---|
| National Centre for Scientific Research (CNRS) | 86 | 38 | 124 |
| University of Cambridge | 44 | 32 | 76 |
| University of Oxford | 38 | 34 | 72 |
| Max Planck Society | 33 | 29 | 62 |
| Swiss Federal Institute of Technology Lausanne (EPFL) | 27 | 25 | 52 |
| Hebrew University of Jerusalem | 28 | 17 | 45 |
| Swiss Federal Institute of Technology Zurich (ETH Zurich) | 14 | 29 | 43 |
| Imperial College | 22 | 20 | 42 |
| University College London | 23 | 19 | 42 |
| Weizmann Institute | 21 | 18 | 39 |
| French Alternative Energies and Atomic Energy Commission | 23 | 6 | 29 |
| National Institute of Health and Medical Research (Inserm) | 18 | 10 | 28 |
| University of Leuven | 19 | 7 | 26 |
| University of Bristol | 9 | 15 | 24 |
| University of Munich | 8 | 15 | 23 |
| Leiden University | 12 | 11 | 23 |
| University of Edinburgh | 11 | 12 | 23 |
| University of Zurich | 10 | 13 | 23 |
| University of Amsterdam | 13 | 8 | 21 |
| University of Helsinki | 12 | 9 | 21 |
| Karolinska Institute | 11 | 9 | 20 |
| Nat. Inst. for Res. in Computer Science & Automatic Control | 12 | 8 | 20 |
| Spanish National Research Council (CSIC) | 14 | 6 | 20 |
| Technion - Israel Institute of Technology | 17 | 3 | 20 |
| Free University of Amsterdam | 13 | 6 | 19 |
| Radboud University Nijmegen | 13 | 6 | 19 |
| University of Groningen | 16 | 2 | 18 |
| Aarhus University | 9 | 9 | 18 |
| Medical Research Council UK | 8 | 9 | 17 |
| Pasteur Institute | 11 | 6 | 17 |
| Utrecht University | 11 | 6 | 17 |
| University of Geneva | 6 | 11 | 17 |
| University of Heidelberg | 10 | 7 | 17 |
| University of Vienna | 8 | 9 | 17 |
| Lund University | 8 | 8 | 16 |
| University of Copenhagen | 9 | 7 | 16 |
| Technical University of Munich | 8 | 8 | 16 |
| Tel Aviv University | 6 | 9 | 15 |

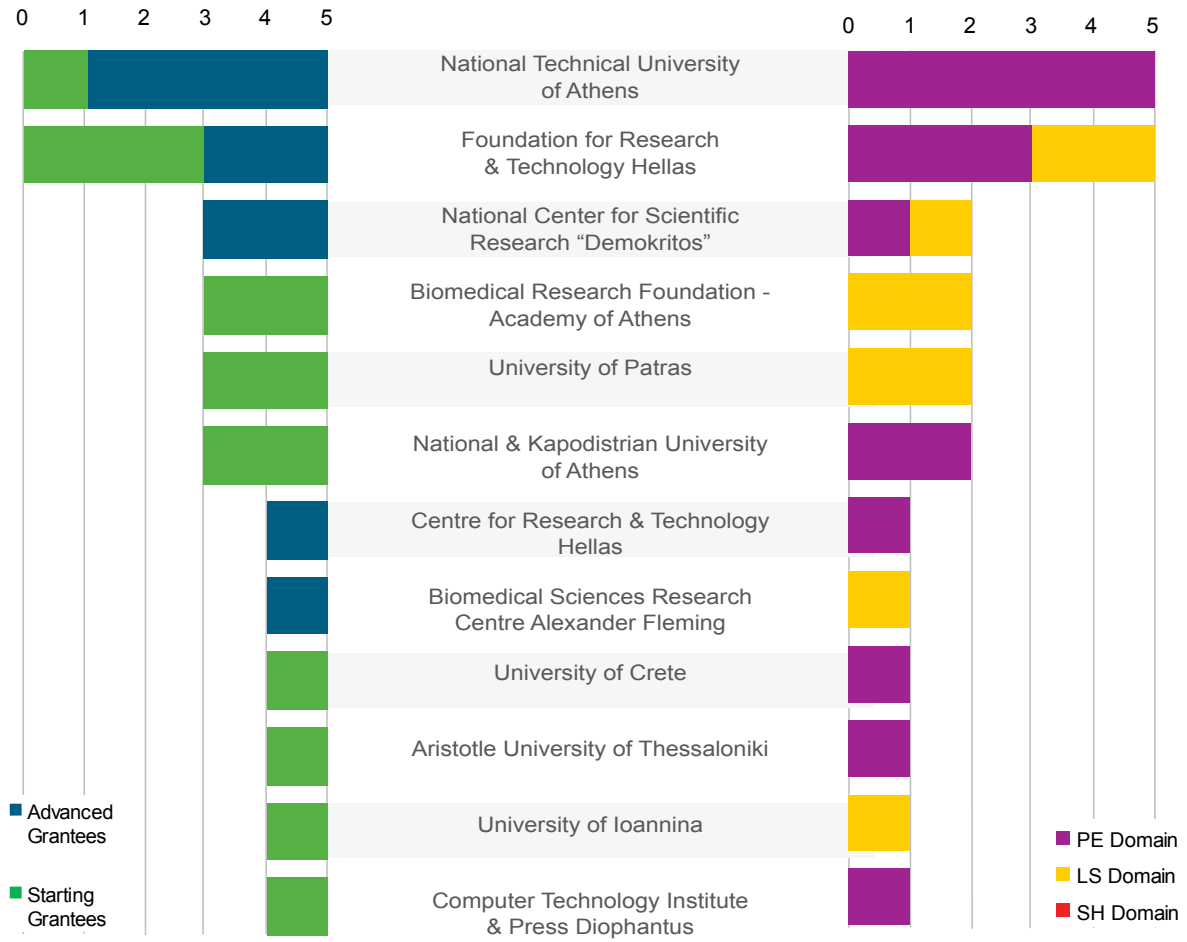
This concentration of grants on few organisations is a key feature of competitive research funding on the basis of excellence and it is also observed in Greece with 2 organisations, the National Technical University of Athens (NTUA) and the Foundation for Research & Technology Hellas (FORTH) hosting 42% of the Greek ERC grantees and almost half of the ERC funding received by Greece (see Table 6). The University of Patras is placed in third position with about 10% of the Greek ERC funding.

**Table 6**: **Greek organisations hosting ERC grantees (PIs) by grant scheme & ERC funding**

| Host Institution | Starting Grants | Advanced Grants | Total | ERC Funding (% ERC Greek Funding) |
|---|---|---|---|---|
| 1. National Technical University of Athens | 1 | 4 | 5 | 8.933.432 (24,1%) |
| 2. Foundation for Research & Technology Hellas | 3 | 2 | 5 | 8.457.999 (22,8%) |
| 3. University of Patras | 2 | 0 | 2 | 3.526.000 (9,5%) |
| 4. National Centre for Scientific Research “Demokritos” | 0 | 2 | 2 | 3.221.611 (8,7%) |
| 5. Biomedical Research Foundation Academy of Athens | 2 | 0 | 2 | 2.591.200 (7%) |
| 6. National & Kapodistrian University of Athens | 2 | 0 | 2 | 2.245.874 (6%) |
| 7. Biomedical Sciences Research Centre Alexander Fleming | 0 | 1 | 1 | 2.499.600 (6,8%) |
| 8. Center for Research & Technology Hellas | 0 | 1 | 1 | 1.749.999 (4,8%) |
| 9. University of Crete | 1 | 0 | 1 | 1.338.000 (3,6%) |
| 10. Aristotle University of Thessaloniki | 1 | 0 | 1 | 1.128.400 (3,1%) |
| 11. Computer Technology Institute & Press Diophantus | 1 | 0 | 1 | 749.996 (2%) |
| 12. University of Ioannina | 1 | 0 | 1 | 592.500 (1,6%) |

Chart 19 shows the 12 Greek institutions that host Principal Investigators, per funding scheme, whereas chart 20 lists the Greek organisations implementing ERC Grants, per domain. FORTH and the National Centre for Scientific Research "Demokritos" are the only Greek organisations that currently host successful applicants (projects) in both the Life Sciences and the Physical Sciences and Engineering domains.

• **Chart 19**: **Greek Organisations hosting ERC grantees per funding scheme**




• **Chart 20**: **Greek Organisations hosting ERC grantees per domain of application**




In the ranking list of Greek institutions based on ERC success, first are NTUA and FORTH with five ERC grantees each (see Table 6). However, when considering the HI of submission and not of implementation, FORTH leads the Greek rankings in terms of ERC success with 6 successful ERC applications (2 for the Advanced and 4 for the Starting funding scheme).

As regards the Advanced funding scheme, NTUA leads with four Advanced grantees followed by FORTH and the National Centre for Scientific Research "Demokritos", with two ERC Advanced Grants each. On the other hand, NTUA only hosts one Starting grantee. The ERC Starting funding scheme represents the future of excellence by supporting the next generation of research leaders in Europe. In this regard, the NTUA could consolidate its leading role as a centre of excellence in Greece by placing more emphasis on attracting and retaining promising top research leaders, thereby encouraging their early independence.

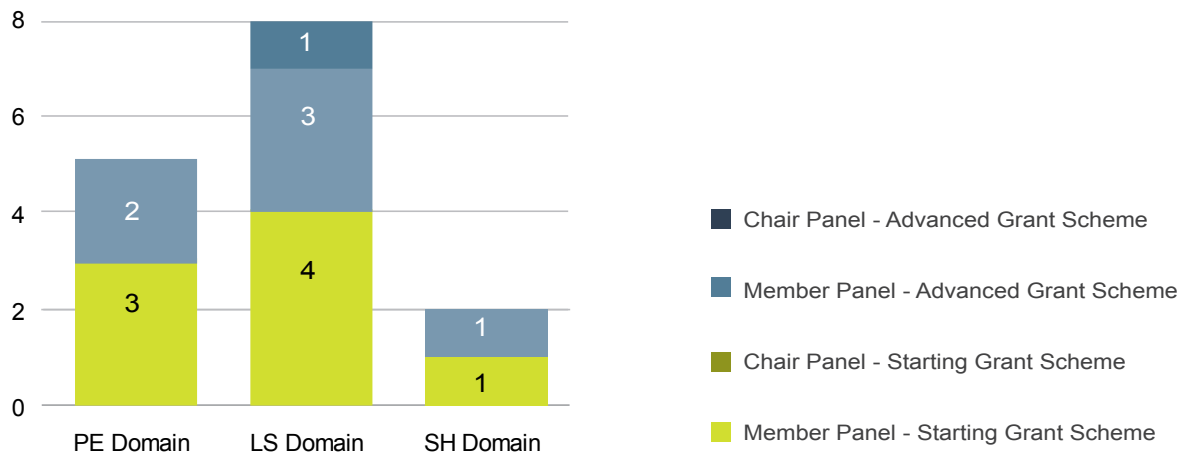
FORTH is the leading organisation in terms of ERC Starting grantees, hosting three. It is followed by the Biomedical Research Foundation Academy of Athens, the University of Patras and the National and Kapodistrian University of Athens, with 2 ERC Starting Grants each. Six Greek institutions host just one Principal Investigator: the Aristotle University of Thessaloniki, the Computer Technology Institute & Press Diophantus, the Centre for Research & Technology Hellas, the Biomedical Sciences Research Centre Alexander Fleming, the University of Ioannina and the University of Crete. However, the University of Crete actually plays a more significant role in the Greek mapping of excellence if the dual affiliation of some Principal Investigators is taken into consideration. In this sense, four Principal Investigators display a professorship at the University of Crete (see Table 4).

## Greek ERC Reviewers as an Indicator of Excellence

The chair and members of the ERC panels involved in the evaluation of applications submitted to the ERC proposals are high-level scientists and/or scholars that have been proposed by the ERC Scientific Council on the basis of their scientific reputation and therefore should also be considered in the mapping of excellence. From now on, "Greek ERC reviewers" refers to ERC reviewers hosted by Greek research institutions.

Table 7 shows the 15 researchers located in Greek host institutions that have acted as chair or panel members in the evaluation of ERC Starting or Advanced Grant calls completed so far. Five researchers were ERC reviewers in the PE domain, eight in the LS domain and two in the SH domain (see Chart 21). In addition, 14 acted as panel members whereas only 1 was chair of an ERC panel. The Greek ERC reviewers are located in Host Institutions where ERC grantees are already based, with the exception of the organisations that have panel members of the SH domain since there have not been any grantees in this domain thus far. The National and Kapodistrian University of Athens boasts 5 ERC panel members whereas the Biomedical Sciences Research Centre Alexander Fleming and the Foundation for Research & Technology Hellas each have 2 ERC reviewers. If we consider the double affiliation of some researchers, 3 ERC reviewers have a professorship at the University of Crete. Finally, the National Technical University of Athens has 1 ERC panel member among the 8 completed calls.

