Why Obama's Brain-Mapping Project Matters

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Last week, President Obama officially announced $100 million in funding for arguably the most ambitious neuroscience initiative ever proposed.

The Brain Research through Advancing Innovative Neurotechnologies [1], or BRAIN, as the project is now called, aims to reconstruct the activity of every single neuron as they fire simultaneously in different brain circuits, or perhaps even whole brains.

The “next great American project,” as Obama called it, could help neuroscientists understand the origins of cognition, perception, and other enigmatic brain activities, which may lead to new, more effective treatments for conditions like autism or mood disorders and could help veterans suffering from brain injuries.

Big brain science is also on the minds of Europeans; the European Union recently announced a nearly 1.2 billion Euro, 10-year proposal to computationally simulate the human brain [2] from the level of molecules and neurons up through neuronal circuits.

Various tools—from genetics and molecular biology—have helped researchers understand how neurons behave as individuals. But neuroscientists are now able to study only the activity of a handful of these brain cells at a time using voltage-sensing electrode probes.

Links:
[1] http://www.whitehouse.gov/the-press-office/2013/04/02/fact-sheet-brain-initiative
[2] http://www.humanbrainproject.eu/