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Press release

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Turning frontier research into innovation: ERC funds 33 new projects

The European Research Council (ERC) has today announced that 33 top researchers receive up to €150,000 each to bridge the gap between their pioneering ‘blue sky’ research and marketable innovation. These ‘Proof of Concept’ grants are open to scientists who already hold ERC grants. The funded projects cover topics in domains as varied as neurosciences, engineering, and architecture and human rights. One researcher, for instance, explores ways to develop a tablet PC, which could be used by both clinicians and family members to detect consciousness after coma in real-time; another one aims to commercialise flexible and stretchable electronics to equip energy efficient and eco-friendly vehicles.

Not only applied research, but occasionally also ‘blue sky’, basic science – the type of research that the ERC supports - can generate unexpected opportunities for applications. With its ‘Proof of Concept’ scheme, the ERC enables the full exploitation of the excellent ideas it funds. This top-up funding can cover activities aimed at commercial and societal applications, such as intellectual property rights, investigation of commercial and business opportunities or technical validation.

Commissioner for Research, Innovation and Science Máire Geoghegan-Quinn said: *“The European Research Council’s ‘Proof of Concept’ initiative has already helped over 140 researchers to test the market potential of their ERC-funded frontier research. Bringing the best ideas to market is what will keep Europe competitive, and that in turn means jobs.”*

ERC President Professor Helga Nowotny commented: *“Despite the small part of the ERC budget put into the ‘Proof of Concept’ scheme, it represents an important step towards innovation. It encourages links between ideas that turn up in fundamental research and the opportunities offered by taking them further towards market. The increase in demand for these grants is a positive signal showing that ERC-funded researchers are ready to contribute towards societal benefits. This mindset and openness is needed in Europe.”*

This first set of grants of this call goes to researchers across 15 countries. A total of 145 proposals were submitted to the call and the success rate is around 24%. The budget of the entire call is €10 million, of which nearly €5 million go to this first round. The funding is for up to one year per project.

The second and final deadline of the ‘Proof of Concept’ 2013 call for proposals, open to ERC grant holders, is **3 October 2013**.

- [List of the 33 selected researchers](#) by country of host institution



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Examples of projects selected for 'Proof of Concept' (PoC) funding in this call

Social Sciences and Humanities (SH)

A digital tool for collaborative mapping and advocacy

From the reconstruction of the deadly drift of a migrants' boat in the Mediterranean to the analysis of covert drone strikes via satellite imagery, the research conducted with the ERC Starting grant "FASLW" has shown the efficiency of using advanced mapping techniques to investigate, report, and raise public awareness around human rights violations. With the awarded PoC grant, the multi-disciplinary research team, led by Prof. Eyal Weizman, will create a new web-based tool to make digital mapping and data visualisation widely accessible to non-expert users. The MAPP platform will offer a new way of communicating. It will make it possible to aggregate information in all possible formats (text, image, audio, video), to assign it with spatial and temporal coordinates, and to share the visual results. Its wiki function will allow remote users to upload additional data and to build live maps of on-going conflicts and crises. MAPP will initially be developed for use by human rights organisations with the hope to extend it to individual eye-witnesses, reporters and citizens. It could then turn into a new key tool used in education, journalism, activism and public debates.

ERC grantee: Eyal Weizman

Host institution: Goldsmiths, University of London, United Kingdom

ERC projects:

FORENSIC ARCHITECTURE: The Space of Law in War (FASLW)

Media Aggregation and Plotting Platform (MAPP)

ERC funding: €1.2 million Starting grant 2010 for four years + €150,000 PoC grant 2013

Life sciences (LS)

An automatic way to detect consciousness after coma

Each year, thousands of patients lapse into coma, vegetative or minimally conscious states. These persons may spend months or even years in an apparent vegetative state, whilst in reality some of them may have periods of consciousness. Stanislas Dehaene receives a PoC grant to commercialise two distinct services to monitor consciousness in these extreme cases. The first idea is to develop a prototype for a web server available for all clinicians and not only for the most experienced ones, which would provide an automated analysis of electro-encephalographic (EEG) recordings. The second tool is a tablet PC, connected to scalp electrodes and to an EEG amplifier, which would be used by clinicians and family members alike for real-time analysis. This project derives from research funded through an ERC Advanced grant, which Prof. Dehaene obtained in 2009 to clarify the brain architecture for conscious and non-conscious processing, including in altered states of consciousness such as sleep and anaesthesia.

ERC grantee: Stanislas Dehaene

Host institution: Commissariat à l'Energie Atomique et aux Energies Renouvelables, Paris, France

ERC projects:

Converging Criteria for Consciousness: Using neuroimaging methods to characterize subliminal and conscious processing (NEUROCONSC)

Automatic detection and monitoring of consciousness (CoMonin)

ERC funding: €2.4 million Advanced grant 2009 for five years + €150,000 PoC grant 2013

Nanodrugs for targeted treatments of cancer

Most conventional therapies to treat cancer are limited. Only a small proportion of the drugs reaches the targeted tissues and a large share of them have severe toxic effects on the healthy tissues. By developing robust nanocarriers, George Kordas has shown that his nanocarriers are able to encapsulate and protect anticancer drugs from degradation when passing through the bloodstream and that they can unload the drugs to the target tissue in a more efficient way. The drug delivery market, estimated at €700 million with an annual growth rate of 10%, is also a rapidly growing part of



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the pharmaceutical sector. The first tests conducted by Kordas and his team were nontoxic to mice, so with this new PoC grant, they aim at obtaining *in vivo* evidence of the added-value of their nanocarriers for the delivery of anti-tumour and anti-bacterial drugs.