**Chart 21: ERC reviewers in Greek organisations per funding scheme & domain**



• **Table 7**: **List of researchers in Greek organisations that are members of an ERC Evaluation Panel**

| ERC Evaluation Panels - Descriptors | ERC Evaluation Panels | | | |
|---|---|---|---|---|
| | Chair Panel - StG Scheme | Panel Member - StG Scheme | Chair Panel - AdG Scheme | Panel Member - AdG Scheme |
| **PE1 = Mathematics:** all areas of mathematics, pure and applied, plus mathematical foundations of computer science, mathematical physics and statistics | | | | |
| **PE2 = Fundamental Constituents of Matter:** particle, nuclear, plasma, atomic, molecular, gas & optical physics | | Dimitrios Charalambidis (FORTH - Institute of Electronic Structure & Laser; & University of Crete - Physics Department) | | |
| **PE3 = Condensed Matter Physics:** structure, electronic properties, fluids, nanosciences | | | | |
| **PE4 = Physical & Analytical Chemical Sciences:** analytical chemistry, chemical theory, physical chemistry/chemical physics | | | | |
| **PE5 = Synthetic Chemistry & Materials:** materials synthesis, structure-properties relations, functional & advanced materials, molecular architecture, organic chemistry | | | | |
| **PE6 = Computer Science & Informatics:** informatics & information systems, computer science, scientific computing, intelligent systems | | | | Pavlos Spirakis (Computer Technology Institute; & University of Patras - Engineering School, Department of Computer Engineering & Informatics) |
| **PE7 = Systems & Communication Engineering:** electronic, communication, optical & systems engineering | | Hercules Avramopoulos (National Technical University of Athens - School of Electrical & Computer Engineering, Photonics Communications Research Laboratory) | | |
| **PE8 = Products & Processes Engineering:** product design, process design & control, construction methods, civil engineering, energy systems & material engineering | | | | |
| **PE9 = Universe Sciences:** astro-physics/ chemistry/biology: solar system; stellar, galactic and extragalactic astronomy, planetary systems, cosmology; space science, instrumentation | | | | Kanaris Tsinganos (National & Kapodistrian University of Athens - Physics Department, Section Astrophysics & Astronomy) |
| **PE10 = Earth System Science:** physical geography, geology, geophysics, atmospheric sciences, oceanography, climatology, ecology, global environment change, biogeochemical cycles, natural resources management | | Euripides Stephanou (University of Crete - Chemistry Department, Environmental Organic Chemistry) | | |
| **LS1 = Molecular & Structural Biology & Biochemistry:** molecular biology, biochemistry, biophysics, structural biology, biochemistry of signal transduction | | Iannis Talianidis (BSRC Fleming - Institute Molecular Biology & Genetics) (ERC panel member & AdG grantee) | | Dimitrios Thanos (Biomedical Research Foundation Academy of Athens - Basic Research II, Molecular Biology) |

| ERC Evaluation Panels - Descriptors | ERC Evaluation Panels | | | |
|---|---|---|---|---|
| | Chair Panel - StG Scheme | Panel Member - StG Scheme | Chair Panel - AdG Scheme | Panel Member - AdG Scheme |
| **LS2 = Genetics, Genomics, Bioinformatics & Systems Biology:** genetics, population genetics, molecular genetics, genomics, transcriptomics, proteomics, metabolomics, bioinformatics, computational biology, biostatistics, biological modeling & simulation, systems biology, genetic epidemiology | | | | |
| **LS3 = Cellular & Developmental Biology:** cell biology, cell physiology, signal transduction, organogenesis, developmental genetics, pattern formation in plants & animals | | | | |
| **LS4 = Physiology, Pathophysiology & Endocrinology:** organ physiology, pathophysiology, endocrinology, metabolism, ageing, regeneration, tumorigenesis, cardiovascular disease, metabolic syndrome | | | | |
| **LS5 = Neurosciences & Neural Disorders:** neurobiology, neuroanatomy, neurophysiology, neurochemistry, neuropharmacology, neuroimaging, systems neuroscience, neurological disorders, psychiatry | | | | Leonidas Stefanis (National & Kapodistrian University of Athens - Medical School; & Biomedical Research Foundation Academy of Athens - Basic Neurosciences) |
| **LS6 = Immunity & Infection:** immunobiology, aetiology of immune disorders, microbiology, virology, parasitology, global & other infectious diseases, population dynamics of infectious diseases, veterinary medicine | | George Kollias (BSRC Fleming - Institute of Immunology)<br><br>Haralampos Moutsopoulos (National & Kapodistrian University of Athens - Faculty of Medicine, Department of Pathophysiology) | | |
| **LS7 = Diagnostic Tools, Therapies & Public Health:** aetiology, diagnosis & treatment of disease, public health, epidemiology, pharmacology, clinical medicine, regenerative medicine, medical ethics | | Klea Katsougianni (National & Kapodistrian University of Athens - Faculty of Medicine, Laboratory of Hygiene & Epidemiology) | Dimitrios Boumpas (FORTH -Institute of Molecular Biology & Biotechnology; and University of Crete - Medical School, Laboratory of Autoimmunity & Inflammation) | Dimitrios Trichopoulos* (National & Kapodistrian University of Athens -Faculty of Medicine, Laboratory of Hygiene & Epidemiology) |
| **LS8 = Evolutionary, Population & Environmental Biology:** evolution, ecology, animal behaviour, population biology, biodiversity, biogeography, marine biology, ecotoxicology, prokaryotic biology | | | | |
| **LS9 = Applied Life Sciences & Biotechnology:** agricultural, animal, fishery, forestry and food sciences; biotechnology, chemical biology, genetic engineering, synthetic biology, industrial biosciences, environmental biotechnology & remediation | | | | |

| ERC Evaluation Panels - Descriptors | ERC Evaluation Panels | | | |
|---|---|---|---|---|
| | Chair Panel - StG Scheme | Panel Member - StG Scheme | Chair Panel - AdG Scheme | Panel Member - AdG Scheme |
| **SH1 = Individuals, Institutions & Markets:** economics, finance & management | | Aikaterini Kyriazidou (Athens University of Economics & Business - Department of Economics) | | |
| **SH2 = Institutions, Values, Beliefs & Behaviour:** sociology, social anthropology, political science, law, communication, social studies of science & technology | | | | |
| **SH3 = Environment, Space & Population:** environmental studies, demography, social geography, urban & regional studies | | | | Anna Triandafyllidou* (Democritus University of Thrace; and Hellenic Foundation for European & Foreign Policy) |
| **SH4 = The Human Mind & Its Complexity:** cognition, psychology, linguistics, phylosophy & education | | | | |
| **SH5 = Cultures & Cultural Production:** literature, visual & performing arts, music, cultural & comparative studies | | | | |
| **SH6 = The Study Of The Human Past:** archaelogy, history & memory | | | | |

* ERC reviewers with double affiliation: Prof Triandafyllidou is based in Greece and Italy whereas Prof Trichopoulos in Greece and USA. Only positions at Greek HIs are depicted.

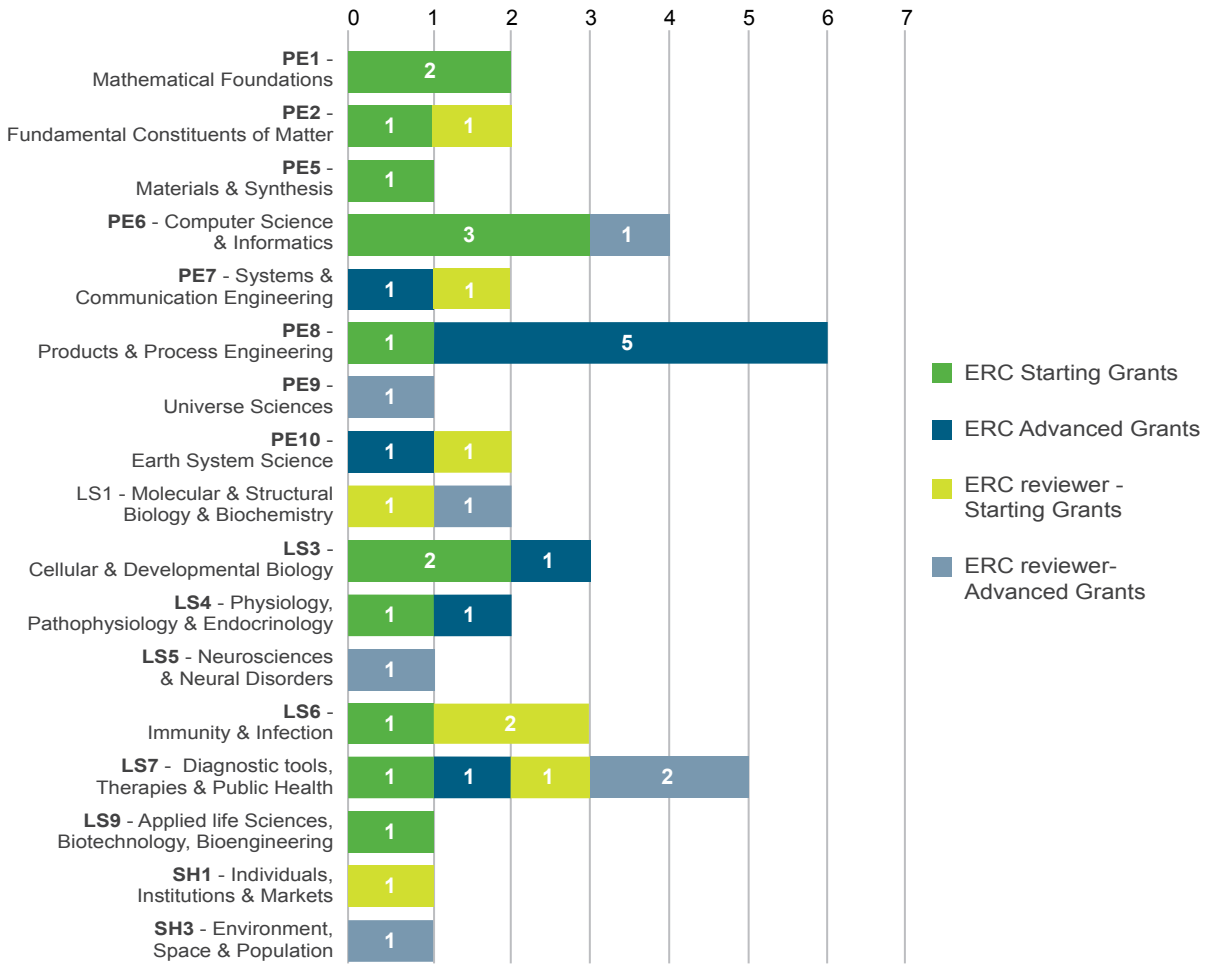
# Mapping of Excellence Based on the ERC Panel of Application & the Field of Research of ERC Grantees in Greece

The ERC supports investigator-driven frontier research through a competitive review process greatly recognized and highly respected by the entire scientific community, based on the sole criterion of scientific excellence. In this sense, the ERC does not only support and strength European leading research institutions but also excellent research teams in smaller institutions facilitating the emergence of new centres or research units of excellence all over Europe.

The applications to the ERC calls must be submitted to the appropriate primary ERC panel (i.e. the panel which covers the main scientific areas of the research proposed). The peer review evaluation (18) of the ERC Grants proposals is in the hands of 25 peer review evaluation panels, also called ERC panels, covering all fields of science, engineering and scholarship. For operational reasons the panels are subdivided into 3 main research domains (the Physical Sciences & Engineering domain, the Life Sciences domain and the Social Sciences & Humanities domain) that have 10, 9 & 6 panels respectively. The panel chair and members are high-level scientists and/or scholars and make recommendations for funding either autonomously or based on the feedback of external specialists who are not on the panel – the remote referees.

Chart 22 depicts the Greek ERC Grants per main ERC panel of submission as well as ERC evaluators in Greece. Based on the results of the first 8 completed calls, Greece displays outstanding expertise in the panel P8 “Products & process engineering” with 6 ERC grantees: 1 Starting and 5 Advanced grantees, 4 of them located at the National Technical University of Athens. Greece excels at International level in the research area covered by the ERC panel LS7 “Diagnostic tools, Therapies & Public Health” with 1 Advanced and 1 Starting grantee as well as 3 ERC reviewers - 2 in the Advanced and 1 in the Starting funding scheme. It is worth noting that this is the only ERC panel that has a researcher located in Greece (Prof. Boumpas), acting as chair of the panel. Other ERC panels where Greek researchers excel are PE6 “Computer Sciences & Informatics”, exhibiting 3 Starting grantees and 1 ERC reviewer in the Advanced funding scheme, the panel LS3 “Cellular & Developmental Biology”, displaying 2 Starting grantees and 1 Advanced grantee and the panel LS6 “Immunity & Infection” comprising 1 Starting grantee and 2 ERC reviewers in the Starting funding scheme.

**Chart 22**: **ERC Grants & ERC reviewers in Greece per ERC evaluation panel**



However, each ERC panel is accompanied by a list of panel descriptors and covers quite a broad field of research. In addition, most of the Greek organisations hosting ERC grantees are large universities or major research organisations comprising numerous schools, faculties or institutes that range in quality and research performance. Therefore, in order to have a better insight into the emerging and established centres / research units of excellence in Greece in terms of ERC success, the scientific expertise of the principal investigators and ERC reviewers located in Greece together with their affiliation at faculty, school and even departmental level has been taken into consideration (see Table 8).

