

Psychiatric Research: Discovering the Future of Mental Health

Why is research integral to the field of mental health care?

Research gives us a deeper understanding of the workings of the mind and into the causes of mental illness. It supplies us with the knowledge we need to provide more effective care and treatment and builds the foundation upon which people with mental illness find recovery.

Such scientific exploration has led to the development new forms of therapy that have vastly improved the lives of people who suffer from anxiety, bipolar disorder, dementia, depression, and schizophrenia. Research that strengthens the connection between mental and physical health.

Mental health research benefits us all. New York State has historically been a leader in this field, becoming the first state to organize research into causes of mental illness when it founded the Pathological Institute in 1895. That same year, Bernard Sachs, an instructor at New York Polyclinic Hospital and a consultant at Mount Sinai Hospital and Manhattan State Hospital, published "A Treatise on The Nervous Diseases of Children," the first study of its kind.

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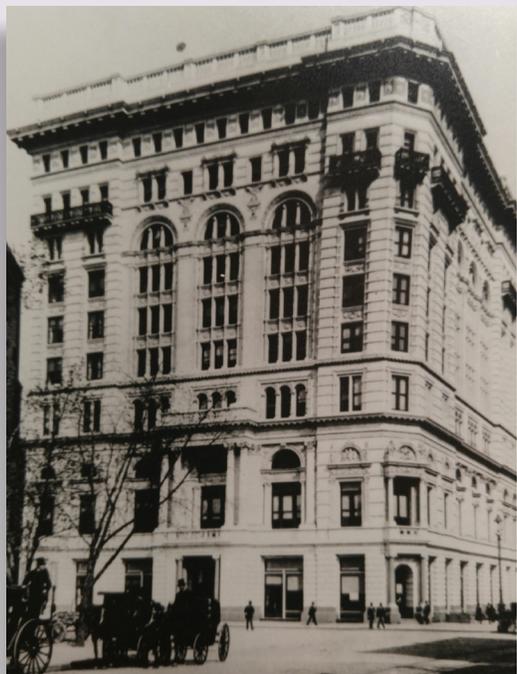
From previous page

Other mental health research firsts for New York include:

- **1907** – The first state to begin the collection of statistics and data on mental illness.
- **1933** – Researchers at the New York State Psychiatric Institute (NYSPI) in Manhattan become first to describe childhood schizophrenia.
- **1946** – The development at NYSPI of the first genetic research program in schizophrenia in the United States leads to NYSPI researcher Franz Kallman’s groundbreaking work, “The Genetic Theory of Schizophrenia.”
- **1953** – New York was the first state to study the role of nutrition in mental health treatment
- **1954** – OMH’s Rockland Research Institute’s Dr. Nathan Kline, for whom OMH’s Nathan S. Kline Institute for Psychiatric Research in Orangeburg is named, pioneers the introduction and use of Rauwolfia and other tranquilizing medications for the treatment of schizophrenia.
- **1957** – Dr. Kline first reports the beneficial effects of iproniazid, a monoamine oxidase inhibitor (MAOI), in the treatment of severe depression, ushering in the use of pharmacologic treatments for depression and affective disorders.
- **Late 1960s** – The Rockland Research Institute pioneers the application of computers to psychiatry leading to the development of the first mental health information system, the Multi-State Information System.
- **1982** – NYSPI starts first multigenerational study of families at risk for depression. This ongoing study continues at present.

Today, OMH is still dedicated to providing mental health services that are based on the best evidence available. NYSPI and Nathan Kline are both world-class psychiatric research institutes – conducting innovative studies on the human mind, the development and retention of memory, psychopharmacological treatments, strategies for treating Alzheimer’s Disease, and the application of computer technology.

