



European Research Council

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## Press release

05 September 2012

### **New projects funded to bring "blue sky" research towards market**

**The European Research Council (ERC) has today announced that 33 ERC grantees will receive top-up funding under its 'Proof of Concept' scheme. Worth up to €150,000 each, these grants will help them to bridge the gap between their ERC research and the earliest stage of an innovation.**

The 'Proof of Concept' grant provides funding for researchers already holding ERC grants across Europe, to bring the outcomes of their basic research towards the market. The funding can cover activities such as establishing intellectual property rights, technical validation, market research or investigation of commercial and business opportunities. With a very limited part of the whole ERC budget, the initiative can unleash considerable innovation potential.

Commissioner for Research, Innovation and Science Máire Geoghegan-Quinn said: *"In order for Europe to stay competitive we have to bring more of our best ideas to market. The 'Proof of Concept' scheme means that ERC grant holders can maximise the potential of their discoveries. This is good for them and their teams, and it is good for the European economy."*

ERC President Professor Helga Nowotny commented: *"The 'Proof of Concept' scheme is gathering speed. With relatively little investment, it helps to harvest the very best ideas coming from frontier research, and takes them one decisive step further in the direction of potential innovation. This new funding initiative has also inspired more of our grantees to explore the possibilities of the results and findings they have obtained. It leads them to ask the question: 'What follows from my research?'. In the longer term, such a change in attitude will be good for Europe and will strengthen links between research and society."*

A total of 75 proposals were submitted to this first deadline of the call. 33 projects have been selected for funding, which represents a success rate of around 44%. Grants will be spread over 15 European countries, for the first time including Denmark and Poland. The highest number of grantees selected are based in the United Kingdom (7), Germany (5) and the Netherlands (4). This call is divided in two and the second deadline for applications is 3 October 2012. The budget of this first part of the call is €4.8 million (the total call budget is €10 million).

[Full list of all selected Principal Investigators](#) by country of host institution (in alphabetical order within each country group)



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### **Some examples of projects selected for 'Proof of Concept' (PoC) funding**

#### **A single vaccine dose to replace repeated medical appointments**

This innovative ERC project will maybe put an end to patients' anxiety when getting vaccinated and reduce the number of medical appointments. With his ERC Starting grant, Prof. Wilfried Weber, a biologist from the Center for Biological Signalling Studies from the University of Freiburg (Germany), tries to develop a 'bio-molecular computer'. By combining synthetic biology and materials science, his team is designing a new generation of biomaterials that react to environmental signals, i.e. biomaterials that can change their state based on computing signals. They now want to take a step further in their PoC project: by injecting a vaccine depot with the first vaccine dose, they would replace the repeated vaccine injections that people have to go through to ensure their immunity. Patients would simply swallow a pill containing a substance that induce the release of the vaccine from the depot and that protect them in an adequate way. The PoC grant will allow Prof. Weber to test such a depot on animals using vaccines against infectious diseases like hepatitis B or human papilloma viruses. The team should also be able to see whether there are less adverse reactions to vaccines and whether the new materials can consequently increase the vaccination success rate.

**Researcher:** Prof. Wilfried Weber

**Host institution:** University of Freiburg, Germany

**Project's title:** Smart Vaccine Depots (ERC Starting Grant 2010: Computing Biomaterials (COMPBIOMAT))

**Links:**

<http://www.bioss.uni-freiburg.de/cms/syntheticbiology.html>

<http://www.bio->

[pro.de/standort/aktuelle\\_forschung\\_in\\_bw/portraet/index.html?lang=en&artikelid=%2Fartikel%2F04140%2Findex.html](http://www.bio-pro.de/standort/aktuelle_forschung_in_bw/portraet/index.html?lang=en&artikelid=%2Fartikel%2F04140%2Findex.html)