## Research Centres/Units of Excellence in Physical Sciences & Engineering (based on ERC success)

- The National Technical University of Athens - and in particular the School of Civil Engineering (Prof. Gazetas & Prof. Papadrakakis) and the School of Applied Mathematical & Physical Sciences (Prof. Dafalias & Prof. Vardoulakis & team), with two Advanced grantees each - constitutes one of the Greek centres of excellence, displaying international leadership in seismic research in areas such as geotechnical engineering, structural engineering, soil mechanics and geomaterials.

  The School of Electrical & Computer Engineering hosts Prof. Avramopoulos - panel member in the Starting funding scheme – that is internationally recognised in the area of Systems & Communication Engineering and in particular in the field of photonics communications

- The Institute of Material Sciences of the National Centre for Scientific Research "Demokritos" hosts two Advanced grantees (Dr Kordas & Dr Dimoulas) that excel in the field of material sciences and in particular in micro- and nano-technologies. Prof. Aifantis - ERC Starting grantee at the Aristotle University of Thessaloniki - is a young talent that is also widely acknowledged in material sciences and nanotechnologies.

- The Institute of Electronic Structure & Laser (FORTH), with one ERC panel member (Prof. Charalambidis) and one Starting grantee (Prof. Rakitzis), has high-level expertise in the area of "Fundamental constituents of matter" (Laser interactions & Photonics) in fields such as polarization spectroscopy and attosecond science. Both researchers hold a professorship at the Physics Department of the University of Crete.

- The Faculty of Informatics & Telecommunications of the National Kapodistrian University of Athens is an emerging research centre of excellence in Computer Science & Informatics in the fields of cryptography, computer security, digital preservation, networking, and mobile computing, among others. In this sense, the abovementioned faculty hosts two Starting grantees (Prof. Roussopoulou & Prof. Kiayias) and a third PI (Prof. Achlioptas) who, while implementing his ERC Grant at the Computer Technology Institute & Press "Diophantus", has also a teaching position (professorship) at the same faculty.

  Based at the Physics Department of the National & Kapodistrian University of Athens is Prof. Tsinganos - a panel member in the Advanced Grant scheme - who excels in Astrophysics & Astronomy.

- The Computer Technology Institute & Press Diophantus, with one Starting Grant holder (Prof. Achlioptas) and one ERC reviewer (Prof. Spirakis) displays top expertise in ICT and computational mathematics in fields such as Algorithms and complexity, Computer systems and networks, and Algorithmic analysis of massive networks, among others. Computational mathematics is also the field of expertise of the ERC Starting grantee, Prof Tsogka, who holds a professorship at the University of Crete but implements her ERC project at FORTH.

- The University of Crete and specifically the Division of Organic Chemistry of the Chemistry Department, with one Starting grantee (Prof. Vassilikogiannakis) and an ERC reviewer (Prof. Stephanou), exhibits high-level expertise in organic chemistry in the fields of environmental and of synthetic organic chemistry.

- Finally, among the PIs hosted by Greek research institutions there are three Chemical engineers. Two of them excel in aerosol sciences with applications in the environment/clean technologies. This is the case of Prof. Konstandopoulos - Advanced grantee at the Centre for Research and Technology Hellas (Aerosol Particle Laboratory) and Professor at the Chemical Engineering Department of the Aristotle University of Thessaloniki - and Prof. Spyridon - Advanced grantee at the Institute of Chemical Engineering & High Temperature Chemical Processes (FORTH) and Professor at the Chemical Engineering Department of the University of Patras. The third PI is Prof. Athanasios Papathanasiou of the Chemical Engineers' School at the National Technical University of Athens - an ERC Starting grantee with high-level expertise in physical chemistry.

## Research Centres/Units of Excellence in Life Sciences (based on ERC success):

- The Institute of Molecular Biology and Biotechnology (IMBB) of the Foundation for Research & Technology Hellas(FORTH) - with 1 Advanced grantee (Prof. Tavernarakis), 1 Starting grantee (Prof. Chronis) and 1 chair of an ERC review panel (Prof. Boumpas) - constitutes a centre of excellence in the Health & Biotech themes with multi-disciplinary expertise ranging from biomedical engineering to molecular systems biology, ageing, neurosciences and medical inflammation, among other fields. In addition, the IMBB has played and continues to play a significant training role. In this sense, other excellent scientists such as Dr Talianidis (Advanced grantee - BSRC Fleming), Dr Thanos (ERC panel member - BRFAA) and Dr Popi Syntichaki (ERC Starting grantee - BRFAA) were previously professionally linked to this institute.

- The Medical School of the National and Kapodistrian University of Athens and in particular the Division of Social Medicine-Psychiatry-Neurology and the Department of Pathophysiology, with 3 and 1 ERC reviewers respectively, shows high-level expertise in the Health theme. In this sense, the Laboratory of Hygiene & Epidemiology (of the above mentioned division) has two ERC reviewers, Prof. Trichopoulos and Prof. Katsougianni, which are internationally recognised experts in the field of statistics and epidemiology. It should be mentioned that the ERC Starting Grant holder Prof. Salanti, based at the University of Ioannina, has also high-level expertise in this field. The 2nd Department of Neurology hosts another ERC reviewer Prof. Stefanis - affiliated investigator at the BRFAA - with top expertise in the pathogenesis of neurodegenerative disorders. Finally, Prof. Haralampos Moutsopoulos at the Department of Pathophysiology is prominent in the field of immunity and infection and particularly in autoimmune diseases.

- The Medical School of the University of Patras and in particular the Department of General Biology has two Starting grantees (Prof. Lygerou and Prof. Stathopoulos) and constitutes an emerging research unit of excellence in the Health - Biotech themes with internationally recognised expertise in molecular cell biology.

- The Centre of Basic Research II of the Biomedical Research Foundation, Academy of Athens (BRFAA), with one Starting grantee (Dr Popi Syntichaki), one ERC panel member (Dr Dimitrios Thanos), displays top expertise in molecular biology, biochemistry and molecular biophysics, genetics and ageing. The BRFAA has also one Starting grantee at the Centre of Basic Research I (Cell biology division) Dr Vily Panoutsakopoulou, highly talented young researcher in the genetic regulation of the immune response (mechanisms of autoimmunity).

- The Institute of Molecular Biology & Genetics at the Biomedical Sciences Research Centre Alexander Fleming has one Advanced grantee, Dr Talianidis that has also acted as an ERC panel member. He is an internationally recognised expert in the function of hepatic regulators and the general transcription machinery whereas the Institute of Immunology is being directed by another ERC panel member, Dr Kollias that is widely acknowledged in molecular and cellular mechanisms of immunological diseases.

• **Table 8**: **Centres & research units of excellence located in Greek organisations**

| Organisation name | Faculty , School, Deparment or Institute | PIs & ERC reviewers hosted | ERC panel [a] | Research expertise [b] | Comments |
|---|---|---|---|---|---|
| National Technical University of Athens (NTUA) | School of Civil Engineering | George Gazetas (Advanced grantee) | PE 8 - Products & Process Engineering | Geotechnical earthquake engineering (seismic research); Soil mechanics & foundations | |
| | | Manolis Papadrakakis (Advanced grantee) | PE 8 - Products & Process Engineering | Development & application of the latest computer methods & technology to structural engineering analysis & design; Seismic research | |
| | School of Applied Mathematical & Physical Sciences | Ioannis Vardoulakis & PI's team (Advanced grantee) | PE 8 - Products & Process Engineering | Soil mechanics; Geotechnical engineering; Geomaterials; Seismic research | |
| | | Ioannis Dafalias (Advanced grantee) | PE 8 - Products & Process Engineering | Soil mechanics; Geomechanics, seismic research | |
| National Technical University of Athens (NTUA) | School of Chemical Engineering | Athanasios Papathanasiou (Starting grantee) | PE 8 - Products & Process Engineering | Physical Chemistry: Addressable superhydrophobic surfaces; Electrowetting in microfluidics; Mechanisms of magneto-hydrostatic instabilities; Spatiotemporal addressing of catalytic activity & pattern formation | |
| National Technical University of Athens (NTUA) | School of Electrical & Computer Engineering | Hercules Avramopoulos (Member ERC panel PE7 - Starting funding scheme) | PE 7 - Systems & Communication Engineering | ICT - Material Sciences: Photonics communication (Optical techniques to telecom & datacom environments) | |
| National Center for Scientific Research "Demokritos" | Institute of Materials Science | Athanasios Dimoulas (Advanced grantee) | PE7 - Systems & Communication Engineering | Material Sciences - Micro/Nano devices: Advanced microelectronic & Composite materials | |
| | | George Kordas (Advanced grantee) | LS7 - Diagnostic Tools, Therapies & Public Health | Material Sciences - Nanotechnologies: Nanocontainers for medical & corrosion application | |

| Organisation name | Faculty , School, Deparment or Institute | PIs & ERC reviewers hosted | ERC panel [a] | Research expertise [b] | Comments |
|---|---|---|---|---|---|
| Foundation for Research & Technology Hellas | Institute of Molecular Biology and Biotechnology | Dimitrios Boumpas (Chair ERC panel LS7 - Advanced funding scheme) | LS7 - Diagnostic Tools, Therapies & Public Health | Health/Biotech: Medical inflammation in the context of autoinflammatory/autoimmune rheumatic diseases | Professor at the Medical School of the University of Crete |
| | | Nektarios Tavernarakis (Advanced grantee) | LS3 - (Cellular & Developmental Biology ) & LS5 (Neurosciences & Neural Disorders) | Health/Biotech: Molecular Systems Biology; Ageing & energy metabolism; Sensory transduction & integration; Neurodegeneration & necrotic cell death | Professor at the Medical School of the University of Crete |
| | | Nikos Chronis (Starting grantee) | LS9 - Applied Life Sciences, Biotechnology Bioengineering | Health/Biotech - Micro/Nano devices (Biomedical engineering): Bio-MicroElectroMechanical Systems (Bio-MEMS); Lab-On-A-Chip Systems; Microfluidics & Micro-optics; Polymer Micromachining; Bio-imaging & Neural Networks; | |
| Foundation for Research & Technology Hellas | Institute of Electronic Structure and Laser | Dimitrios Charalambidis (Member ERC panel PE2 - Starting funding scheme) | PE2 - Fundamental Constituents of Matter | Laser interactions & Photonics - Strong Field Physics: Attosecond science | Professor at the Physics Department of the University of Crete |
| | | Theodore Peter Rakitzis (Starting grantee) | PE2 - Fundamental Constituents of Matter | Laser interactions & Photonics - Chemical Physics: Polarisation spectroscopy | Professor at the Physics Department of the University of Crete |
| Foundation for Research & Technology Hellas | Institute of Applied Computational Mathematics | Chrysoula Tsogka (Starting grantee) | PE1- Mathematical Foundations | Computational Mathematics: Numerical & mathematical modeling of wave propagation phenomena; Imaging & time reversal in random media | Professor at the Applied Mathematics Department of the University of Crete |
| Foundation for Research & Technology Hellas | Institute of Chemical Engineering & High Temperature Chemical Processes (ICE-HT) | Spyridon Pandis (Advanced grantee) | PE10 - Earth System Science | Environment & Climate Change: Atmospheric chemistry; Atmospheric pollution modeling; Aerosol science; Global climate change; Environmental public policy analysis | Professor at the Chemical Engineering Department of the University of Patras |

| Organisation name | Faculty , School, Deparment or Institute | PIs & ERC reviewers hosted | ERC panel [a] | Research expertise [b] | Comments |
|---|---|---|---|---|---|
| University of Crete | Faculty of Science & Engineering- Department of Chemistry- Division of Organic Chemistry | Euripides Stephanou (Member ERC PE10 panel - Starting funding scheme) | PE10 - Earth System Science | Environmental Organic Chemistry | |
| | | Georgios Vassilikogiannakis (Starting grantee) | PE5 - Materials & Synthesis | Synthetic Organic Chemistry: Singlet Oxygen & Cascade Reaction Sequences; Biomimetic Syntheses | |
| National & Kapodistrian University of Athens | Faculty of Medicine - Social Medicine, Psychiatry, Neurology: Department of Hygiene, Epidemiology & Medical Statistics | Dimitrios Trichopoulos (Member ERC LS7 panel - Advanced funding scheme) | LS7 - Diagnostic Tools, Therapies & Public Health | Health: Epidemiology, Statistics | |
| | | Klea Katsougianni (Member ERC LS7 panel - Starting funding scheme) | LS7 - Diagnostic Tools, Therapies & Public Health | Health: Epidemiology, Statistics | |
| | Faculty of Medicine - Social Medicine- Psychiatry- Neurology: 2nd Department of Clinical Neurology | Leonidas Stefanis (Member ERC LS5 panel - Advanced funding scheme) | LS5 - Neurosciences & Neural Disorders | Health: Neurosciences - Pathology of neurodegenerative disorders | Affiliated researcher at BRFAA - Basic Neurosciences, Neurodegenerative Diseases Group |
| | Faculty of Medicine - Department of Pathophysiology | Haralampos Moutsopoulos (Member ERC panel LS6- Starting funding scheme) | LS6 - Immunity & Infection | Health: Autoimmune diseases | |
| National & Kapodistrian University of Athens | Faculty of Informatics & Telecommu-nications | Aggelos Kiayias (Starting grantee) | PE6 - Computer Science & Informatics | ICT: Digital content distribution - Cryptography & Computer security | |
| | | Dimitra-Isidora Roussopoulou (Starting grantee) | PE6 - Computer Science & Informatics | ICT: Distributed systems; Networking; Mobile computing; & Digital preservation | |
| National & Kapodistrian University of Athens | Physics Department - Section Astrophysics & Astronomy | Kanaris Tsinganos (Member ERC PE9 panel - Advanced funding scheme) | PE9 - Universe Sciences | Astrophysics & Astronomy: Plasma Astrophysics; Magnetohydrodynamics; Cosmic Jets; Cosmical Magnetic Fields; Solar & Heliospheric Physics; Solar & Stellar Winds; Accretion Disks; Star Formation; Active Galactic Nuclei, Quasars, Black Holes; Plasma Equilibrium & Stability; Nonlinear Differential Equations Space Instrumentation | |

