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Japan's Brain Mapping Project

This month, the Ministry of Education, Culture, Sports, and S&T (MEXT) launched a national research project, **"Elucidating the Brain Function Network Using Innovative Technologies."** After soliciting the proposals for the project in February 2014, MEXT selected RIKEN's Brain Science Institute (BSI) as the awardee. The research grant for the project is Yen 1 billion (approximately \$10 million) per year for 10 years. MEXT will provide the JFY2014 fund, while a new health-related funding organization to be established in April 2015 will take over the funding administration thereafter.

RIKEN's BSI will target a complete elucidation of a brain neuron cell network for primates by advancing gene manipulation technologies and optical technologies in the marmoset, both of which are considered to be Japan's strengths. The institute will also coordinate with a clinical research group and other technology-specific groups which will be selected under a separate solicitation for proposals, to find brain structures and activities common to primates and human beings. More concretely, the 5-year target is to complete a map for micro-level structures and activities for the marmoset's whole brain circuit. In 10 years, they hope to achieve a complete elucidation of the marmoset's neuron circuit function as it corresponds to the human neuron circuit function, which can potentially elucidate the mechanism of diseases in the human brain.



Japan's Brain Mapping Project occurs at the same time that similar efforts are underway within the U.S. at NSF. Whereas Japan's efforts focus on the brain structure of a lower order primate, NSF's efforts extend beyond the mapping of the brain to include nanotechnologies and computational modeling. NSF hopes to generate an array of physical and conceptual tools needed to determine how healthy brains function over the lifespan of humans and other organisms. In addition, the NSF Brain Initiative also includes a focus on workforce development in recognition of the need to develop a workforce that is capable of creating and implementing the necessary tools for understanding how thoughts, memories and actions emerge from dynamic activities in the brain.