FOR IMMEDIATE RELEASE

A NEW APPROACH TO ALZHEIMER’S DISEASE RESEARCH

National Institutes of Health Awards the Allen Institute for Brain Science a $3.4 million grant to study the effect of Alzheimer’s disease on brain-wide connections

SEATTLE, WASH. — June 4, 2014 — As part of its ongoing research to better understand the complexities of the human brain, the Allen Institute for Brain Science is embarking on the first effort to map connectivity patterns across the whole brain in mouse models of Alzheimer’s disease, through its recent award of a $3.4 million grant over five years from the National Institute on Aging of the National Institutes of Health.

“Many studies on Alzheimer’s disease focus on just one or a small number of areas in the brain, such as the hippocampus, for its role in memory,” says Julie Harris, Assistant Investigator at the Allen Institute for Brain Science and primary investigator on the grant. “By studying connections across the entire cortex in both normal mice and mouse models of the disease, we hope to finally make the breakthroughs that will help us understand the pathways through which Alzheimer’s disease spreads, and what interventions we can make against its progression.”

According to the National Institute on Aging, Alzheimer’s disease is characterized by diminishing memory and thinking skills, affecting as many as 5.1 million Americans, most over the age of 60. The causes of Alzheimer’s disease are still largely unknown, though they are likely a combination of genetic, environmental and other factors.

So far, clinical trials for drugs developed in mouse models that typically focus on individual brain areas have yielded poor results. “Our expanded view of the disease that looks at connections across the whole brain will hopefully improve mouse models and their use in translational research to identify drugs and treatments that work in humans,” says Harris.

The whole-brain model of Alzheimer’s builds on the Allen Mouse Brain Connectivity Atlas, recently profiled in the journal Nature1, which allows researchers to quantitatively analyze connections across the entire mouse brain.

Harris and her colleagues plan to expand the resource by focusing on areas of the brain that are hardest hit early in the disease. They will work backwards first, using viral tracers to discover which regions of the brain send their neurons to those hard-hit areas. Then, they will follow the other projections from those source regions to different parts of the brain, ultimately creating a detailed map showing how and which brain regions are interconnected, and how these connections are altered by disease. In the spirit of other Allen Institute resources, they plan to make the data publicly available through the Allen Brain Atlas data portal at brain-map.org.

1 Nature 508, 207-214 doi:10.1038/nature13186
“This is the kind of meaningful research that can only be done at a place like the Allen Institute,” says Allan Jones, CEO of the Allen Institute for Brain Science. “Our ability to process enormous amounts of exceptionally high quality data makes us uniquely equipped to develop this valuable new perspective on a disease that has troubled researchers for decades, and that will hopefully yield new insights that will lead to effective treatments.”

**About the Allen Institute for Brain Science**

The Allen Institute for Brain Science ([www.alleninstitute.org](http://www.alleninstitute.org)) is an independent, 501(c)(3) nonprofit medical research organization dedicated to accelerating the understanding of how the human brain works in health and disease. Using a big science approach, the Allen Institute generates useful public resources used by researchers and organizations around the globe, drives technological and analytical advances, and discovers fundamental brain properties through integration of experiments, modeling and theory. Launched in 2003 with a seed contribution from founder and philanthropist Paul G. Allen, the Allen Institute is supported by a diversity of government, foundation and private funds to enable its projects. Given the Institute’s achievements, Mr. Allen committed an additional $300 million in 2012 for the first four years of a ten-year plan to further propel and expand the Institute’s scientific programs, bringing his total commitment to date to $500 million. The Allen Institute’s data and tools are publicly available online at [www.brain-map.org](http://www.brain-map.org).

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