| Organisation name | Faculty , School, Deparment or Institute | PIs & ERC reviewers hosted | ERC panel [a] | Research expertise [b] | Comments |
|---|---|---|---|---|---|
| Computer Technology Institute & Press Diophantus | | Dimitris Achlioptas (Starting grantee) | PE1 - Mathematical Foundations | ICT (computational mathematics): Threshold phenomena in random graphs & random formulas; Applications of embeddings & spectral techniques in machine learning; Algorithmic analysis of massive networks | Profesor at the Faculty of Informatics & Telecommunications of the National & Kapodistrian University of Athens |
| | | Pavlos Spirakis (Member ERC PE6 panel - Advanced funding scheme) | PE6 - Computer Science & Informatics | ICT (computational mathematics): Algorithms & complexity; Computer systems & networks; Threshold phenomena in random graphs & random formulas | Professor at the Engineering School, Computer engineering & Informatics Department of the University of Patras |
| University of Patras | Medical School - Division of Basic Medical Sciences I - Department of General Biology - Molecular Cell Biology Unit | Zoi Lygerou (Starting grantee) | LS3 - Cellular & Developmental Biology | Health/Biotech: Molecular Cell Biology - Molecular mechanisms of cell cycle control & DNA replication in health and disease | |
| | | Georgios Stathopoulos (Starting grantee) | LS4 - Physiology, Pathophysiology & Endocrinology | Health/Biotech: Human physiology - Molecular Respiratory Carcinogenesis & Host-tumor interactions in thoracic malignancies | |
| Biomedical Research Foundation Academy of Athens | Centre of Basic Research II | Dimitrios Thanos (Member ERC LS1 panel - Advanced funding scheme) | LS1 - Molecular & structural biology & biochemistry | Health/Biotech: Molecular biology; Biochemistry; Molecular Biophysics | |
| | | Popi Syntichaki (Starting grantee) | LS3 - Cellular & Developmental Biology | Health/Biotech: Genetic & gene therapy; Ageing | |
| | Centre of Basic Research I | Vily Panoutsakopoulou (Starting grantee) | LS6 - Immunity & Infection | Health/Biotech: Cell biology - Genetic regulation in Immunity (Asthma & Autoimmunity) | |
| Biomedical Sciences Research Center Alexander Fleming | The Institute of Immunology | George Kollias (Member of ERC LS6 panel - Starting funding scheme) | LS6 - Immunity & Infection | Health/Biotech: Immunology - Molecular & cellular mechanisms underlying immunological disease initiation, progression & chronicity | |
| | The Institute of Molecular Biology & Genetics | Ioannis Talianidis (Advanced Grantee & member ERC LS1 - panel- Starting funding scheme) | LS4 - Physiology, Pathophysiology & Endocrinology | Health/Biotech: Molecular biology & genetics - Molecular mechanisms governing the transcriptional regulation of liver-specific genes | |
| Centre for Research & Technology Hellas | Chemical Process Engineering Research Institute- Aerosol Particle Laboratory | Athanasios Konstandopoulos (Advanced grantee) | PE8- Products & Process Engineering | Green Technologies (Energy, Transport): Aerosol science - Combustion aerosols & nanoparticles (Monolithic reactors & emission control systems) | Professor at the Chemical Engineering Department of the Aristotle University of Thessaloniki |

| Organisation name | Faculty , School, Deparment or Institute | PIs & ERC reviewers hosted | ERC panel [a] | Research expertise [b] | Comments |
|---|---|---|---|---|---|
| Aristotle University of Thessaloniki | Polytechnic School- Department Mathematical, Physics & Computational Sciences -Laboratory of Mechanics & Materials | Katerina Aifantis (Starting grantee) | PE6 - Computer Science & Informatics | Material Sciences - Nanotechnology: Micro/Nano applications | Affiliated Scientist at 1st Clinic of Neurology (Medical School) of the Aristotle University of Thessaloniki<br><br>Affiliated Scientist at the Institute of Electronic Structure and Laser - FORTH |
| University of Ioannina | Medical School - Department of Hygiene & Epidemiology | Georgia Salanti (Starting grantee) | LS7 - Diagnostic tools, therapies & public health | Health: Epidemiology, Statistics (Statistical modeling; Multiparameter evidence synthesis; Meta-analysis) | |
| Athens University of Economics & Business | Department of Economics | Aikaterini Kyriazidou (Member ERC SH1 panel - Starting funding scheme) | SH1- Individuals, Institutions & Markets | Economics: Econometrics | |
| Democritus University of Thrace | | Anna Triandafyllidou (Member ERC SH3 panel - Advanced funding scheme) | SH3 -Environment, Space & Population | Social & Political Sciences: Migration; Nationalism; European integration; Media & discourse studies covering Southern, Western & Central Eastern Europe including comparative highlights with the US | Senior research fellow at the Hellenic Foundation for European & Foreign Policy |

**(a)** ERC panel descriptors of 2012 Work Programme
**(b)** Field of expertise as described at the professional webpage of the researcher. Only positions at Greek HIs are depicted

# Gender Distribution among ERC Grantees in Greece

About a fifth of the ERC Grant holders in Europe are women whereas in Greece the share of female grantees is higher and accounts for almost 1/3 of the ERC successful applicants. However, the gender distribution of ERC Grants in Greece displays a significant discrepancy between the two ERC Funding schemes. After eight completed calls, 50% of the ERC Starting grantees located in Greek Host Institutions are women whereas the share of female Starting grantees in Europe is only 24%. On the other hand, there are no female Advanced grantees in Greek Host institutions whereas the share of female Advanced grantees in Europe is 12% (see Chart 23). As regards the domain of application, there is a slightly smaller share of women PIs in Greek Host Institutions (HIs) compared to their male counterparts in the Life Sciences domain whereas only 1/5 of the PIs in Greek HIs that successfully applied to the Physical Sciences and Engineering domain are women (see Chart 24). The relatively low percentage of female grantees in European and associated countries - including Greece - is partly due to the low submission rates of women, accounting for 29% and 14% of all applicants for the Starting and Advanced funding schemes, respectively (14).

Concerning ERC reviewers, 3 of the 15 panel or chair members hosted by Greek institutions (20%) are women - one in the Life Sciences and two in the Social Sciences & Humanities domains.

Broadly speaking, although the ERC application ratios reflect the proportion of women at the different stages of research careers in Europe, the ERC Scientific Council is concerned about the gender imbalance in many fields of research. In this sense, in 2010, the ERC Scientific Council adopted a gender equality plan (19) that aimed to consider and confront structural gender differences, so that the ERC can fulfill its mission to support excellent frontier researchers across Europe, irrespective of nationality, gender or age. The plan, based on the view that women and men are equally able to perform excellent frontier research, was prepared by the ERC Gender Balance Working group, adopted by the Scientific Council in December 2010 and published in February 2011. The gender equality plan exhibits three central goals: to raise awareness among potential women scientists in order to improve the number of female applicants submitting ERC proposals in all research fields, to ensure fairness and equal treatment in the ERC Grant competitions, and to improve the gender balance within the ERC's peer review system. In this context, the ERC evaluation criteria were adjusted in the ERC Work Programme 2010 in order to emphasize that career breaks and/or unconventional research career paths of Principal Investigators (PIs) shall be taken into account, and to offer female PIs an increased extension to the Starting Grant eligibility window of 18 months per child born before or after the awarding of their PhD.

It should be noted that the National Documentation Centre supports and promotes the European policy on Gender Equality through its participation in the European projects GENDERA: Gender Debate in the European Research Area and SHEMERA - Euro-Mediterranean research cooperation on gender and science. To this end, EKT has developed a Database of good practices for equal opportunities of genders in research (practices related to recruitment, selection and promotion); Guidelines for integration of gender issues in research organizations; Study on policies for women's career development in research; National task forces on gender issues in research; and completed a mapping survey about Greek women researchers in 2007.

**Chart 23**: **Number (& %) of female ERC grantees in Greece per funding scheme**

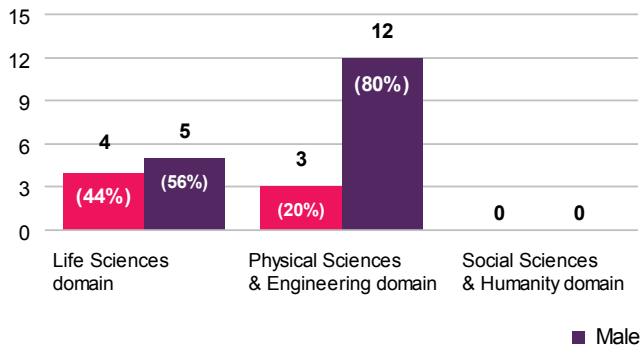
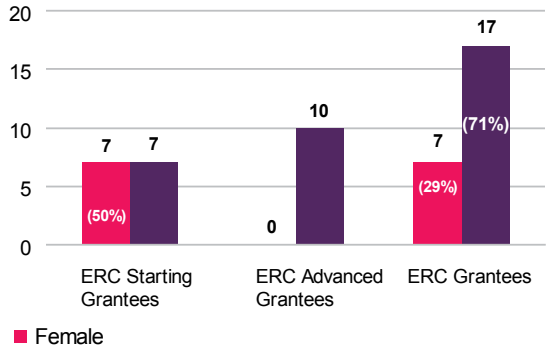



**Chart 24**: **Number (& %) of female ERC grantees in Greece per domain**




## Attractiveness of the Greek R&I Landscape Based on the Results of ERC Calls

One of the main objectives of the ERC is to enhance the ability of Europe to retain and repatriate the best researchers in Europe as well as to attract talents from abroad. To meet this objective the Scientific Council has delineated a strategy based on the reduction of mobility barriers as well as on the empowerment of researchers by offering attractive funding conditions, the possibility of grant portability and by supporting the early independence of emerging top talents. In addition to this, both ERC funding schemes (Starting & Advanced Grants) encourage researchers that reside outside the ERA to move to an EU or Associated Country by offering financial incentives and flexible project implementation conditions. As such, non-ERA resident researchers can request additional funding to cover "start-up" costs such as the purchase of major equipment necessary in their new research environment (500.000 € for Starting Grant and 1 Mio € for Advanced Grant) and both funding schemes request researchers to spend at least 50% of their working time in an ERA country and 50% (Starting Grants) / 30% (Advanced Grants) of their working time on the project.

The ERC website (1) includes detailed statistics of each ERC completed call, including detailed analysis of mobility patterns and flows of researchers between countries, and provides an overall picture of the relative attractiveness of national research systems in Europe based on the results of ERC calls. However, these data should not be over-interpreted since many factors influence the mobility of researchers and not only the attractiveness of national research systems. In the case of Greece, the deep crisis that the country is going through is another relevant aspect that has to be taken into consideration.

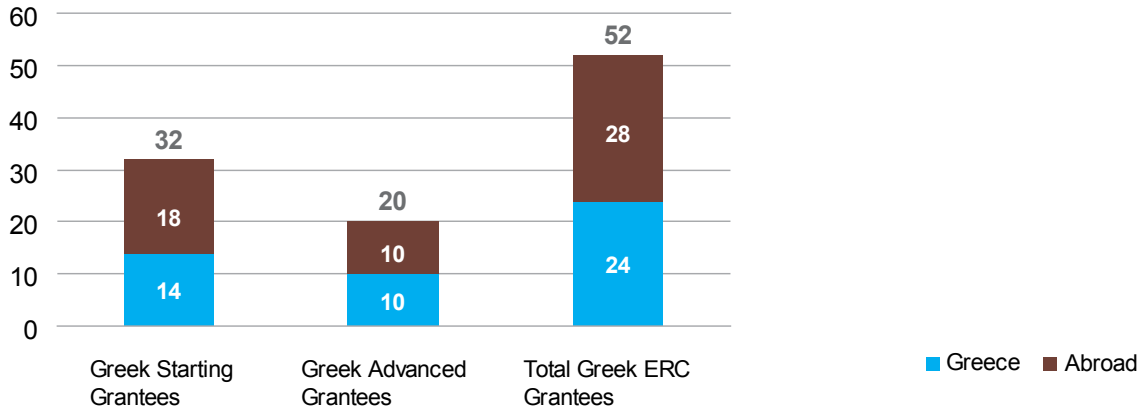
## Patterns of Mobility Based on ERC Statistics

Generally, most of the ERC Grant holders are nationals of the country of their host institution. This is the case for countries such as Israel, Hungary and Italy with a very small proportion of foreign researchers (3, 7 and 10% respectively) in contrast with countries such as Switzerland, Austria and the UK with a significant share of foreign ERC grantees out of the total hosted (76, 66 and 44% respectively). Until now, ERC grantees rarely chose to move to a country different from where they were already conducting their research activities at the moment of submitting the proposal. Finally, although 2/3 of grantees are nationals working in their home countries, there are some nationalities that tend to work abroad rather than in their home country. Indeed a significant share of Italian, German, Polish and Greek grantees work in other EU countries.

