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Press release

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ERC Synergy Grants fund 11 exceptional projects

The European Research Council (ERC) today announced the winners of its first competition for the 'Synergy Grants', introduced last year on a pilot basis. In this call, 11 projects have been selected to receive funding for up to six years. With a total budget of €126 million allocated, on average a Synergy Grant is worth €11.5 million and each project unites two to four Principal Investigators. 38 excellent scientists are being supported through these 11 grants.

Commissioner for Research, Innovation and Science Máire Geoghegan-Quinn commented: *"The new synergy grants show that the ERC continues to be innovative in supporting the best researchers to push the boundaries of frontier research, driven by pure curiosity, and often laying the foundations for possible future applications."*

The President of the ERC, Prof. Helga Nowotny, said: *"The ERC Synergy Grant provides a unique opportunity for outstanding scientists to explore jointly formulated research questions, which take them beyond 'normal', even if otherwise excellent, science. It aims to bring together the right kind of people at the right time, in the right configuration, to work on the right kind of problem. We decided to introduce the Synergy Grant for two calls with a limited budget. This grant scheme gives researchers a lot of freedom to work together in new ways. Once researchers have understood this, we would expect some more radical proposals for the second call. We will assess the success of this scheme by the end of next year."*

More than 700 applications were submitted and assessed following an evaluation procedure specifically designed for this purpose. The high demand attests to a very substantial interest from the scientific community. In contrast to consortia, the Synergy Grant targets individual investigators whose complementary skills, knowledge and resources enable them to take risks and address questions, which push the boundaries of frontier research in novel ways. Only a limited part of the overall ERC budget is used for this initiative.

One of the Synergy Grant winners is Prof. Konstantin Novoselov, who previously received the Nobel Prize in Physics in 2010. Based at the University of Manchester (UK), he is being awarded the grant together with Prof. Andrea Ferrari (University of Cambridge, UK) and Prof. Vladimir Falko (University of Lancaster, UK) for the Hetero2D project. Prof. Novoselov said: *"The award of the Synergy Grant is an exciting development for a research group like ours. We bet on the high-risk idea that by combining the properties of several, one-atom-thick materials into a single three-dimensional structure (called 'heterostructure'), we would create a new class of materials with predetermined properties and multiple functionalities. You*



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might think that building materials layer by layer is like science fiction. But if we succeed, this new combination of known materials, the two-dimensional (2D) atomic crystals, built layer by layer, will offer an amazing range of applications and devices, essential to Europe's future industry like photodetectors, solar cells, transistors and other optical, photonic and electronic components."

Prof. Dr. Corinne L. Hofman, based at Leiden University (Netherlands), won a Synergy Grant together with three other researchers, Prof. Dr. Ulrik Brandes (University of Konstanz, Germany), Prof. Dr. Gareth R. Davies (VU University Amsterdam, Netherlands) and Prof. Dr. Willem J.H. Willems Leiden University (Netherlands) (the Nexus1492 project). Prof. Dr. Hofman commented: *"The unique synergy of four researchers and their international team of archaeologists, social, natural and computer scientists, and heritage experts is the best possible configuration to tackle the history of the Amerindians. The mixed competences of the team should help us to investigate the impact of colonisers in the Caribbean region and the first interactions between the New and the Old World, in a completely new way. We thus hope to reassess the Caribbean histories and legacies of the intercultural Amerindian-European-African dynamics in a more global perspective."*

Prof. Christofer Toumazou and Prof. Sir Stephen Bloom from the Imperial College London (UK) have also been selected for a Synergy Grant for their i2MOVE project and they stated: *"Our respective expertise in electrical and electronic engineering as well as in obesity, diabetes and endocrinology are truly complementary. By joining forces, we will contribute to develop a novel treatment to cure obesity. Our i2MOVE project aims at studying the vagus nerve function and at developing neural stimulation that mimics the anorectic response of the vagus nerve to ingestion of food."*

List of results for the Synergy Grant 2012 call

(All projects and Principal Investigators selected for funding)

http://erc.europa.eu/sites/default/files/document/file/Synergy_Grant_2012_list.pdf

Examples of projects

The **Hetero2D** project is about development of a new class of materials with predetermined properties, specifically tailored for multifunctional applications. Starting with individual one-atom thick materials (like graphene and other 2D atomic crystals) the researches plan to assemble them with atomic precision into complex "heterostructures". By utilising 2D crystals with different properties, the team hopes to arrive at heterostructures which would singlehandedly cover a range of functions. The top atomic layer could for instance act as a sensor, while the next one could work as an amplifier or transistor or solar a cell for power generation and so on until the material would be capable to run a whole circuit. These combinations would offer unlimited opportunities as it would be possible to embed the functionality of material already at the stage of its fabric. In addition, the 'heterostructure' would only be a few atoms thick and would become the building block for future flexible and transparent electronics. The Synergy grant is absolutely essential for this team as the breakthroughs envisaged at the newly created Graphene Global Research and Technology Hub - comprising the *National Graphene Institute* and *Graphene Centre* - would not be possible by the individual researchers working alone.

