AMENDED IN SENATE APRIL 22, 2014

SENATE BILL No. 836

Introduced by Senator Corbett

January 6, 2014

An act ~~relating to health.~~ *to add Chapter 15 (commencing with Section 92985) to Part 57 of Division 9 of Title 3 of the Education Code, relating to brain research.*

LEGISLATIVE COUNSEL'S DIGEST

SB 836, as amended, Corbett. Brain research: ~~funding program.~~ *Cal-BRAIN program.*

Existing law establishes various health research grant programs, including the Cancer Research Program, the Breast Cancer Research Program, and the Spinal Cord Injury Research Program.

~~This bill would state the intent of the Legislature to enact legislation that would provide funding for the purpose of establishing and operating a California-based research funding program to complement a specified national brain research program.~~

This bill, the California Blueprint for Research to Advance Innovations in Neuroscience (Cal-BRAIN) Act of 2014, would provide that the Regents of the University of California may establish the Cal-BRAIN program to leverage California's research assets and the federal BRAIN Initiative's funding opportunities to accelerate the development of brain mapping techniques, including the development of new technologies, in order to achieve certain goals. The bill would additionally request the University of California to administer the Cal-BRAIN program consistent with specified objectives and to provide information about the program through an Internet Web site.

Vote: majority. Appropriation: no. Fiscal committee: no. State-mandated local program: no.

The people of the State of California do enact as follows:

SECTION 1. The Legislature hereby finds and declares all of the following:

(a) In April 2013, President Obama unveiled the Brain Research through Advancing Innovative Neurotechnologies (BRAIN) Initiative — a collaborative program that will map the activity of every neuron in the human brain with a programmed total investment of more than $300 million per year over 10 years.

(b) The BRAIN Initiative is launching with approximately $110 million in funding for research in 2014, as well as additional private sector investment from institutes and foundations based in California.

(c) California is poised to be a world leader in this research effort given the prominent role of scientists and industry leaders throughout the state.

(d) Four of the six scientists who proposed the BRAIN Initiative and six of the 15 members of the Advisory Committee to the Director of the National Institutes of Health for the BRAIN Initiative are from California.

(e) Some California-based corporations have indicated they are interested in collaborating with brain research institutions on research for the BRAIN Initiative to bring new discoveries to the marketplace.

(f) The BRAIN Initiative has the potential to be a major driver of new industries and jobs in biotechnology, artificial intelligence, and information technologies, as well as a catalyst for major breakthroughs in brain-related diseases, injuries, and illnesses, including Alzheimer's disease, which is programmed to cost California over $30 billion a year by 2030.

(g) The products of scientific research improve the quality of our lives and health and provide us with high-quality jobs that employ and demand a highly skilled workforce.

(h) Given California's assets and capacity for collaboration, entrepreneurship, and innovation, a state investment to expand and accelerate this research in the state and to promote the translation of breakthroughs into the marketplace is an important

investment in the intellectual infrastructure for California's economic future.

SEC. 2. Chapter 15 (commencing with Section 92985) is added to Part 57 of Division 9 of Title 3 of the Education Code, to read:

CHAPTER 15. THE CALIFORNIA BLUEPRINT FOR RESEARCH TO ADVANCE INNOVATIONS IN NEUROSCIENCE ACT OF 2014

92985. This act shall be known, and may be cited, as the California Blueprint for Research to Advance Innovations in Neuroscience (Cal-BRAIN) Act of 2014.

92986. (a) The Regents of the University of California may establish the Cal-BRAIN program to leverage California's vast research assets and the federal BRAIN Initiative's funding opportunities to accelerate the development of brain mapping techniques, including the development of new technologies, which will create new, high-paying jobs in California while advancing patient care and improving lives, in order to achieve the following goals:

(1) Maintain California's leadership role in neuroscience innovation.

(2) Develop a dynamic map of the human brain that provides researchers, physicians, and engineers with the knowledge necessary to develop new treatments and technologies that will improve lives and reduce the costs of providing health care.

(3) Grow California's economy through the expansion of California's high technology and biotechnology sectors.

(4) Train the next generation of scientists for the neuroscience and engineering jobs of the future.

(b) The University of California is requested to utilize California's unique collaborative research environment by administering the Cal-BRAIN program consistent with all of the following:

(1) Convening stakeholders from public and private research institutions, biotechnology and high technology companies, and venture capital firms to develop the governing structure of the Cal-BRAIN program.

(2) Adopting a research plan that identifies milestones for achieving the goals of the Cal-BRAIN program.

(3) Establishing competitive, merit-based opportunities for interested public and private California research institutions to apply for Cal-BRAIN program funding.