Greece does not host any Principal Investigator of other nationalities. However, 31 non-Greek PIs (4% of applications from Greece) have submitted a proposal with a Greek Host Institution unfortunately without success. In addition, while Greece occupies 16th position in terms of ERC grantees hosted in Greek Host Institutions, it is placed in 12th position in terms of nationality of the Principal Investigator. 52 promising and established top Greek researchers in their field have been funded through the IDEAS programme: 32 in the Starting and 20 in the Advanced funding scheme (15).

Chart 25 shows the distribution of ERC grantees in Greece and abroad per funding scheme. More than half of the Greek grantees successfully applied through a foreign host institution. In this sense, 56% and 50% of the Greek Starting and Advanced grantees, respectively, are implementing their excellent research at the frontier of knowledge outside of Greece.

• **Chart 25**: **Share of Greek ERC grantees in Greece & abroad**



## Mobility of PIs due to Grant Portability

Although the ERC agreements are signed with research organisations, they are personalized. ERC Grants are portable, allowing researchers to change institution and take their grant with them to a new research organisation located in the same or in a different country. However a very small percentage of researchers choose this option - mainly when a better working environment or a permanent position is offered to them. It should be noted that in Greece, from 2007 to 2011, only one ERC Starting Grant holder had requested grant portability so far and that was to another Greek institution.

## Mobility in the Career Paths of Excellent Researchers & the Relevance of the USA

Mobility plays an important role in individual research careers and is one of the main drivers in the competitive development of the ERA.

First analyses of the career paths of Greek ERC Grant holders provide interesting observations. As such, the career paths of the 14 Starting grantees hosted by Geek research institutions show that 13 out of 14 had obtained a degree, a PhD and/or had a post-doc position abroad. At least 9 out of 14 were hosted by two different foreign research institutions, located in the same or different countries. For 10 out of the 14 Starting Grant holders one or more of these 3 steps were completed in a US research institution.

## Repatriation rather than Attraction of Non-ERA Researchers

ERC competitions are open to any researcher anywhere in the world who wants to conduct a research project in an EU Member State or FP7 Associated Country. In this sense, ERC efforts have been focused on attracting researchers from countries outside the ERA (European and non-European). However, the number of applications and ERC grantees from non-ERA countries is still quite limited. The eight completed calls for proposals attracted less than 700 applications (3%) from researchers who reside in countries outside the European Research Area, most of them having their previous residence in the USA. In total, the ERC has funded 74 researchers who, at the time of application, were resident outside the ERA: 55 (or 74%) and 19 (26%) have been funded by the Starting and Advanced funding scheme respectively. The Starting Grants seem to be an adequate instrument to attract young researchers for a research position in Europe. In particular, if the host institutions can offer additional incentives (ie. permanent positions, family support mechanisms, etc). In contrast, typical Advanced Grant holders already have a fixed position, are settled in their environment and scientific network, and thus less mobile. It should be noted that 56 of the 74 non-ERA residents that have been funded in the ERC calls (about 75%) are nationals of EU Member States and of Associated Countries and therefore we should mainly talk about repatriation rather than attraction of non-ERA nationals to the European research system (14).

Greece has repatriated 3 Greek researchers, all of them ERC Starting Grant holders that were in the US at the time of the Grant Agreement.

# 4. Impact & Major Achievements of the ERC in the ERA & Particularly in Greece

Since its launch in 2007, the ERC has introduced three types of performance indicators to monitor the implementation of the IDEAS Programme:

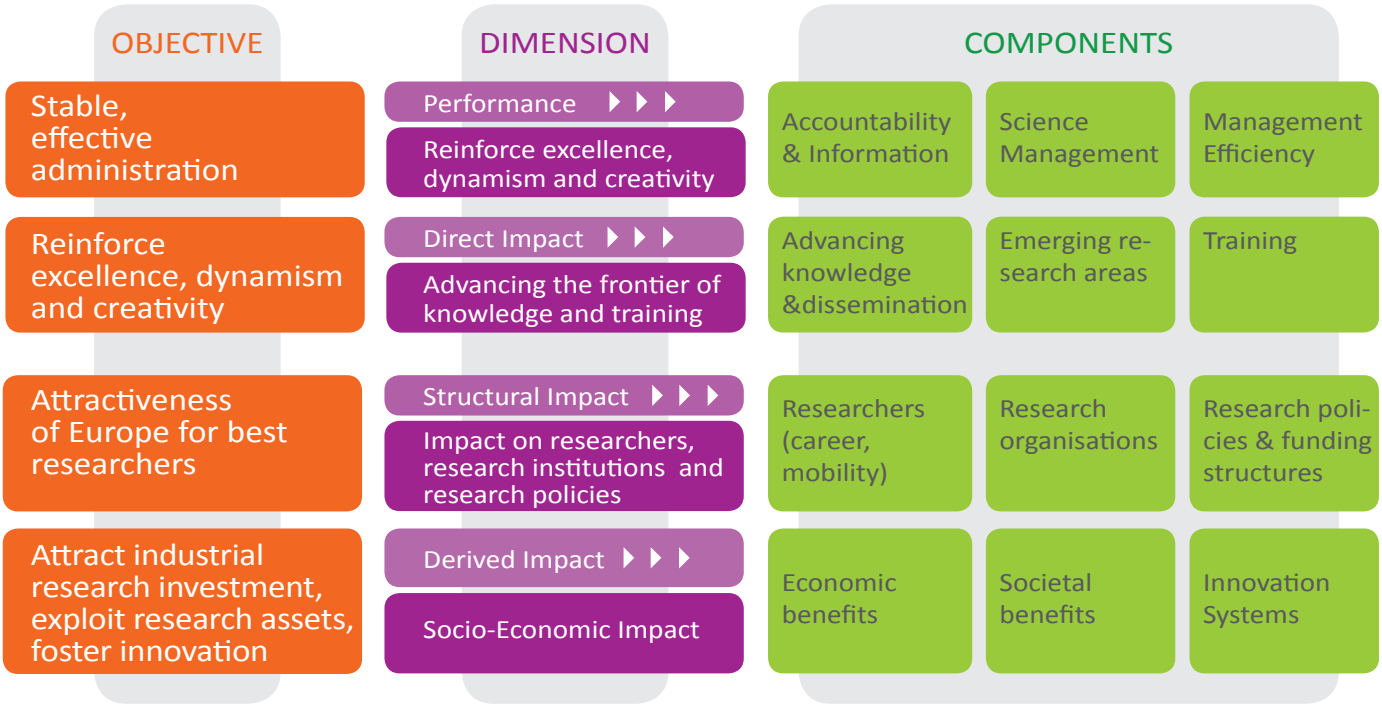
- Quantitative and qualitative indicators charting the course of scientific and technical progress (publications, index of quotations, patents, etc.);
- Management indicators to monitor performance internally and support senior management decision-making (implementation of the budget, setting time limits for the signature of contracts, setting payment deadlines, etc.); and
- Outcome indicators to assess the overall effectiveness of the research in relation to the European Union (EU) headline goals.

In addition, in June 2009 the Scientific Council adopted the ERC Monitoring & Evaluation (M&E) Strategy to monitor the performance of its operations and the impact of its funding activities, to take corrective actions if necessary and to provide comprehensive and reliable information on ERC activities and their impacts. The ERC M&E Strategy is being implemented by the ERC Executive Agency - using internal resources to analyse ERC calls, teams and outputs (bibliometrics) - and also by external experts through the Coordination and Support Action (CSAs) instruments (20 & 21). In this regard, four projects (CSAs) started in 2009:

- **"EURECIA"** analyses the impact of the ERC on researchers, research organisations, funding institutions and policy structures. The two-year project is coordinated by the Manchester Institute of Innovation Research and has eight participants.
- **"MERCI"** investigates the impact on career development, the host institutions, the research structures and the research output. The five-year project is coordinated by the Humboldt University in Berlin.
- **"DBF"** is a 3-year project that provides bibliometric monitoring for the peer review process of the first Starting and Advanced Grant calls. The project participants are the Austrian Research Centres and the CNRS Institute for Scientific and Technical Information in Nancy.
- Finally, **"ERACEP"** identifies emerging research areas and analyses to what extent the ERC funding contributes to these novel fields of research. This five-year project is implemented by the Fraunhofer Institute ISI in Karlsruhe and the University of Leuven.

The ERC M&E Strategy is based on four evaluation dimensions that correspond to the four main objectives of the IDEAS Programme (see Diagram 2).

**Diagram 2**: **ERC Monitoring & Evaluation Strategy**




# ERC Operational Performance: Stable & Effective Administration

## Accountability & Information

- The ERC operates according to the principles of scientific excellence, autonomy, and efficiency. It also puts particular emphasis on the principles of transparency and accountability by establishing a timely and comprehensive information strategy with all relevant stakeholders on the activities and achievements of the ERC as well as on how and where the money goes. This communication and information strategy should be regarded as a best practice that has allowed for a significant increase in ERC visibility as well as in the trust and credibility of the European Scientific community towards the ERC. The ERC has intensified its awareness-raising activities about its funding opportunities, thanks to its involvement at major international research conferences and exhibitions, as well as career fairs and workshops, both within and outside of Europe. It has also developed a new extremely attractive and highly visited ERC website (1) that provides comprehensive information on the ERC, including strategy documents, annual activity reports, summarised minutes of the Scientific Council, in-depth information on each ERC call launched, etc

## Science Management & Management Efficiency

- The ERC has become a recognised success story of the 7th Framework Programme, having established itself as an indispensable component of the European Research Area with a high reputation for the quality and efficiency of its operations. Since its establishment in 2007, the ERC has launched 15 calls for proposals and completed 8 calls for proposals for the Starting and Advanced Grant schemes. The ERC schemes, which have been designed for and adapted to frontier research, have been well received and fully supported by the research community, with over 26.000 applications submitted so far. Meanwhile, the ERC's evaluation procedure is widely accepted as the gold standard in finding and funding the best researchers from all over the world.
- The ERC Executive Agency has set up efficient and fast grant management, which compares favourably with other International funding agencies. The efficient operation of the Starting and Advanced Grant calls as well as the additional funding initiatives entitled 'Proof of Concept' and the ERC Synergy grants underlines the successful organisational development of the ERC Executive Agency, created to implement the IDEAS programme as an integrated constituent of the ERC. In its five years of existence, it has served a population of more than 2.500 excellent scientists and scholars from all over the world to carry out their research in around 470 prestigious research institutions in Europe and has acquired a considerable experience in the management of grants. By the end of 2011, the Executive Agency had managed to consolidate its key performance indicators in relation to grant implementation and had largely met its targets, with the exception of the "time to grant" (the time from the call deadline to the signature of grants) which was short of the target established by the ERC in consideration of international benchmarks. The target was to sign Grant Agreements for at least 75% of grants within 365 days. However, the "time to pay" remained a record with an average of 10 days for pre-financing and 13,6 days for interim payments (14).
- Nevertheless, concerns have been expressed about the long-term sustainability of the ERC's legal and administrative structure. In this sense, the ERC 2009 Review (9) and the Task Force (10) have recommended that the ERC Grant application process be simplified, as well as the procedures related to the way grants are administrated and accounted for (timesheets, audit strategy...), following a funding and a science management philosophy more in accordance with frontier research. In addition, the ERC funding schemes are relatively new and researchers still have problems in understanding and applying the rules for the implementation and the management of ERC Grants. Although host institutions are expected to provide adequate support to PIs on grant management without compromising the scientific independence of grantees, following the Task Force recommendations, the ERCEA has established a PI Helpdesk and has started to offer training to both HIs and PIs on grant preparation and grant management including financial and audit issues.

In 2011, Athens hosted two International Workshops on ERC grant management for HIs and for PIs located in Greece and the surrounding countries (Balkan countries & Cyprus).

# Direct Impact: Reinforce Excellence, Dynamism & Creativity

## Advancing Knowledge

- With the establishment of the ERC, a new meaning for 'European Added-Value' (17) has emerged that is founded on the competition for research funding at European level, solely on the basis of excellence. In this regard, the ERC has provided excellence with a leading role across the European Research Area by detecting, encouraging and channeling resources to the best ground-breaking ideas and the very best promising and established researchers irrespective of age, gender and nationality and from a wider pool than national schemes would allow. A European benchmark of excellence has also been developed that is expected to

increase the quality, attractiveness and competitiveness of the European research system and transform Europe into a world-leading knowledge society.

- The ERC-funded strategy is generating new scientific and technological advances by promoting creativity through an investigator-driven, bottom-up approach, allowing outstanding researchers to identify new opportunities and directions in any field of research with a greater degree of flexibility, and by placing emphasis on the quality and innovative nature of the idea rather than the research area. In this regard, some 4,2 billion € have been granted to groundbreaking, excellent projects in blue-sky research in all fields of science and scholarship, with already more than 3400 publications acknowledging ERC funding in high-impact journals (including Nature and Science). These articles represent significant scientific and technological advances made in different fields of research.

