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FACT SHEET:

THE STANLEY CENTER FOR PSYCHIATRIC RESEARCH

BACKGROUND

Psychiatric disorders exact an enormous human and economic toll, yet little is known about their underlying biology. Current drugs, which target symptoms but *not* root causes, are based on compounds discovered serendipitously over a half-century ago.

Importantly, inheritance is the largest risk factor we know for many psychiatric illnesses. Schizophrenia, bipolar disorder, and other devastating mental illnesses exhibit some of the highest heritabilities of any common, serious illness in medicine. Because the disorders run in families, scientists can discover clues to their biological causes by investigating the genomes of patients who suffer from them.

Advances in genomic technologies and analytic methods have finally made it possible to access this information at the necessary depth and scale to make significant progress in psychiatric research. We now stand at a critical moment when we have achieved our first glimpses of the information needed to ignite much-needed progress in developing new therapeutics for these illnesses.

MISSION & HISTORY

The Stanley Center for Psychiatric Research, based at the Broad Institute, seeks to reduce the burden of serious mental illness through research. It was launched in 2007 with a $100 million founding gift from the Stanley Medical Research Institute, funded by contributions from Ted Stanley and his late wife, Vada. Its major focus is to clarify the molecular causes of schizophrenia, bipolar disorder, and other severe mental illnesses and to translate that knowledge into new therapies and biomarkers for patients.

RESEARCH

The Broad Institute's Stanley Center for Psychiatric Research has developed world-leading programs in several key scientific areas, which are deeply integrated and which together are showing a path toward a molecular understanding of psychiatric disorders. These programs include large-scale, unbiased genetic investigations; model systems ranging from stem-cell derived neurons to animal models used to investigate the effects of disease-associated genes; neurobiology; and therapeutics.

Importantly, the Stanley Center made an early and critical investment in its genetics program — "doubling down" precisely when many in the field backed away. That visionary investment is now beginning to yield critical insights into the molecular underpinnings of schizophrenia, bipolar disorder, and other psychiatric disorders. In turn, these insights are catalyzing a major shift in psychiatric genetics by sparking its transformation into a molecular field — one populated with the names of specific genes and proteins that, through rigorous genetic analyses, are implicated in disease biology.

This work would not have been possible without an unprecedented number of patient samples for analysis. The Stanley Center, together with its collaborators, has assembled the world's largest collection of human

DNA samples in psychiatric research — currently at more than 175,000 samples — that includes schizophrenia, bipolar disorder, attention deficit hyperactivity disorder, and healthy control samples.

COMMUNITY

The Stanley Center brings together more than 150 scientists from the Broad Institute and the Broad Institute's partner institutions. These researchers are drawn from multiple fields and disciplines including genetics, computational biology, neurobiology, stem cell biology, chemistry, clinical psychiatry, and others.

The center collaborates extensively with investigators within the MIT, Harvard, and Harvard-affiliated hospital communities and, more broadly, around the world. It has collaborators at more than 60 institutions in 25 countries, including:

- Harvard University Faculty of Arts and Sciences and Harvard Medical School
- The Massachusetts Institute of Technology
- Boston Children's Hospital
- Cardiff University School of Medicine, UK
- Karolinska Institute, Sweden
- Massachusetts General Hospital
- McLean Hospital
- Mt. Sinai School of Medicine
- University of Southern California

LEADERSHIP

Stanley Center Leadership

Director	Steven Hyman
Chief Scientist	Edward Scolnick
Associate Director	Jennifer Moran
Director, Genetics	Steven McCarroll
Director, Model Systems and Neurobiology	Guoping Feng
Assistant Director, Neurobiology	Jen Pan
Director, Stem Cell Biology	Kevin Eggan
Director, Medicinal Chemistry	Edward Holson
Director, Clinical Applications	Roy Perlis

Scientific Advisory Committee

Cori Bargmann, Rockefeller University
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Nicholas Katsanis, Duke University School of Medicine
Eric Lander, Broad Institute
Richard Lifton, Yale University
Robert Malenka, Stanford University
Carla Shatz, Stanford University

PUBLICATIONS

Over the past six years, Stanley Center researchers have led or contributed to several seminal papers focused specifically on the genetics of psychiatric disorders. These include:

July 2014

International collaboration identifies genomic regions associated with schizophrenia
In press at *Nature.* Psychiatric Genomics Consortium, Schizophrenia Workgroup. Biological insights from 108 schizophrenia-associated genetic loci.

January 2014

New studies show that many rare mutations contribute to schizophrenia risk
Nature. Purcell *et al*. A polygenic burden of rare disruptive mutations in schizophrenia.
Nature. Fromer *et al*. *De novo* mutations in schizophrenia implicate synaptic networks.

August 2013

Study of common genetic variation reveals 22 regions (13 new) associated with schizophrenia
Nature Genetics. Ripke *et al*. Genome-wide association analysis identifies 13 new risk loci for schizophrenia.

February & August 2013

Genome-wide studies find that five disorders share genetic risk factors
The Lancet. Cross-Disorder Group of the Psychiatric Genomics Consortium. Identification of risk loci with shared effects on five major psychiatric disorders: a genome-wide analysis.
Nature Genetics. Cross-Disorder Group of the Psychiatric Genomics Consortium.
Genetic relationship between five psychiatric disorders estimated from genome-wide SNPs.

September 2011

Genetic variants identified for schizophrenia, bipolar disorder
Nature Genetics. The Schizophrenia Psychiatric Genome-Wide Association Study (GWAS) Consortium. Genome-wide association study identifies five new schizophrenia loci.
Nature Genetics. Psychiatric GWAS Consortium Bipolar Disorder Working Group. Large-scale genome-wide association analysis of bipolar disorder identifies a new susceptibility locus near *ODZ4*.

July 2009

Genome-wide analysis of common genetic variation uncovers scores of variants tied to schizophrenia
Nature. International Schizophrenia Consortium. Common polygenic variation contributes to risk of schizophrenia and bipolar disorder.

July 2008

Genome-wide study identifies some of the first definitive genetic links to schizophrenia
Nature. International Schizophrenia Consortium. Rare chromosomal deletions and duplications increase risk of schizophrenia.