(4) Maintaining the flexibility to adjust the Cal-BRAIN program's priorities and focus based upon knowledge gained from scientific discoveries.

(5) Establishing a technology transfer program to identify and accelerate the commercial application of both early and late-stage discoveries and technologies from the Cal-BRAIN program into the marketplace and to promote new and expanded technology sectors in the state.

(6) Soliciting contributions to the Cal-BRAIN program with a goal of achieving a nonstate funding match that meets or exceeds the financial investment by the state.

92987. The Regents of the University of California are requested to provide information about the Cal-BRAIN program through an Internet Web site, including a brief description of funded projects and activities.

~~SECTION 1. (a) The Legislature hereby finds and declares all of the following:~~

~~(1) In April 2013, the Obama Administration unveiled the Brain Research through Advancing Innovative Neurotechnologies (BRAIN) Initiative — a collaborative project that will map the activity of every neuron in the human brain with a projected total investment of more than $300 million per year over 10 years.~~

~~(2) The BRAIN Initiative is launching with approximately $110 million in funding for research in 2014, as well as additional private sector investment from institutes and foundations based in California.~~

~~(3) California is poised to be a world leader in this research effort given the prominent role of scientists and industry leaders throughout the state.~~

~~(4) Four of the six scientists who proposed the BRAIN Initiative and six of the 15 members of the Advisory Committee to the Director of the National Institutes of Health for the BRAIN Initiative are from California.~~

~~(5) Some California-based corporations have indicated they are interested in collaborating with brain research institutions on research for the BRAIN Initiative to bring new discoveries to the marketplace.~~

~~(6) The BRAIN Initiative has the potential to be a major driver of new industries and jobs in biotechnology, artificial intelligence, and information technologies, as well as a catalyst for major breakthroughs in brain-related diseases, injuries, and illnesses, including Alzheimer's, which is projected to cost California over $30 billion a year by 2030.~~

~~(7) The products of scientific research improve the quality of our lives and health and provide us with high-quality jobs that employ and demand a highly skilled workforce.~~

~~(8) Achievements from investments in research have increased life expectancy by more than 50 percent, decreased death rates from heart disease, stroke, tuberculosis, and HIV, created the transistor, the laser, the accelerator, and the personal computer, explored space, invented new materials like Kevlar and Teflon, given rise to the Internet, and led to the growth and dominance of the United States economy.~~

~~(9) A 2013 American Society for Biochemistry and Molecular Biology study on Nondefense Discretionary Science found that the research of United States laboratories commercialized by United States companies led to a drop in the yearly cancer mortality rate that saves the United States $500 billion per year in health care costs and that the information technology sector, built largely on discoveries by federally funded scientists, contributes nearly $1 trillion per year on the United States gross domestic product.~~

~~(10) According to the 2011 Battelle Memorial Institute study, a recent major research initiative, the Human Genome Project, returned $141 to the United States economy for every dollar invested.~~

~~(11) The 2009 National Bureau of Economic Research study on the broader economic impacts of research and development showed a $2.50 to $3 return for every dollar invested.~~

~~(12) Strategic investments by the state can also assist in the development of technology clusters including the biotechnology ecosystems of the San Francisco Bay area and the San Diego region. A 2009 study by Steven Casper, Interim Dean of the Keck Graduate Institute of Applied Life Sciences, on building successful biotechnology clusters found that research funding that promotes academic and industry collaboration can stimulate inventor networks that are an important factor in developing strong regional technology clusters.~~

~~(13) Funding research is overwhelmingly supported by the public with nearly three-quarters of Americans thinking that government investments in basic scientific research and in engineering and technology pay off in the long run, according to a July 2009 Pew Research Center poll on funding scientific research.~~

~~(14) Given California's assets and capacity for collaboration, entrepreneurship, and innovation, a state investment to expand and accelerate this research in the state and to promote the translation of breakthroughs into the marketplace is an important investment for California's economic future.~~

~~(b) It is the intent of the Legislature to enact legislation that would provide funding for the purpose of establishing and operating a California-based research funding program to complement the national BRAIN Initiative. It is the intent of the Legislature to enact legislation that would ensure that this state research funding program does all of the following:~~

~~(1) Includes nonstate matching funds over the life of the program.~~

~~(2) Includes a strong emphasis on fostering technology transfer of new discoveries into the marketplace.~~

~~(3) Promotes collaboration among both public and private academia and industry.~~

~~(4) Ensures that research efforts and priorities are well-coordinated to maximize the benefits to taxpayers for investments from state, federal, and private sector sources.~~

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