## Dissemination

- The ERC continues its efforts not only to raise awareness of its funding opportunities in the research community, but also to increase the visibility of the ERC and its research projects among the general public and the media. To this end, in 2010 the Executive Agency set up a Dissemination Working Group to monitor and detect interesting projects and good communicators among grant holders. The dissemination of ERC research results is undertaken through all possible communication channels such as the publication of success stories on the ERC website, press releases, institutional journals, videos, the NCP dissemination tools and the new quarterly electronic newsletter called "Ideas".

- In addition, the ERC fully supports the European policy on Open Access in Research (22) and stresses the attractiveness of policies mandating the public availability of research results – in open access repositories – reasonably soon after publication (ideally, 6 months, and in any case no later than 12 months). The Scientific Council has also established a working group on Open Access to issue specific guidelines for the mandatory deposition into open access repositories of research results that have been obtained thanks to ERC Grants.

The National Documentation Centre is a key stakeholder in the developments in Open Access to research at the European level. It coordinates the project MEDOANET, aimed at facilitating coordinated Open Access strategies and policies, and is a partner in the OpenAIRE and OpenAIRE+ projects. The National Documentation Centre operates the National Open Access Desk of OpenAIRE for Greece, assisting Greek ERC grantees to deposit publications resulting from ERC funding in appropriate repositories, and thus to fulfill the relevant obligation undertaken in their Grant Agreement. It also develops and maintains the Greek portal on Open Access, and organises a biennial international conference on the subject. The National Documentation Centre provides large-scale interoperable Open Access content e-Infrastructures to the research and academic community through "The National Information System for Research and Technology" (www.epset.gr), its main developmental funding instrument.

## Emerging Research Areas

- The ERC has also given European exploratory research with a more attractive status and image. Indeed, the ERC activities are directed towards encouraging outstanding researchers to be adventurous, take risks and go beyond the established frontiers of knowledge and the boundaries of disciplines. They comprise the funding of projects not only designed around fundamental research questions but also those developed around well-defined technological challenges. The ERC intends to place European research at the forefront of scientific progress by channeling funds into the emerging, most promising research fields that will be critical for the knowledge society of the future and by supporting the development of centres of excellence in new sectors closely related to world-leading innovation.

## Training Excellent Researchers

- The ERC funds also play a significant role in training graduates and the next generation of excellent researchers in frontier research including novel research methods, advanced instrumentation and groundbreaking techniques. On average, 70% of an ERC Grant is dedicated to personnel costs. In this sense, each ERC grantee has on average a team of 6 members, 5 of which are PhD and postdoctoral researchers. By the end of FP7, around 5000 ERC Grants will have been awarded and the ERC will therefore have supported and trained more than 25.000 doctoral students and postdoctoral researchers in teams led by outstanding emerging and established researchers. This will contribute to the strengthening of Europe's knowledge base in emerging areas undergoing rapid development, and to increasing European research competitiveness and leadership in key innovation sectors.

# Structural Impact: Attractiveness of Europe for Best Researchers

## Researchers: Career & Mobility

- ERC competitions are key instruments in improving researchers' career prospects. They are open to any researcher anywhere in the world who wants to conduct research in an EU Member State or FP7 Associated Country. ERC efforts in this context have focused on retaining top talents and repatriating and attracting outstanding researchers (European and non-European) located in non-ERA countries in order to transform Europe into a world-leading knowledge society. To meet this objective the Scientific Council has delineated a strategy based on the reduction of mobility barriers as well as on the empowerment of researchers by offering attractive funding conditions, the possibility of grant portability and by supporting the early independence of emerging top scientists and scholars.
- A glance at the lists of prestigious research prize laureates' provides a good example of how ERC funding schemes attract top researchers. Many ERC grantees have received prestigious international scientific prizes and awards. To date, the ERC accounts for four Nobel Prize winners and three Field Medallists amongst its grantees, as well as the winners of 30 other internationally recognised prizes. One recent example is the Nobel Prize awarded to Konstantin Novoselov for his work on the production and isolation of grapheme.
- After five years of the ERC, there has been a real but modest success in attracting researchers from third countries. However, this has mainly involved the repatriation, rather than attraction, of non-ERA nationals to the European research system. In addition, the number of applications and ERC grantees from non-ERA countries is still quite limited. To redress this situation, the ERC Scientific Council has established a working group to delineate new strategies to attract more top researchers from third countries and the ERC Executive Agency (ERCEA) has significantly increased the promotion of ERC funding opportunities in countries outside the European Research Area.

## Effects on Research Organisations, Research Policies & Funding Structures

- As a new pan-European competitive funding structure, the ERC has significantly contributed to the establishment of new benchmarks of excellence and competitiveness among European research and innovation stakeholders that should lead to crucial structural changes in the European Research Area. Indeed, it has catalysed changes in strategies, policies, research funding mechanisms and practices of national research systems and individual institutions that should create a more attractive and competitive European research environment and should ultimately lead to the convergence of quality standards across the ERA. Several countries have introduced reforms to their national systems based on the ERC model. In addition, national and regional authorities are analysing their performance on the ERC calls and improving their policies and practices accordingly.

Greece has introduced two funding schemes named "ΑΡΙΣΤΕΙΑ" ("Excellence": "ΑΡΙΣΤΕΙΑ" & "ARISTEIA II") & "ΕΝΙΣΧΥΣΗ ΜΕΤΑΔΙΔΑΚΤΟΡΩΝ ΕΡΕΥΝΗΤΩΝ ΚΑΙ ΕΡΕΥΝΗΤΡΙΩΝ" ("Support to Postdoctoral researchers") inspired in the funding strategy and the proposal structure of the ERC Grant schemes.

- The ERC has also stimulated research organisations to invest more in the support of excellent researchers and in particular in promising new talents as the next generation of research leaders in Europe. In this sense, European universities and research institutions have begun to use their success in ERC calls as a stamp of prestige and excellence and to actively compete for top researchers by offering the most attractive "working" conditions. This is the case at organisations such as Ghent University, Tuebingen Medical Hospital and the Swiss Federal Institute of Technology Zurich, which offers incentives for ERC Grant holders.

In Greece, while there are some organisations that have difficulty with the independence of Starting grantees due to institutional laws, the strategy of the Biomedical Research Foundation at the Academy of Athens should be considered a best practice in supporting promising top talents. In this case, both Starting grantees hosted by the Greek organisation have been offered upgraded positions.

- The ERC's evaluation procedure (18) carried out by top-level international peer reviewers has achieved a high and widespread reputation and constitutes a gold standard for numerous national systems. In this context, several countries have established national initiatives that are complementary to the ERC schemes in that they fund the runners-up in the ERC calls.

Since 2011, Greece has launched a national scheme that funds ERC applicants that applied with a Greek HI, went to second-stage evaluation, reached the quality threshold but were not funded due to budget limitation. The novel initiative uses Structural Funds and has so far been applied to both funding schemes (Advanced and Starting grants) of the ERC-2010 & ERC-2011 calls. The name of the beneficiaries (HIs) that applied to the ERC-2010 Advanced & Starting Grant competitions and have been funded by the national scheme are listed at the website of the General Secretariat for Research & Technology (www.gsrt.gr).

# Derived Socio-economic Impact: Attract Industrial Research Investment, Exploit Research Assets, Foster Innovation

## Economic Benefits, Societal Benefits & Innovation Systems

- The ERC has established itself as an important component of the European research funding mechanism that is expected to play a central role in the new European Innovation Union initiative. As such, the ERC is fully committed to improving the attractiveness of Europe for industrial research investment by rewarding high-risk innovative proposals of the very highest quality that are likely to generate new and unpredictable major scientific and technological discoveries that can form the basis for new industries and markets.

- The excellent exploratory research that the ERC has been supporting since its launch often generates new discoveries, but also unexpected opportunities for commercial and societal applications. The ERC is committed to ensuring the full exploitation of the excellent ideas it funds but also to capturing the maximum value from frontier research. To this end, the ERC is currently looking at the patents submitted by ERC grantees and at the licensing of spin-offs. The patent application is an indicator of innovative research and is also one of the benchmark features included in the profile of a competitive ERC applicant. From 2011, the ERC has also introduced the "Proof of Concept" top-up grants to support the novel ideas generated by ERC projects in their first steps towards the market. Thanks to this unprecedented initiative, the ERC is totally in harmony with the Innovation Union initiative (3) by supporting every link in the innovation chain, from blue sky research (ERC Starting, Advanced and Synergy Grants) to the early commercialisation phase of a novel idea (Proof of Concept Grants).

- The ERC's ultimate aim is to fully develop a knowledge and innovation society in Europe and ensure Europe's global competitiveness and prosperity through the generation of research results that will significantly advance the frontiers of knowledge, help address societal changes and feed into the innovation chain, thus leading to economic growth, the creation of business in emerging sectors, and a better quality of life for European citizens.

At the end of the 7th Framework Programme (2), a more detailed impact of the ERC Grants hosted in Greek Host Institutions will be provided based on publications and patents produced, spin-offs created, personnel/researchers trained, etc.

# 5. The National Documentation Centre as the Greek National Contact Point for the ERC

The National Documentation Centre, EKT, is the national institution for the aggregation, documentation and dissemination of scientific information. Founded in 1980, the organization serves the country's research, education and business communities and the wider public, enabling access to knowledge and facilitating research and innovation.

Greece has a rich heritage and a growing wealth of scientific and cultural output that should be documented and shared to empower citizens, educational institutions, research bodies and businesses. However, there is a need for coordinated strategies to exploit the opportunities that the effective management of public knowledge and digital content can create for societal progress and welfare. EKT relies on technical expertise, long-term vision and effective planning to respond to the needs of an increasingly challenging international environment. In a networked global environment, EKT acts as a strategic partner for the development of e-Science in Greece and abroad. Within this frame, it focuses on expanding an already existing network of domestic and international alliances – an essential building block for the European Research Area – and encourages investments – a basic precondition for a viable and sustainable digital content policy which complies with European standards for transparency in public information, preservation and interoperability.

At EKT, scientific content e-infrastructures embrace technological innovation to fulfill its main mission of aggregating, documenting, storing and preserving digital content and disseminating it openly to the public in a way that promotes growth, research and innovation. Placing emphasis on multi-directional content reuse, EKT develops enabling factors for the creation, use and growth of digital content in the entire lifecycle of digital content.

Access to knowledge lies at the heart of EKT's activities. The organization is a strong supporter of open access as a means for social and economic development and is at the forefront of national and international open access initiatives that support the development and implementation of relevant policies for scientific and cultural data.

Strategic priorities at EKT are structured around digital information: at the level of technological infrastructure which lies at the heart of content creation, at the level of content development, and finally at the level of its dissemination and reuse according to the principles of open access.

Based on highly qualified staff and cutting-edge technology, EKT empowers access to and the growth of knowledge through open content and related services, facilities, digital resources, software and collaboration tools. Following global technological trends and advances, EKT continuously incorporates new flexible models for the delivery of content and software systems as user-oriented services for research and innovation.

Open Content through Repositories, e-Journals & Digital Libraries: Open access digital repositories at EKT offer more than 4.500.000 pages of scientific information, which are continuously enriched to cover all scientific disciplines. EKT has the legal mandate to maintain the National Archive of PhD Theses, which is available as an open access repository and provides access to the full text of over 18.500 doctoral theses. As a result of strategic co-operations with scientific editors and cultural institutions, EKT's ePublishing environment is based on open source software. It integrates emerging technologies and applies international standards of interoperability at all levels – data organization, preservation and services. Today, EKT seals its longstanding co-operation with public libraries in Greece by organizing and making available online their rich archives in a user-friendly digital repository environment with advanced navigation functions.

National Services for Library Organization: Aiming to modernize, upgrade and build networks across libraries, museums and archives, EKT develops software tools (e.g. ABEKT Library Automation Software, union catalogues, facilities and services for digital repositories and public libraries, search engines, digital applications in culture, The Thesaurus of Greek terms of general content, The Greek Edition of the Dewey Decimal Classification System, etc.) and provides e-publishing services for the country's cultural and academic institutions. The Union Catalogue of Serials of Greek Journals, the Argo environment for access to bibliographic information sources from all over the world and the Digital Library for Science and Technology are only a few of the country's major bibliographic databases with valuable and unique collections of scientific and technical libraries that areconstantly updated.

Mapping research activity in Greece: Based on research documentation, expertise in human resources and robust technological solutions, EKT undertakes projects related to the mapping of research activity in Greece. At regular intervals, EKT publishes reports on scientific indicators based on scientific publications (bibliometrics), research activity (scientometrics), the use of informational web data and resources (webometrics). These studies are used by a variety of national and international public bodies, research institutions, universities and policy makers as reference tools. Current Research Information Systems (CRIS) are typically used as a basis for the organisation of the data that leads to the calculation of such indicators. EKT is a member of the Board of EuroCRIS, participating in the development of the EU-recommended CERIF data model.

Developing e-Infrastructures: EKT currently addresses the need for the development of a high performance national research e-Infrastructure based on virtualised computing resources and an interconnected national Grid. The content, tools, services and other tangible and intangible resources accrued by EKT through years of development contribute towards the establishment of regional and international networks that link up interoperable national infrastructures across the world. They are based on models of open source software and current models for the distribution of services (Software as a Service Cloud) that adhere to the principles of Green IT. EKT's Datacenter hosts high performance national Grid nodes and the high speed network systems interconnecting the Greek NREN – GRNET – with GEANT.