ERC grantee: George Kordas

Host institution: National Center for Scientific Research "Demokritos", Greece

ERC projects:

A Novel Nano-container drug carrier for targeted treatment of prostate cancer (NANOTHERAPY)

Novel Nanocontainer drug carrier for targeted treatment of cancer (NANOTHERAPY)

ERC funding: €2 million Advanced grant 2008 + €150,000 PoC grant 2013

Physical Sciences and Engineering (PE)

A drive towards flexible and stretchable electronics for greener mobility

There is a trend towards shapeable, i.e. flexible, stretchable or printable, electronics. The unique feature of shapeability offers yet unexplored functionalities both for consumer electronics and for the emerging market of eMobility. With his ERC PoC grant, Denys Makarov has the idea to replace conventional, rigid semiconductor-based magnetic field sensors by their ultra-thin and flexible counterparts, which are about 60% thinner compared to the state-of-the-art solutions. These 150- μ m-thick flexible sensors could then be mounted on curved surfaces of stators of electrical motors, machines or generators allowing the monitoring of the performance of electrical machines. The information they can provide is crucial, for instance, to optimise the design of electrical motors for eMobility (eCars and eBikes). While the technology has already been developed in the frame of the ERC project "SMaRT", this additional grant will help the research team to go a step further towards commercialization and to test larger market segments, and thus paving the way for more energy efficient and eco-friendly vehicles.

ERC grantee: Denys Makarov

Host institution: Leibniz Institute for Solid State and Materials Research, Dresden, Germany

ERC projects:

Shapeable Magnetoelectronics in Research and Technology (SMaRT)

Ultra-thin flexible magnetic sensorics (MagnetofLEX)

ERC funding: €1.5 million Starting grant 2012 for five years + €150,000 PoC grant 2013

A portable and highly-sensitive optical technology for diagnosing inflammatory diseases

General practitioners or doctors today have to make important decisions in a very short space of time. They often rely on costly and time-consuming laboratory-based tests to identify bacterial and viral infections and to see whether antibiotic treatment is needed. Anja Boisen is taking it a step further by creating a prototype of a portable, highly-sensitive and low-cost device for detecting biomarkers of inflammatory diseases. With her team, she has already developed an optical pick-up head, as used in CD, DVD-ROM or BLU-RAY, which embeds both a laser source and a high resolution photodetector. What makes the device innovative is its ability to measure and analyse multiple parameters at a single point-of-care; red blood cells can therefore be separated from the serum for optical detection in a couple of minutes. This technology would allow patient screening at family doctors' offices, or patients with chronic diseases to be monitored without the need of regularly going to the hospital. This PoC project spins off an ERC Advanced grant project that started in 2013 with the view to create a new generation of DVD-based platforms, capable of integrating different sensors.

ERC grantee: Anja Boisen

Host institution: Technical University of Denmark, Kongens Lyngby

ERC projects:

HERMES – High Exponential Rise in Miniaturized cantilever-like Sensing (HERMES)

Rotating Opto-Magnetic Analysis System (ROMANS)

ERC funding: €2.5 million Advanced grant 2012 for five years + €150,000 PoC grant 2013



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Background

Set up in 2007 by the EU, the **European Research Council** is the first pan-European funding organisation for frontier research. It aims to stimulate scientific excellence in Europe by encouraging competition for funding between the very best, creative researchers of any nationality and age. The ERC also strives to attract top researchers from anywhere in the world to come to Europe. It funds young, early-career top researchers ('ERC Starting grants'), already independent excellent scientists ('ERC Consolidator Grants'), and senior research leaders ('ERC Advanced Grants'). The substantial funding is awarded based on peer review evaluation and can amount to maximum €2 million for a Starting Grant, €2.75 million for a Consolidator Grant and €3.5 million for an Advanced Grant. The funding scheme, 'Proof of Concept', was introduced in 2011, as top-up funding for ERC grantees.

Operating according to an 'investigator-driven', or 'bottom-up', approach, the ERC allows researchers to identify new opportunities in any field of research, without thematic priorities. The ERC, a pioneering component of the EU's Seventh Research Framework Programme ('Ideas' Specific Programme), has a total budget of €7.5 billion from 2007 to 2013. Its budget will increase by 70% under the new framework programme 'Horizon 2020' (2014-2020). Research institutions hosting ERC grantees must be situated within the European Research Area (ERA), which comprises the 28 EU Member States and 13 countries associated to the FP7. These associated countries contribute to the ERC budget every year.

The ERC is led by the ERC Scientific Council, composed of 22 top scientists and scholars. Professor Helga Nowotny is the ERC President. The ERC Executive Agency implements the 'Ideas' Specific Programme and is led by Director Pablo Amor.

Links

[ERC website](#)

[ERC Press Release on the previous Proof of Concept call](#) (February 2013)

[Striking ERC-funded projects](#)

ERC Press Contacts

Madeleine Drielsma (Press and Communication adviser)

Tel: +32 (0)2 298 76 31

erc-press@ec.europa.eu

Maud Scelo (Press and Communication adviser)

Tel: + 32 (0)2 298 15 21

erc-press@ec.europa.eu