

# University awarded €1.25 million in research funding

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The University of St Andrews has been awarded €1.25 million by a European Commission-funded project which aims to advance the programmability and performance of computing technologies.

The ParaPhrase Project began in October and will run for 3 years, with PhD students and academics alike working in the University's School of Computer Science in order to increase current computer speeds exponentially.

The speed of computer processors has greatly increased in the last decade but this does not match the speeds that modern society now requires; with technology and innovative inventions such as the iPad forcing computer scientists to produce faster computer processors.

As Professor Kevin Hammond from the School of Computer Sciences explains: "Traditional computer design has hit a dead-end. Future computers will need to have thousands or even millions of cores and this represents an unprecedented challenge. The ParaPhrase Project will address this challenge, developing new ways of 'thinking in parallel' that will make it practical for normal software developers to harness the capabilities of new, advanced designs."

"The benefit to society is potentially enormous as computers become an essential part of modern-day infrastructure. These new designs will not only allow uses we can only imagine at the moment, such as household robots helping with daily chores, driverless vehicles which can improve road safety or provide low-cost rural transport, and household automation to improve the quality of life of the elderly, but will also dramatically reduce the cost and energy usage of computer devices."

Dr Horacio González-Vélez, a Lecturer and Principal Investigator at RGU's School of Computing, added, "All contemporary devices and computers furnish one or more multi-core processors. While it's great that you have a fast, multi-core processor in your iPad or smartphone, unless the applications on these technologies are able to take full advantage of the processors capabilities, users will not see any real improvement. Multiply this by the millions of devices in the world, and you will appreciate the overwhelming size of the challenge at hand."

The innovative project will not only benefit mobile phones and multi-core Personal Computers but will affect computer servers in industry which will expect faster video streaming and more efficient renewable energy production amongst other improvements.