Promoting research and innovation: Since 1998, EKT has been acting as National Contact Point for the Framework Programmes of the EU (FP5, FP6,FP7) as well as other European and National RTD programmes, providing comprehensive information and support to Greek research teams. Furthermore, through its capacity as the Coordinator of the Enterprise Europe Network-Hellas, EKT serves as a strong liaison for businesses, especially SMEs, seeking to become involved in research projects. With a view to promote research results and facilitate innovation, EKT maintains more than 30 web portals, electronic editions and newsletters dedicated to "Innovation, Research and Technology" as well as a widely circulated print magazine.

Currently, EKT operates as National Contact Point for the following programmes of FP7: Health, Information & Communication Technologies, Energy, Socio-economic Sciences and Humanities, IDEAS, PEOPLE, Research Infrastructures, Regions of Knowledge and Research Potential. Specialised services are provided for the academic, scientific & business communities, such as:

- Up-to-date information on a website dedicated to FP7 (www.ekt.gr/fp7) with more than 350 webpages that account for more than 4.000 unique users and more than 7.000 visits per month.
- Efficient problem-solving through an e-Helpdesk (http://helpdesk.ekt.gr/fp7)
- Information and consultation through information days and bilateral face-to-face meetings
- Pre-screening of proposals
- Partner-searching across Europe.

# Activities & achievements

As National Contact Point for the European Research Council and the IDEAS programme. EKT's activities and major achievements during the period 2007-2011 have been:

## Support for applicants of the ERC calls from 2007 to 2011:

- More than 1.800 queries have been submitted to EKT
- More than 170 bilateral meetings between the ERC NCP team and potential Greek applicants have taken place
- Through its ERC NCP services and activities, EKT has assisted at least 13 out of the 24 applicants that ultimately received ERC funding in Greece

**The organisation of information days and workshops:** Since the launch of the 7th Framework Programme, EKT has organised 34 events including information on the ERC calls, 13 of which were fully dedicated to the ERC and the IDEAS programme. The information days and workshops have taken place all over Greece (Athens, Patras, Chania, Heraklion, Ioannina, Volos, Thessaloniki, Xanthi, Alexandropouli, Mitilini) in collaboration with major Greek R&I stakeholders (see table 9).

- The first dedicated ERC event was organised in January 2007 at the National Hellenic Research Foundation and was graced with the presence of Prof. F. Kafatos (first ERC president) as keynote speaker. The event promoted and informed about the first ERC call launched (ERC-2007-StG) and had more than 350 participants.
- Since 2010, EKT has organised dedicated workshops for the IDEAS programme with the major involvement of the Greek ERC community consisting of evaluators, successful applicants, National representatives and Dr Theodore Papazoglou of the European Research Council Executive Agency (ERCEA).
- In collaboration with the ERCEA, EKT organised at its premises two International workshops on Grant Management, one for Principal Investigators (13/10/2011) and one for Institutions hosting grantees of the IDEAS Programme (14/10/2011). Greek ERC grantees attended the PI workshop to learn how to efficiently and effectively implement their grants whereas the legal & financial departments of the Greek institutions hosting ERC grantees were provided in-depth information on grant preparation, financial management and audit issues.
- EKT follows an open access information strategy on the events organised/co-organised. All events taking place at the National Hellenic Research Foundation are videotaped and live-broadcasted, with the presentations and videos (where applicable) made available from the repository of the National Hellenic Research Foundation (http://helios-eie.ekt.gr/EIE). In this regard, a significant archive of presentations and videos with advice on how to write a successful proposal for the IDEAS Programme has been built up over the years and is available for future applicants.

**Continuous communication and collaboration with the ERC National Representatives and experts in Greece:** EKT organised and/or assisted 16 meetings with ERC National Representatives, experts and other relevant R&I stakeholders in Greece in order to provide feedback on the ERC NCP Meetings organised by ERCEA, information on past and future calls, annual reports on activities and services as the Hellenic ERC NCP as well as detailed report including an overview of Greece's participation (statistical analysis, metrics on Greek submissions, success rates and funding per ERC call). As major outcomes of this collaboration, the National Documentation Centre:

- Provided detailed feedback and comments on the draft ERC Grant Agreement at the beginning of FP7,

- Was actively involved in the development of the national calls for proposals using structural funding to fund the runners-up of the 3rd and fourth call of the ERC Starting and Advanced Schemes
- Supported ERC grantees. Special mention should be made of the assistance requested by the MEDIGRA team upon the unfortunate death of Professor Vardoulakis. In collaboration with the National representatives and the General Secretariat for Research and Technology, EKT requested the ERCEA to provide a transitional solution so as to avoid the sudden termination of the grant.

## Awareness and communication activities among the general public and the media.

Since the launch of FP7, EKT has intensified its awareness-raising activities all over Greece, not only through the organisation of ERC information days but also through the publication of numerous articles in EKT's electronic newsletter «Ερευνα & Καινοτομία» (Research & Innovation, published every two weeks) and EKT's bimonthly magazine «Καινοτομία, Έρευνα και Τεχνολογία» (Innovation, Research & Technology). Particularly noteworthy items are: the interview with the first president of the European Research Council, Prof. F. Kafatos; a cover article on the European Research Council; the article on the first Starting grantees in Greece; and the promotion of the new ERC funding scheme 'Proof of Concept', among others.

Thanks to the efforts of previous years, the ERC's visibility has considerably increased, as witnessed by a growing number of articles in the media (printed and electronic press), and the number of visits to the ERC website made from Greece (from 2007 to 2011, Greece was positioned in the top ten). Press activities have resulted in a good number of articles in both the scientific and more general press and in many press releases and updates disseminated to the media on ERC activities and achievements including information on funding schemes, calls, ERC funded projects, and ERC grantees hosted in Greek research institutions.

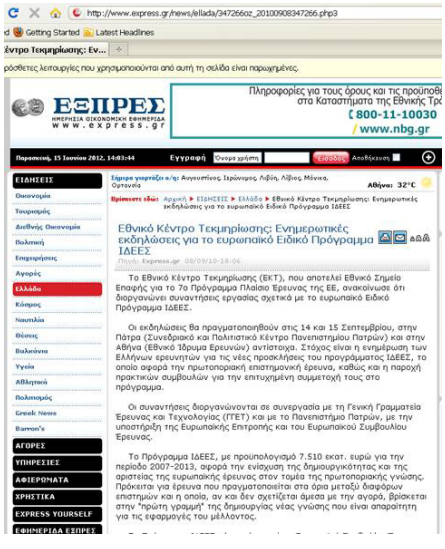
**Εκδηλώσεις για το ευρωπαϊκό πρόγραμμα «Ιδέες»**

Συναντήσεις εργασίας για το ειδικό πρόγραμμα «Ιδέες» στις 14 και 15 Σεπτεμβρίου 2010, στην Πάτρα (Συνεδριακό και Πολιτιστικό Κέντρο) και την Αθήνα (**Εθνικό Ίδρυμα Ερευνών**), αντίστοιχα διοργανώνει το **Εθνικό Κέντρο Τεκμηρίωσης (ΕΚΤ)** εθνικό σημείο επαφής για το 7ο πρόγραμμα πλαίσιο έρευνας της ΕΕ. Σημειώνεται ότι οι Ευρωπαίοι ερευνητές υποδέχτηκαν με ενθουσιασμό την ευρωπαϊκή αυτή πρωτοβουλία και τα δύο πρώτα χρόνια υποβλήθηκαν περίπου 15.000 προτάσεις για χρηματοδότηση. Μέχρι σήμερα, έχουν επιλεγεί 800 ερευνητικά έργα άριστων επιστημόνων και έχουν υπογραφεί 600 συμβόλαια με συνολική χρηματοδότηση 900 εκατ. ευρώ. 11 από τα έργα αυτά έχουν επιλεχθεί να πραγματοποιηθούν στην Ελλάδα. Στόχος των εκδηλώσεων είναι η ενημέρωση των Ελλήνων ερευνητών για τις νέες προσκλήσεις του προγράμματος «Ιδέες», που αφορά στην πρωτοποριακή επιστημονική έρευνα και η παροχή πρακτικών συμβουλών για την επιτυχημένη συμμετοχή τους στο πρόγραμμα.

Οι συναντήσεις εργασίας διοργανώνονται σε συνεργασία με τη Γενική Γραμματεία Έρευνας και Τεχνολογίας και το Πανεπιστήμιο Πατρών (η εκδήλωση στην Πάτρα) και με την υποστήριξη της Ευρωπαϊκής Επιτροπής και του Ευρωπαϊκού Συμβουλίου Έρευνας.

**ΕΚΤ: Συναντήσεις εργασίας για το ειδικό πρόγραμμα «Ιδέες»**

Εκδηλώσεις στην Αθήνα και την Πάτρα για την επιστημονική έρευνα



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ΕΞΠΡΕΣ

Εθνικό Κέντρο Τεκμηρίωσης: Ενημερωτικές εκδηλώσεις για το ευρωπαϊκό Ειδικό Πρόγραμμα ΙΔΕΕΣ

More detailed information can be found in the online Report on activities and services provided by EKT as National Contact Point for the 7th Framework Programme, covering the period 2007 to 2011 (http://www.ekt.gr/about/ncp_reports/EKT_FP7NCP_Report2011.pdf)

**Table 9** : **Events on the ERC organised/co-organised by EKT in Greece**

| Number | Date of event | Type of event | Event's dedicated webpage | Organisers/co -organisers | Number of participants | FP7 programmes addressed |
|---|---|---|---|---|---|---|
| 1 | 22/09/2006 Thessaloniki | Infoday | http://www.ekt.gr/news/events/ekt/2006-09-22/index.html | Aristotle University of Thessaloniki, EKT | 110 | IDEAS (ERC) & other FP7 programmes |
| 2 | 02/11/2006 Patra | Infoday | | University of Patra, EKT | 108 | IDEAS (ERC) & other FP7 programmes |
| 3 | 05/12/2006 Heraklion (Crete) | Infoday | http://www.ekt.gr/news/events/ekt/2006-12-05/index.html | University of Crete, EKT | 108 | IDEAS (ERC) & other FP7 programmes |
| 4 | 18/01/2007 Athens | Infoday | http://www.ekt.gr/news/events/ekt/2007-01-18/index.html | EKT – Key note speaker: President of the ERC Prof.. F. Kafatos | 362 | IDEAS (ERC) |
| 5 | 20/03/2007 Ioannina | Infoday | http://www.ekt.gr/news/events/ekt/2007-03-20/index.html | University of Ioannina, EKT | 120 | IDEAS (ERC) & other FP7 programmes |
| 6 | 23/03/2007 Mitilini (Lesbos) | Infoday | http://www.ekt.gr/news/events/ekt/2007-03-23/index.html | University of Aegean, EKT | 100 | IDEAS (ERC) & other FP7 programmes |
| 7 | 29/03/2007 Thessaloniki | Infoday | http://www.ekt.gr/news/events/ekt/2007-03-29/index.html | University of Macedonias, EKT | 110 | IDEAS (ERC) & other FP7 programmes |
| 8 | 29/05/2007 Heraklion, Crete | Infoday | http://www.ekt.gr/news/events/ekt/2007-05-29/index.html | University of Crete, EKT | 100 | IDEAS (ERC) |
| 9 | 31/05/2007 Athens | Infoday | http://www.ekt.gr/news/events/ekt/2007-05-31/index.html | EKT | 136 | IDEAS (ERC) |
| 10 | 12 /06/2007 Athens | Seminar | | EKT | 40 | IDEAS (ERC) & other FP7 programmes |
| 11 | 21/09/2007 Chania, Crete | Infoday | http://www.ekt.gr/news/events/ekt/2007-09-21/index.html | Technical University of Crete, University of Crete, Mediterranean Agronomic Institute of Chania, EKT | 99 | IDEAS (ERC) & other FP7 programmes |
| 12 | 04/02/2008 Volos | Infoday | http://www.ekt.gr/news/events/ekt/docs/event4Feb08_agenda.doc | University of Thessaly, EKT | 52 | IDEAS (ERC) |
| 13 | 05/02/2008 Athens | Infoday | http://www.ekt.gr/news/events/ekt/docs/event5Feb08_agenda.doc | National & Kapodistrian University of Athens, EKT | 75 | IDEAS (ERC) |
| 14 | 06/02/2008 Heraklion, Crete | Infoday | http://www.ekt.gr/news/events/ekt/docs/event06Feb08_agenda.doc | Foundationfor Research & Technology Hellas, EKT | 63 | IDEAS (ERC) |
| 15 | 11/04/2008 Athens | Infoday | http://www.ekt.gr/news/events/ekt/2008-04-11/index.html | EKT | 67 | IDEAS (ERC) |
| 16 | 16/04/2008 Xanthi | Infoday | | Democritus University of Thrace, EKT | 43 | IDEAS (ERC) & other FP7 programmes |

