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Stanley Center at the Broad Institute and New York Stem Cell Foundation Partner to Develop Stem Cell Resource for Schizophrenia and Psychiatric Diseases

(February 19, 2015) - The New York Stem Cell Foundation (NYSCF) and the Stanley Center at the Broad Institute of MIT and Harvard are partnering to create a foundational stem cell resource to study psychiatric disorders through the production of induced pluripotent stem (iPS) cell lines from individuals with schizophrenia and other psychiatric disorders.

This new partnership aligns NYSCF's mission to accelerate cures for the major disease of our time through stem cell research with the Stanley Center's goal to reduce the burden of serious mental illness through research. NYSCF is generating stem cell lines from skin samples of patients provided by the Stanley Center, which recently reported on the genotyping of more than 10,000 patients with schizophrenia. Research conducted using the stem cell lines generated will closely couple with ongoing genetic studies on the underpinning of psychiatric disease at the Stanley Center.

"This is a great example of how two non-profit organizations can work together to advance a cause which, in the short term, will help us better understand a misunderstood and difficult condition. In the longer term, it will help provide important information and approaches for drug discovery," said Dr. Steven Hyman, Director of the Stanley Center for Psychiatric Research at the Broad Institute of MIT and Harvard.

Once the stem cell lines have been generated, scientists at the Stanley Center will utilize the stem cell lines to study psychiatric disease. Using novel protocols, they will turn the iPS cells into the adult brain cell types that are affected in schizophrenia.

"We are thrilled to partner with the Stanley Center to develop this important resource for studying schizophrenia and other mental disorders. This collaboration combines the stem cell expertise and technological capabilities of NYSCF with the resources, patient access, and clinical knowledge of the Stanley Center," said Susan L. Solomon, NYSCF CEO and Founder.

iPS cells are remarkable because they can generate an endless supply of the diverse cells that compose our bodies. This characteristic makes these cells a promising tool for studying psychiatric disease and eventually devising therapies. Early efforts have suggested that many brain cell types can be made from iPS cells in such a way that they carry the genetic risk factors that predispose people to psychiatric disease. Living cells like these have never before

been available for study, as the only source of such material was from autopsy samples. Thus, stem cell biology offers a promising avenue for understanding how the brain malfunctions in people with psychiatric disorders.

This collaboration will attempt to determine which of the many brain cell types that are changed in individuals with psychiatric disease and to understand how they are changed. These avenues of investigation, along with studies of the genetic underpinning of psychiatric disease, may provide great insight into the causes and potentially new treatments for psychiatric disease through the identification of drugs that correct the changes identified.

The genetic contributors to brain dysfunction are complex and it is known that both protective and predisposing genetic causes shape the likelihood of developing an illness like schizophrenia. As a result, utilizing this resource, scientists will have the opportunity to study the phenotypic effects of predisposing sequence variants on a genetic background that scientists can feel confident would not suppress the sequence variants.

NYSCF will generate the stem cell lines using The NYSCF Global Stem Cell Array™, an automated, robotic technology capable of producing large numbers of identical stem cell lines. The Array technology allows for the creation of this large number standardized stem cell lines, effectively creating a panel representing the diverse cellular phenotypes and genotypes within schizophrenia - a task that has previously not been possible in the field. Scientists are beginning to better understand how to control stem cells in order to reproducibly generate large quantities of the many diverse cell types from the brain.

“This is an opportunity to unite the remarkable progress that has been made in genetic studies of psychiatric diseases with emerging technologies from NYSCF. This collaboration will help illuminate how carrying a genotype which predisposes one to schizophrenia fundamentally changes neuronal function and behavior,” said Kevin Eggan, Director of the Stem Cell Program of the Stanley Center.

About The New York Stem Cell Foundation

The New York Stem Cell Foundation (NYSCF) is an independent organization founded in 2005 to accelerate cures and better treatments for patients through stem cell research. NYSCF employs over 45 researchers at the NYSCF Research Institute, located in New York, and is an acknowledged world leader in stem cell research and in developing pioneering stem cell technologies, including the NYSCF Global Stem Cell Array™. Additionally, NYSCF supports another 60 researchers at other leading institutions worldwide through its Innovator Programs, including the NYSCF – Druckenmiller Fellowships and the NYSCF – Robertson Investigator Awards. NYSCF focuses on translational research in a model designed to overcome the barriers that slow discovery and replaces silos with collaboration. For more information, visit www.nyscf.org

About the Broad Institute of MIT and Harvard

The Eli and Edythe L. Broad Institute of MIT and Harvard was launched in 2004 to empower this generation of creative scientists to transform medicine. The Broad Institute

seeks to describe all the molecular components of life and their connections; discover the molecular basis of major human diseases; develop effective new approaches to diagnostics and therapeutics; and disseminate discoveries, tools, methods, and data openly to the entire scientific community.

Founded by MIT, Harvard, and its affiliated hospitals, and the visionary Los Angeles philanthropists Eli and Edythe L. Broad, the Broad Institute includes faculty, professional staff, and students from throughout the MIT and Harvard biomedical research communities and beyond, with collaborations spanning over a hundred private and public institutions in more than 40 countries worldwide. For further information about the Broad Institute, go to <http://www.broadinstitute.org>.