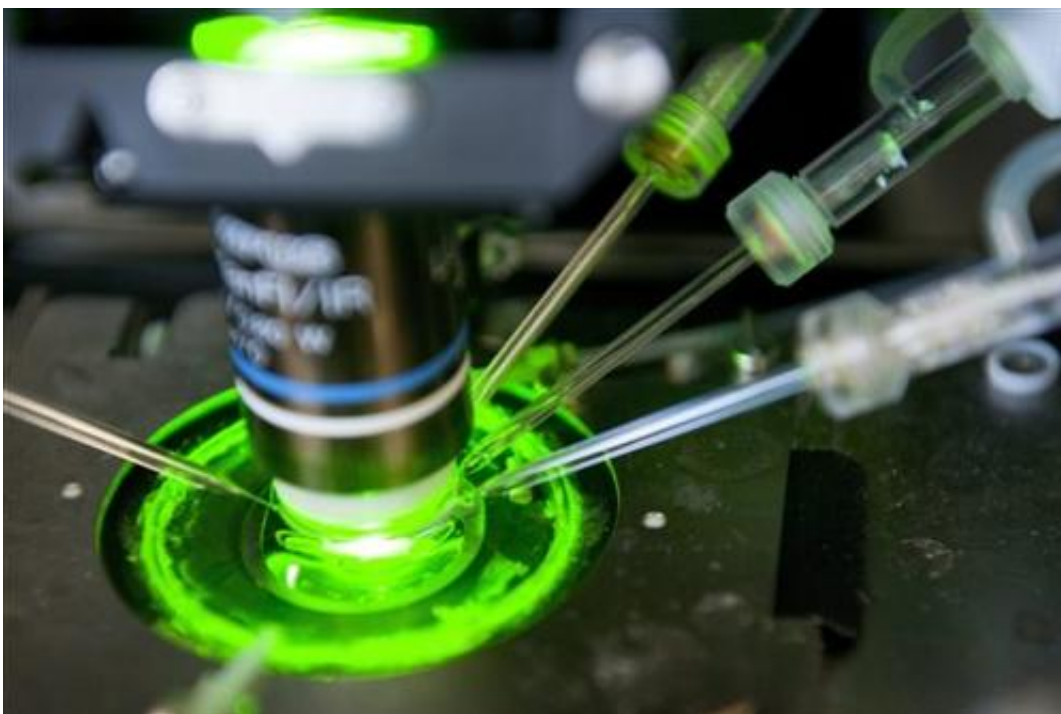


# Two science projects win up to \$1.3 billion each (Update 2)

January 28 2013, by Don Melvin

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In this May 9, 2011 file picture people use a infrared-DIC microscopy to do multi-neuron patch-clamp recording in the Blue Brain team and the Human Brain Project (HBP) laboratory of the Ecole Polytechnique Federale de Lausanne (EPFL), in Lausanne, Switzerland. Two European science projects - one to map the intricacies of the human brain, the other to explore the extraordinary carbon-based material graphene—won an EU technology contest Monday, Jan. 28, 2013, getting up to euro1 billion (\$1.34 billion) each over the next decade. The projects were selected from 26 proposals. (AP Photo/Keystone/Laurent Gillieron)

Two European science projects—one to map the intricacies of the human brain, the other to explore the extraordinary carbon-based material graphene—won an EU technology contest Monday, getting up to €1 billion (\$1.34 billion) each over the next decade.

The projects were selected from 26 proposals.

"European's position as a knowledge superpower depends on thinking the unthinkable and exploiting the best ideas," European Commission Vice President Neelie Kroes said in a statement. "This multi-billion competition rewards home-grown scientific breakthroughs and shows that when we are ambitious we can develop the best research in Europe."

The Human Brain Project will use supercomputers 1,000 times more powerful than those today to create the most detailed model ever of the human brain. Then the project plans to simulate the effects of drugs and treatments on the brain, for a better understanding of neurological diseases and related ailments.

In addition, the increased knowledge about how the brain works—and how it manages billions of processing units and trillions of synapses while consuming no more power than a light bulb —may lead to "a paradigm shift for computing," the European Commission, the European Union's executive branch, said in a statement.

"The economic and industrial impact of such a shift is potentially enormous," the commission said.

The leader of the project, Henry Markram, a professor of neuroscience at the Ecole Polytechnique Federale of Lausanne in Switzerland, said earlier this month that it could not be undertaken without this kind of funding.

"The pharmaceutical industry won't do this, computing companies won't do this—there's too much fundamental science," Markram said. "This is one project which absolutely needs public funding."

The other project will investigate the possible uses of graphene, the thinnest known material, which conducts electricity far better than copper, is perhaps 300 times stronger than steel and has unique optical properties. A sheet of it is one atom thick; scientists call it the first known two-dimensional material.

Important future uses include the development of fast, flexible and strong consumer electronics, bendable personal communication devices, lighter airplanes, cars that use less energy and artificial retinas.

The project will be led by professor Jari Kinaret of the Chalmers University of Technology in Goteborg, Sweden.

"The story of graphene shows there is still wonder in science," Kroes said Monday at a news conference. "It's like a miracle."

In 2010, the Nobel Prize in Physics was awarded to two scientists at the University of Manchester in Britain "for groundbreaking experiments regarding the two-dimensional material graphene."

"So, you've heard of Silicon Valley," Kroes said. "'Where in Europe wants to be known as 'Graphene Valley?'" That's the billion-euro question I am putting to you today."

Each of the projects will initially receive €54 million (\$73 million) from the European Union's research budget, an amount that will be matched by national governments and other sources. Further funding will depend on whether they reach certain milestones within the first 30 months, but over a decade it could total €1 billion (\$1.34 billion) each.

In this age of government austerity, the commission promised to monitor the projects carefully so they continue "to be an efficient use of taxpayers' money."

The winners were selected by a panel of 25 experts, including professors, scientists and Nobel winners.

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