| Number | Date of event | Type of event | Event's dedicated webpage | Organisers/co -organisers | Number of participants | FP7 programmes addressed |
|---|---|---|---|---|---|---|
| 17 | 17/04/2008 Alexandroupoli | Infoday | | Democritus University of Thrace, EKT | 35 | IDEAS (ERC) & other FP7 programmes |
| 18 | 04/07/2008 Athens | Infoday | http://www.ekt.gr/news/events/ekt/2008-07-04/index.html | EKT, EOMMEX | 85 | IDEAS (ERC) & other FP7 programmes |
| 19 | 15/09/2008 Patra | Infoday | International Workshop Nanomedicines - Galenos Thematic Workshop "FP7-ideas: Starting Grants" | University of Patra | 54 | IDEAS (ERC) & other FP7 programmes |
| 20 | 30/10/2008 Athens | Infoday | http://www.ekt.gr/news/events/ekt/2008-10-30/index.html | EKT | 179 | IDEAS (ERC) & other FP7 programmes |
| 21 | 31/10/2008, Thessaloniki | Infoday | http://www.ekt.gr/news/events/ekt/2008-10-31/index.html | University of Macedonia, EOMMEX, PRAXE, NCSR Demokritos, EKT | 76 | IDEAS (ERC) & other FP7 programmes |
| 22 | 08/12/2008 Ioannina | Infoday | http://www.ekt.gr/news/events/ekt/2008-12-08/index.html | University of Ioannina, EKT | 53 | IDEAS (ERC) & other FP7 programmes |
| 23 | 25/09/2009 Athens | Infoday | http://www.ekt.gr/news/events/ekt/2009-09-25/index.html | Panteion University, EKT | 59 | IDEAS (ERC) & other FP7 programmes |
| 24 | 30/10/2009 Athens | Seminar | http://www.ekt.gr/news/events/ekt/2009-10-30/index.html | Greek Association Cardiovascular Research, EKT | 12 | IDEAS (ERC) & other FP7 programmes |
| 25 | 13/11/2009 Athens | Infoday | http://www.ekt.gr/news/events/ekt/2009-11-13/index.html | NCSR Demokritos, EOMMEX, EKT | 56 | IDEAS (ERC) & other FP7 programmes |
| 26 | 20/01/2010 Athens | Workshop | http://www.ekt.gr/news/events/ekt/2010-01-20/index.html | EKT | 89 | IDEAS (ERC) |
| 27 | 26/03/2010 Athens | Conference | http://www.eie.gr/nhrf/institutes/ibrb/news/3rdSwed-HellConfProgr2010.pdf | NHRF | 35 | IDEAS, PEOPLE |
| 28 | 14/09/2010 Patra | Workshop | http://www.ekt.gr/news/events/ekt/2010-09-14/index.html | University of Patras, EKT | 47 | IDEAS (ERC) |
| 29 | 15/09/2010 Athens | Workshop | http://www.ekt.gr/news/events/ekt/2010-09-15/index.html | EKT | 81 | IDEAS (ERC) |
| 30 | 11/10/2010 Athens | Infoday | http://www.ekt.gr/news/events/ekt/2010-10-11/index.html | Athens University of Economics and BUsiness, EKT | 68 | IDEAS (ERC) & other FP7 programmes |
| 31 | 01/07/2011 Chania (Crete) | Infoday | | Technical University of Crete , EKT | 40 | IDEAS (ERC) & other FP7 programmes |
| 32 | 10/10/2011 Athens | Workshop | http://www.ekt.gr/news/events/ekt/2011-10-10 | EKT | 74 | IDEAS (ERC) |
| 33 | 13/10/2011 Athens | Seminar | | ERCEA, EKT | 31 | IDEAS (ERC) |
| 34 | 14/10/2011 Athens | Seminar | | ERCEA, EKT | 34 | IDEAS (ERC) |

# 6. ERC & Horizon 2020

The European Union and many of its Member States, including Greece, are confronting one of the most severe economic and financial crises in their recent history. In this context the Europe 2020 Strategy for Jobs and Growth (23) was approved earlier in 2010. The Europe 2020 Agenda for delivering smart, sustainable and socially-inclusive growth wants to strengthen the "knowledge triangle" formed by the policies for research, education and innovation in such a way as to place knowledge at the service of economic, social and environmental progress. In this sense, the Innovation Union (3) - a flagship initiative within the Europe 2020 Strategy - has been established to strengthen every link in the Innovation Chain, from the frontier or blue sky research to the successful transfer of such research into commercial products and services.

Despite many achievements and a high level of performance in a large number of fields, Europe is not making the most of its research potential and resources. Europe's performance in excellent frontier research lags well behind the USA and faces increasing competition from fast-developing Asian countries. The innovation performance of the European economy has also declined in recent years. Indeed, there is an urgent need for improvement as shown by indicators relating to the numbers of technologically-based start-ups, the propensity of established firms to innovate, and the emergence of new sectors arising from the development of new technologies. Therefore, Europe urgently needs to strengthen its capacity to generate knowledge and translate such knowledge into greater economic competitiveness and well-being.

In order to redress such a situation, the European Commission has proposed a substantial change in EU research and innovation funding, bringing together current research and innovation programmes (i.e FP7, the Competitiveness and Innovation Programme, and the European Institute of Innovation and Technology) into a single strategic framework to fund the whole innovation cycle. Horizon 2020 (24) – the new funding programme for research and innovation – was announced by the EC on 30th November 2011 (25) and needs to be adopted by the European Parliament and Council before the end of 2013. It will run from 2014 to 2020 with a proposed total budget of 80 billion €. Horizon 2020 aims to make participation easier, to increase scientific and economic impact and to provide better value for money. It will seek the right balance between fundamental and applied research and between a top-down approach, where goals are fixed in advance, and a bottom-up approach, where research themes are not pre-determined.

Horizon 2020 is structured around three distinct but mutually reinforcing pillars, in line with Europe 2020 priorities and in support of the Innovation Union's commitments that include a greater focus on societal challenges, a strengthened approach to SMEs and stronger support for the market uptake of innovation through procurements, standards-setting as well as loan and equity financing.

- The first Pillar, "Excellent Science" will support the EU's position as a world leader in science with a dedicated budget of € 24,6 billion and includes the European Research Council (ERC), together with Marie Curie Actions, Future and Emerging Technologies (FET) and Research Infrastructures.

- The second pillar, "Industrial Leadership" will be dedicated to supporting industrial participation in research through major investment in key technologies, and greater access to capital and support for SMEs.

- The third pillar, "Societal Challenges" will respond directly to challenges identified in Europe 2020 by providing funds to address major concerns shared by all Europeans. The focus will be on collaborative and multidisciplinary research projects of significant scope.

The ERC will have a determinant role in Horizon 2020 and particularly under the 'Excellence in the science base' element of the programme where the funding approaches are science-driven and largely bottom-up and investigator-initiated. The proposed budget for the ERC under Horizon 2020 from 2014 to 2020 is €13,2 billion which represents a significant increase in funding of 77%. Indeed, the ERC has been recognized as the success story of the 7th Framework Programme. In a remarkably short time the ERC has gained widespread recognition as a world-class research funding agency, it has succeeded in attracting & funding world-class research, and it has strengthened the ERA by providing a more attractive status and image for frontier research and by empowering the best brains in Europe while also attracting talent from abroad.

The ERC has also gained a central place in Europe 2020 and in the Innovation Union Strategy for promoting Europe's economic recovery, global competitiveness and social prosperity. Indeed the ERC strategy promotes competitive funding of excellent, curiosity-driven ideas as a key instrument to advance in all fields of science, engineering and particularly in new and rapidly emerging areas which are closely associated with world-leading innovation, and support these novel ideas in the first step towards the market place.

The ERC fully supports the EC in its objective to create "an ERA in which researchers, scientific knowledge and technology circulate freely" by 2014 and agrees that there is an urgent need to improve career prospects for researchers, to develop and maintain pan-European research infrastructures and the desirability of more open access, but presently stresses the need for an ERA that should reach a balance between funding based on co-ordination and merit-based competition in a curiosity-driven bottom-up mode (26).

In the frame of Horizon 2020, the ERC will continue to support and recommend policies to foster the empowerment of researchers, especially the younger ones that represent the next generation of research leaders in Europe, but will also focus on increasing the involvement of industry in ERC funding schemes and attracting and repatriating more top talents from non-ERA countries. In this sense, the Scientific Council's Working Group on the 'ERC Internationalisation Strategy' has proposed the further simplification of the ERC Work Programme, with a specific focus on applicants from outside the ERA, by giving emphasis on the possibility for non-ERA grantees to obtain additional financial resources to cover 'start-up' costs (already included in the Work Programme), for flexibility in implementing the requirement that 50% of working time must be spent on an ERC project, as well as the possibility to involve additional team members from outside the ERA as an opportunity to recruit researchers from the best research institutions worldwide. In this context, a new initiative (27) was launched in July 2012 to help young top talent, based in the U.S. and pre-selected by the National Science Foundation (NSF), to spend some time in Europe, hosted as members of ERC grantees' teams.

In the timeframe of Horizon 2020, some structural, governance and implementation changes have been recommended to the ERC such as an improved Executive Agency structure, with a stronger role for the agency director, a quasi-full-time Brussels-based ERC President, and the abolition of the post of ERC Secretary General (10). In the longer term, but certainly not before the mid-term of the Horizon 2020 programme, it may be necessary to reconsider the possibilities offered by Art 182(5) of the Treaty. Other recommendations call for simplification, greater flexibility and more harmonized procedures for applying for, and managing, ERC Grants in order to make ERC funding more attractive and easy to access for excellent researchers all over the world. It has also been indicated that the funding should be more in accordance with the nature of frontier research on a highly flexible basis as grants in aid rather than as implied contracts. Certainly, in high-risk research the Principal Investigator must be able to change course and adjust the scientific approach according to what is learnt during the project.

In a country where the Gross Domestic Expenditure on Research & Development (as a percentage of GDP) is 0.58% (Eurostat, 2007) - among the lowest in the European Union - the challenges faced by the Greek Research & Innovation system are tremendous. Indeed, European countries going through a long recession tend to further decrease their public investment in R&I, leading to a wider innovation divide between the Member States (28).

The ERC strategy of placing excellence and bottom-up frontier research at the heart of the European research systems should act as an inspirational goal for the Greek national research efforts. Boosting the budget dedicated to top-rate researchers - and especially younger talents that can be offered a long-term perspective – and their pioneering ideas are key instruments for stimulating competitiveness and growth and the Greek economic recovery. In this sense, Greece should streamline the level of public research funding for universities and research organisations dedicated to competitive, merit-based, investigator-driven, exploratory research so as to strengthen its capacity to generate knowledge and innovation and translate them into greater economic competitiveness and well-being.

Based on the Innovation Union 2011 report (29), Greece should increase its R&D budget through the allocation of Structural Funds to Research & Innovation and improve its R&I governance structures. It should also establish a strategic R&I agenda that prioritises expenditure on research addressing societal challenges, on education and on key R&I infrastructures. There is also an urgent need to delineate better financial measures for Research and Innovation, in particular through R&D tax incentives, and different forms of support for innovative SMEs, including venture capital and other instruments such as public procurement.

Greece is suffering a tremendous brain drain of young research talents. Outstanding younger researchers want to work with leading scientists and scholars and tend to go to excellent research centres in their fields. However, in order to better face the crisis, Greece needs to improve its knowledge-based society by attracting and retaining more leading researchers, providing scientists and scholars with appealing career prospects, better skills (specially for the business sector), removing obstacles to their mobility across sectors and countries and improving the links between research, education and industry (innovation).

Greek research institutions should make use of the available administrative and legal options in a flexible way or adapt them so as to guarantee the scientific independence of young top researchers and make provision for a competitive working environment that is equally attractive for nationals and non-nationals. To this end, and considering its enormous archeological heritage, Greece should aim to become one of the hosting countries of International top talents in this field.

In 2012 the Commission is launching an initiative to implement a user-driven multidimensional university ranking and transparent information tool, with first results expected in 2013. In this regard, Greece should encourage universities and research organisations to make very special efforts to attract, repatriate and retain excellent scientists and scholars as the main tool for increasing the quality of their research and their attractiveness, their ranking position at International level and to avoid a bigger gap between them and those Member States that lead the EU Research & Innovation (R&I) landscape. Indeed, excellent young talents are to become the Greek research leaders of the future, and will represent the core of the new national research & technological units of excellence. In this context, Greece could follow the best practices of countries such as Ireland that provides economic incentives (from the Structural Funds) to the organisations hosting ERC grantees.

Ground-breaking research and innovation also require world-class research infrastructures. The Innovation Union aims to complete or launch the construction of 60% of the priority European research infrastructures identified by the European Strategy Forum for Research Infrastructures (ESFRI) by 2015. With a view to redressing the existing and widening gap in research capability, the Scientific Council has suggested the development of strong research programmes funded through Structural Funds (European Regional Development Fund - ERDF) that could exploit a significant part of the investment in research infrastructures. An increase in the quality of research infrastructures and the quality of their management, combined with an increase in the resources channeled into the best researchers and innovative ideas would greatly increase the quality - in terms of competitiveness and attractiveness - of the national research systems of lesser-performing R&I countries such as Greece.

Greece has much to gain by offering a more creative, attractive and competitive environment - based on the successfully tested ERC model - in which Research and Innovation can flourish. In this regard, Greece should aim to attract, retain and repatriate top talent, support and finance the development of established and emerging Greek centres and units of excellence, prioritise R&I investments based on excellence and curiosity-driven exploratory research, and finally, take the practical, concrete steps necessary to translate into positive action those existing political commitments that are aimed at boosting the effectiveness of the Greek R&I system.

# 7. Annex - Sources of Information


1. The ERC website: http://erc.europa.eu
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