In this issue of *OMH News*, we will discuss some of the exciting and groundbreaking research ongoing throughout the state and by the Office of Mental Health itself. We hope you find it enlightening and we encourage you to share your thoughts with us. [OMH](#)



Center for Practice Innovations: On the Leading Edge of Psychiatric Research

Some of the most groundbreaking work on implementation of evidence based practices in the field of mental health care is currently underway at the Center for Practice Innovations (CPI) at the New York State Psychiatric Institute (NYSPI).

Funded by OMH through the Research Foundation for Mental Hygiene, CPI assists OMH in promoting the use of evidence-based practice by using innovative approaches to build collaborations between stakeholders, strengthening the skills of practitioners, and helping agencies develop the means to support such initiatives.

CPI was established in November 2007 with the goals of:

- Promoting the widespread availability of mental health evidence-based practices in New York State.
- Promoting innovations related to emerging promising practices, cultural adaptations, and organizational change approaches that support the implementation of quality services for individuals with serious mental health problems.
- Creating informational and educational resources for the general public as well as users and providers of mental health services.

CPI is located at NYSPI on the New York Presbyterian Hospital/Columbia University Medical Center campus. This location gives CPI the ability to connect its research and the expertise of medical centers with the real-life issues of consumers, families, providers, agencies, and communities. Dr. Lisa Dixon has been the Director of CPI since April 2012, and also serves as the Director of the Division of Mental Health Services and Policy Research at Columbia.

CPI includes several initiatives that focus on specific evidence based practices or program models. Dr. Nancy Covell directs the initiative supporting Integrated Treatment for Co-Occurring Substance and

Mental Health Disorders (known as FIT). A recent publication showed how FIT's learning collaboratives are helping clinics provide appropriate stage-based treatment for individuals with co-occurring disorders. Dr. Helle Thorning leads the Assertive Community Treatment (ACT) Institute. Dr. Paul Margolies directs the Individual Placement and Support (IPS) and Wellness Self-Management (WSM) initiatives. Another recent study showed how IPS learning collaboratives are facilitating the delivery of supported employment by Personalized Recovery Oriented Services (PROS) programs.

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Center for Practice InnovationsSM
at Columbia Psychiatry
New York State Psychiatric Institute
Building best practices with you.



New York State Psychiatric Institute in Manhattan

From previous page

Dr. Barbara Stanley directs the Suicide Prevention Treatment, Implementation and Evaluation (SP-TIE) initiative. Dixon and Associate Director Liza Watkins direct the Early Psychosis initiative called OnTrackNY. OnTrackNY built on the NIMH-funded Recovery After an Initial Schizophrenia Episode (RAISE) Implementation and Evaluation Study to create the RAISE Connection Program.

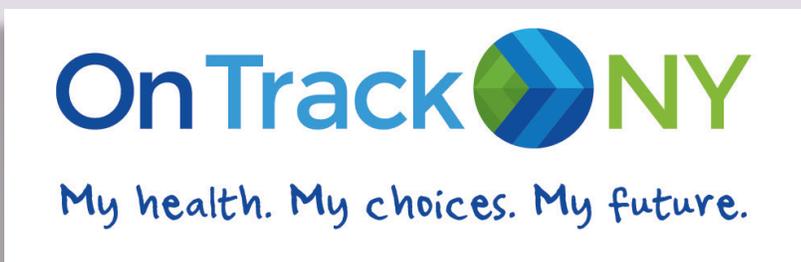
The Connection program developed and tested the outcomes and implementation challenges of a team-based approach to providing an array of pharmacologic and psychosocial services to help young people with recent-onset psychosis get their lives back on track. The RAISE Connection program had very high rates of engagement, doubled rates of participation in school and work, and increased rates of remission from psychotic symptoms.

In collaboration with OMH leadership, RAISE is a model of how scientific research can be swiftly implemented, or “translated,” into community based treatment programs. OnTrackNY provides recovery-oriented treatment to young people ages 16 to 30 who have recently begun experiencing psychotic symptoms, helping them achieve their goals for school, work, and relationships.