(Prof. Konstantin Novoselov (University of Manchester, UK), Prof. Andrea Ferrari (University of Cambridge, UK) and Prof. Vladimir Falco (University of Lancaster, UK))



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The **Nexus1492** project intends to rewrite a more nuanced chapter of the global history of the Amerindian cultures and societies under the European colonisation. The team believes that their research configuration, which is truly inter-disciplinary, will be able to re-evaluate the reasons for the historical divide pre- and post- 1492 and to redress an historical imbalance. Their focus on the Amerindian histories and legacies, the archaeological research and the work they will carry out with local scholars and communities as well as their choice for a multi-scale and multi-spatial dimension should help in filling the gaps of the current scholarship. The research team will also pioneer new analytical tools and cutting-edge techniques in the field of archaeology. Furthermore, a joint heritage agenda will be designed to revive the indigenous cultural remains in our modern era.

(Prof. Dr. Corinne L. Hofman, Prof. Dr. Willem J. H. Willems (Leiden University, NL), Prof. Dr. Ulrik Brandes (University of Konstanz, DE), Prof. Dr. Gareth R. Davies (VU University Amsterdam, NL))

The **i2MOVE** project is about fighting obesity. Obesity is considered by the World Health Organisation (WHO) as one of the greatest public health challenges of the 21st century, and a major risk for cardiovascular disease, cancer, pregnancy and associated complications, depression and diabetes. Over 23% of adult EU citizens are obese and the resulting health costs accounted for up to over 10 billion EUR in 2010. While the existing treatments are rarely effective (e.g. bariatric surgery), the research team believes that electrical stimulation of the vagus nerve could be efficient when combined with intelligent recording. With their Synergy Grant, the researchers will combine new physiological knowledge with engineering technology based for instance on implanted electrodes. This new kind of 'intelligent' implant would record vagal signals associated with hormone release during eating, and would stimulate the nerve to modulate these signals in order to better regulate appetite. There are hopes that the therapeutic value of this project would also be useful to treat other diseases linked to neural or brain disturbances.

(Prof. Christofer Toumazou, Prof. Sir Stephen Bloom (Imperial College London, UK))

Note to the editors

As an addition to the ERC's core funding schemes (Starting Grants, Consolidator Grants and Advanced Grants), the new ERC Synergy Grant scheme was introduced by the Scientific Council in 2011 as a pilot scheme. The first call was published in October 2011 with a deadline for submissions on 25 January 2012. In this call, five projects are in the Physical Sciences and Engineering domain, four in the Life Sciences, and two in the Social Sciences and Humanities. The second ERC Synergy Grant call is currently open and will close 10 Jan 2013.

- Bottom-up, investigator-driven approach. Funding pioneering frontier research in any field of science, engineering or scholarship.
- Interdisciplinarity is no requirement, be it within domains or cross-domain, but it is expected that many projects will have this feature.
- The funding per grant is a maximum of €15 million for a period up to 6 years (pro rata for projects of shorter duration)
- Calls for proposals: published annually with one deadline
- Groups applying for the ERC Synergy Grant must be made up of a minimum of two and a maximum of four Principal Investigators (PIs) and their teams. One of the PIs acts as the 'Corresponding PI' on behalf of the group.
- Coming from different institutions, does not provide neither an advantage nor a disadvantage for PIs. What matters is that the PIs demonstrate that the synergy is indispensable for the success of the project.

Set up in 2007 by the European Union, the **European Research Council** aims to stimulate scientific excellence in Europe by encouraging competition for funding between the very best, creative researchers of any nationality and age based in the European Research Area. The ERC operates according to an "investigator-driven", or "bottom-up", approach, allowing researchers to identify new opportunities in all fields of research.



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The ERC (or 'Ideas' programme) is part of the EU's Seventh Research Framework Programme (FP7) and has a total budget of €7.5 billion from 2007 to 2013. Last year, the European Commission proposed a substantial increase in the ERC's budget for 2014 to 2020 under the new Framework Programme ('Horizon 2020'). Since its launch, it has funded over 3,000 researchers and their frontier research projects and has become a "benchmark" for the competitiveness of national research systems complementing existing funding schemes at national and European levels.

Links

ERC website
<http://erc.europa.eu/>

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