#### **A personalised gene therapy to treat Parkinson's disease**

Parkinson's disease is the second most common neurodegenerative disease of the brain. Thanks to an ERC Starting grant, Dr Deniz Kirik, a neuroscientist from the Lund University in Sweden, is trying to understand the mechanisms of the disease and to develop new treatments based on advanced cell and gene therapy techniques. His research group is using small laboratory animals (rats and mice) and large animals (non-human primates and pigs) to study neuropathology and progressive cell death in the relevant neuronal systems, similar to those observed in patients suffering from neurodegenerative diseases. The idea is to reverse the disease's symptoms or to replace the lost functions by introducing small and harmless recombinant viruses (also called "rAAV vectors") into the brain cells so that the affected brain region is again capable to produce dopamine, a neurotransmitter needed for its proper functioning. His research is also about following the progression of the disease in the brain with new *in vivo* imaging technologies. His new PoC grant will allow the team to find solutions to regulate the therapeutic intervention, and tune the delivery of the drug to the individual needs of the patients, i.e. to personalise their treatment. Dr Deniz Kirik aims to develop a regulatable gene delivery system as a product for clinical use for patients with Parkinson's, and investigate its further commercialisation.

**Researcher:** Dr Deniz Kirik

**Host institution:** Lund University, Sweden

**Project's title:** A novel mechanism to regulate gene expression in the brain (ERC Starting Grant 2009: Cell and gene therapy based approaches for treatment of Parkinson's disease: From models to clinics (TREATPD))

**Links:**

[http://www.med.lu.se/expmed/brains/members/leadership\\_and\\_management/deniz\\_kirik](http://www.med.lu.se/expmed/brains/members/leadership_and_management/deniz_kirik)

[http://www.med.lu.se/multipark/news\\_archive/20090817\\_deniz\\_kirik\\_erc](http://www.med.lu.se/multipark/news_archive/20090817_deniz_kirik_erc)



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### A revolutionary solution for controlling heavy airport traffic

Safety incidents due to congested air traffic could one day be reduced to zero. With her ERC Starting grant, Dr Antonella Bogoni from the CNIT (Consorzio Nazionale Interuniversitario per le Telecomunicazioni), has looked at the properties and the design of a new generation of digital radars based on photonics. She now plans to focus her research on air traffic control and she believes that the advances of photonics could be of interest for local airports for integrating communication and surveillance operations in a single smart system. New technologies such as digital and microwave photonics could be advantageous in terms of capacity, robustness and security of optical and radio telecommunication networks, and in general to respond to the exponential evolution of the internet traffic and its high power consumption. Airports could replace their traditional air-side and land-side systems by a single photonics system gathering all functionalities, while avoiding interferences. This single radar system would not only control the air traffic but also vehicles and persons as they are moving on the ground. Dr Bogoni and her team will use the PoC grant to design the prototype of a photonics-based radar and explore collaborations with local airports, radar system vendors and photonic components suppliers.

**Researcher:** Dr Antonella Bogoni

**Host institution:** CNIT, Italy

**Project's title:** PRE-industrial Photonic-based Radar dEsign (ERC Starting Grant 2009: PHOtonic-based full DIgital Radar (PHODIR))

**Links:**

<http://www.ircphonet.it/staff/members/bogoni/curriculum.pdf>

<http://www.cnit.it/node/100>

### SmartTap: Providing a centimetre-accurate indoor location service

WiFi networks have increasingly grown in recent years with handheld smartphones, tablets and laptops being part of our everyday lives. Dr Kyle Jamieson, who was awarded a Starting grant in 2011, is working on ways of improving the localisation services such as the Global Positioning System (GPS), which often fails to function indoors. Thanks to a PoC grant, his team will seek the marketability of an indoor location system called SmartTap that uses innovative techniques to make wireless coverage more robust in buildings such as retail stores. His objective is to reach centimetre-level indoor localisation accuracy with millisecond responsiveness, far better than what is currently available within the existing access point infrastructure. Concrete applications could prove very useful for augmented reality and for in-building navigation systems. Another aspect of his work is to look at the development of chaotic, i.e. unplanned wireless networks and solutions to improve wireless access to the Internet. When clients set up too many wireless access points in a densely-populated area, the resulted interference can lower down their overall connectivity. Part of his research is about mitigating these unpredictable interferences.