This model is now called Coordinated Specialty Care (CSC) and is being promoted nationally by an increase in the Mental Health Block grant to states. In this type of program, a team of specialists work with clients and their families to create personal treatment plans that are based on their individual needs and preferences.



Dr. Lisa Dixon, Director, Center for Practice Innovations at the New York State Psychiatric Institute.



OnTrackNY treatment teams consist of a team leader, primary clinicians, a supported employment/education specialist, an outreach and enrollment specialist, a psychiatrist and nurse. Each team serves up to 35 individuals and provide a range of treatment that includes relapse prevention, illness management, medication management, integrated

substance use treatment, case management, family intervention and support, supported employment, and education. Results from the OnTrackNY program find improvements in engagement, functioning and symptoms that are comparable to the RAISE Connection program.

“Schizophrenia usually emerges in young adulthood and puts the young adults it strikes at huge risk of going off-track,” Dixon said. “OnTrackNY is helping young people stay in school or stay employed while learning how to manage their illness. This program builds on the successes of the RAISE program, which showed that early intervention services help young people who have just started to experience psychosis to stay in school and work.”

The program is currently operating at 10 sites throughout the state. Dixon said that plans are being developed to add several more teams throughout the state over the next year. Participating agencies work with county and municipal mental health departments, and are receiving funds for staff, training, and technical assistance. OnTrackNY will continue to track participants’ recovery, including staying in or returning to school or employment, improved control of mental illness, and, reducing the duration of untreated psychosis.

For more information on these programs, visit <http://nyspi.org> and <http://practiceinnovations.org>. OMH

Hankerson: Promoting Mental Health in African American Communities

There are significant racial/ethnic inequalities in mental health treatment. African Americans with major depressive disorder (MDD) are more disabled, receive lower-quality care, and under-utilize mental health services compared to white Americans with MDD. Several factors contribute to these inequalities, including stigma about mental illness, mistrust of providers, and financial constraints.

Dr. Sidney Hankerson, a psychiatrist who is dually appointed at Columbia University and the New York State Psychiatric Institute, is conducting innovative research to identify ways to overcome these barriers by partnering with churches in New York.

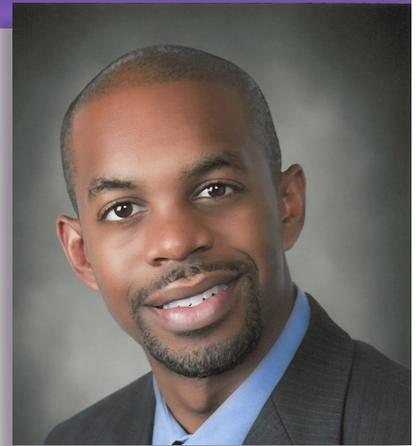
“Churches hold a trusted place in many African American communities,” Hankerson said. “Clergy are often a primary source of mental health education and services. Health professionals have long partnered with churches to address chronic health conditions, including diabetes, cancer, and hypertension. However, major depression is often not addressed by church-based health programs.”

Hankerson’s research found many African Americans preferred talking to their pastor instead of going to mental health professionals. He also found high rates (19.7%) of people at risk of depression at three separate churches in New York City.

Hankerson currently has a four-year study from the National Institute of Health. One of the study goals is training church leaders in Mental Health First Aid, a public education program that teaches the signs and symptoms of depression, how to cope with stress, and a plan to assist in a mental health crisis.

“My professional goal is to have Mental Health First Aid accessible to leaders in every house of worship in the United States,” Hankerson said. “I wholeheartedly believe that church-academic partnerships can increase awareness about depression, reduce stigma, and help people get the care they need.”

To learn more about Hankerson’s research or have him conduct a mental health workshop at your organization, visit www.sidneyhankerson.com. OMH



Dr. Sidney Hankerson

Denny: Studying Memory Traces on the Brain

Dr. Christine Ann Denny’s lab at NYSPI’s Division of Integrative Neuroscience is working to understand how memories are formed and retrieved under normal and diseased conditions. Previously, Denny genetically engineered a mouse that allows an individual memory to be tagged with a fluorescent marker. These mice allow Denny and colleagues to identify and manipulate individual memories under a number of conditions.

“We are focusing on identifying memory traces in order to understand how they are formed, how memory loss can be halted or reversed, or in the case of trauma, if aversive memories can be fixed or erased,” Denny said. Her lab uses optogenetics – a groundbreaking technique that uses lasers to monitor and control individual neurons, and to measure the effects of these manipulations.

Using optogenetics, researchers genetically engineered neurons to produce a protein that can be activated by light. Shining a light onto the protein turns on or off the specific neurons that constitute a memory trace. “With this technique we’re able to partially block retrieval of a fear memory by optogenetically inhibiting the corresponding memory trace,” she said, “This essentially ‘silences’ the cells that constitute part a fear memory.”

Her research has found how stress, depression, and time affect these memory traces. For example, she has begun understand how memories become less precise with time by localizing impaired memory traces to a part of the brain called the hippocampus.

The team is continuing its research to compare memory traces in mice that have cognitive decline by utilizing normal aged mice or Alzheimer’s Disease mice. “We hope to identify how to memories are impaired with cognitive disorders and then to stimulate them in order to improve memory retrieval,” Denny said. “We hope that these studies might halt, or even reverse, memory loss in these disease states.” OMH



Dr. Christine Ann Denny

Nathan S. Kline Institute: World-Class Patient-Oriented Research

Known as one of the most influential research institutions in the world, the Office of Mental Health's Nathan S. Kline Institute (NKI) for Psychiatric Research in Orangeburg has, from its inception in 1952, established an international reputation for the introduction of innovative approaches to the understanding and treatment of psychiatric illness.

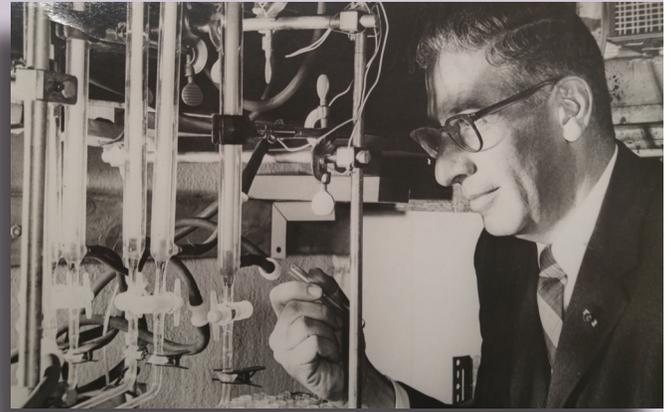
Its pioneering studies have included psychopharmacological treatments for psychiatric illness, the application of computers to psychiatry and development of the first mental health information systems, to current efforts directed at understanding the neurobiological basis of severe disorders such as Alzheimer's and schizophrenia with the goal of developing new treatment. NKI scientists have focused on the physiological, biochemical, and genetic aspects of mental illness and studies the cost, quality, and effectiveness of services for patients in mental health programs certified, operated or funded by New York State.

In addition to direct support from OMH, the NKI receives additional operating support from federal, foundation, and private sources through the Research Foundation for Mental Hygiene and has a strong academic collaboration with the New York University Langone Medical Center.

A sampling of recent research at NKI includes:

- A study conducted with New York University Langone Medical Center on how a specific combination of amino acids act at the earliest stage of Alzheimer's to initiate a range of abnormalities leading to the loss of groups of neurons critical for memory formation.

These findings may have significant implications for treatment strategies and furthering the course of Alzheimer's drug development. Currently, the most common strategy for treating Alzheimer's disease, targeting a different peptide, has had modest success in clinical trials. This research suggests that drugs targeting a different peptide may help slow or stop the progression of Alzheimer's disease.