**Researcher:** Dr Kyle Jamieson

**Host institution:** University College London, UK

**Project's title:** Tapping 802.11 Access Point Infrastructure for Fine-Grained Indoor Location (ERC Starting Grant 2011: Building Scalable, Secure, and Reliable "Chaotic" Wireless Networks (CHAOSNETS))

**Links:**

<http://www0.cs.ucl.ac.uk/staff/K.Jamieson/index.html>

<http://www.engineering.ucl.ac.uk/news/jamieson-erc/>



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### Two brains are better than one for the learning of reading

The unique human faculty of reading has been fascinating for scientists for years. Prof. Michal Lavidor, who won an ERC Starting grant in 2007 for her INSPIRE project centred her research on this phenomenal reading system and especially on what happens in our brains when reading. Based on previous works which showed that the left and right brain hemispheres had different but causal roles in language performance, she aimed at improving language skills of healthy and impaired adults by stimulating cortical areas involved in language processing. Clinical applications are promising for people affected of dyslexia, schizophrenia or for brain-damaged patients. She has also developed an innovative cognitive training programme for improving people's linguistic comprehension abilities; her team showed that after ten computer-based training sessions, people had increased their semantic performance significantly. With her PoC grant, she now wants to test her 'Word Game' software on the market and show that it could benefit people, especially when it is known that language abilities decline with age. Such intelligence games would ultimately allow people to better understand conversations and texts in daily life, guess the meaning of sentences with partial verbal information and use language in a more creative and unusual manner.

**Researcher:** Prof. Michal Lavidor

**Host institution:** Bar-Ilan University, Israel

**Project's title:** Cognitive Training Method for Enhancing Semantic Processing (ERC Starting Grant 2007: Interhemispheric stimulation promotes reading: two brains are better than one (INSPIRE))

**Links:**

<http://www.biu.ac.il/faculty/lavidor/>

<http://www1.biu.ac.il/indexE.php?id=7937&pt=30&pid=7710&level=2&cPath=7702,7710,7937>

### Note to the editors

The European Research Council launched the new funding initiative, the "**Proof of Concept**", in March 2011, to contribute to stimulating innovation. The call is open to all Principal Investigators benefitting from an on-going ERC grant or a grant that ended less than twelve months before the publication date of the call. The funding is for up to one year per grant.

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.

The ERC three core funding schemes are the 'ERC Starting Grants' for early-career top researchers, the 'ERC Consolidator Grants' for more experienced, independent researchers, and the 'ERC Advanced Grants' for senior research leaders. Last year, two smaller initiatives were added, the 'ERC Proof of Concept' scheme for researchers already holding an ERC grant and the 'ERC Synergy scheme', targeting small groups of principal investigators working together on one project.

The ERC operates according to an "investigator-driven", or "bottom-up", approach, allowing researchers to identify new opportunities in any field of research. Since its launch, the ERC has funded over 3,100 frontier research projects throughout Europe and has become a "benchmark" of the competitiveness of national innovation systems as it complements existing funding schemes at national and European levels.



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The ERC, which is the newest component of the EU's Seventh Research Framework Programme, has a total budget of €7.5 billion from 2007 to 2013. The European Commission has proposed a significant boost of the ERC budget to over €13 billion in the new framework programme "Horizon 2020" (2014-2020).

The ERC is led by the ERC Scientific Council, composed of 22 top scientists and scholars. The ERC President is Prof. Helga Nowotny. The Scientific Council's representative in Brussels is the Secretary General, Prof Donald Dingwell. The ERC Executive Agency implements the "Ideas" Specific Programme and is led by Director Pablo Amor.

### For more information:

[ERC Press Release on Proof of Concept](#) (March 2011)

[ERC Press Release on results of Proof of Concept](#) (Feb. 2012)

[ERC website](#)

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