Dr. Nathan S. Kline



Nathan S. Kline Institute in Orangeburg

An NKI team has shown that reminders of early life abuse can actually help to reduce depression-like behaviors in adulthood. Early findings suggest that infant trauma cues share properties with antidepressants and safety signals and provide insight into mechanisms by which infant trauma memories remain powerful throughout life.

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From previous page

The researchers also analyzed this phenomenon at the molecular level, demonstrating that the effect of the trauma cues are directly related to the levels of serotonin and corticosterone in the brain. The results were published recently in the *Proceedings of the National Academy of Sciences*.

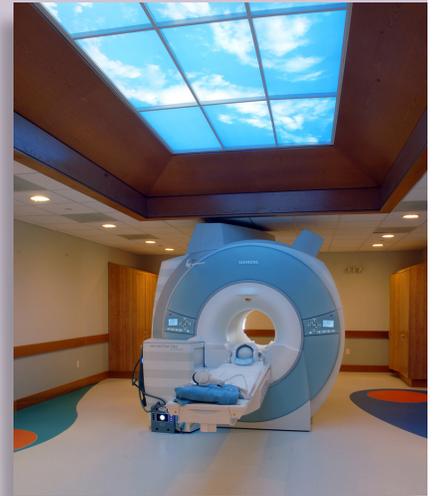
- The Nathan Kline Institute-Rockland Sample (NKI-RS) initiatives at NKI continue to provide a model for accelerating the pace of scientific discovery for mental illness and open science. Originating in 2010, the NKI-RS initially aimed to use magnetic resonance imaging (fMRI) to cross-sectionally map human brain function and structure, as well as cognitive, behavioral and psychiatric function across the lifespan (ages: 6-85; sample size = 1000).

Central to the NKI-RS model, is the open sharing of the data generated with other scientists in the community – as it is collected. This collaborative model is helping to pioneer open science in the brain imaging community, with clear benefits (i.e., more than 70 peer-reviewed manuscripts have been published from independent investigators). In recognition of the success of the NKI-RS effort, the National Institutes of Health have provided multiple grant awards, which collectively aim to increase the size of the sample, add longitudinal components focusing on brain development and aging, and to add novel ways of looking at brain function (e.g., real-time neurofeedback).

- Currently, the Center of Biomedical Imaging and Neuromodulation (C-BIN) at the NKI, which oversees the NKI-RS, is working to take the next major step in scientific discovery – namely, the refinement and application of emerging techniques for modulating brain function (e.g., brain stimulation). This next step is critical, as it will offer the potential to identify novel, non-pharmacologic, therapeutics for the treatment of mental illness, which is particularly needed for cases of mental illness that are not responsive to medication management.



Dr. Donald C. Goff, Director,
Nathan S. Kline Institute



Increased image clarity provided by this 3T MRI gives NKI's researchers the most up-to-date technology in understanding the functions and illnesses of the brain.



A confocal microscope can provide NKI researchers with the magnification and resolution necessary for investigating how disease alters cellular structure and the concentration proteins in the brain.

“All of our work is intended to improve care for people suffering from complex, severely disabling, long-term mental illness,” said NKI Director Dr. Donald C. Goff. “Our research is patient-oriented and emphasizes causes, diagnosis, treatment, prevention, and care of mental illness.” For more information, visit the NKI website: (<http://www.rfmh.org/nki>). ^{OMH}

NYS PROMISE: A Research Project That's Providing Opportunities for Youth

New York State's PROMISE initiative is a \$32.5 million research project to explore ways to help youth with disabilities who receive Supplemental Social Security Income (SSI) make a successful transition to adulthood. PROMISE also seeks to provide supports to the student's family to encourage their support in the transition process.

"PROMISE," short for "Promoting the Readiness of Minors in Supplemental Security Income," is working to recruit 2,000 students, ages 14 to 16, and their families for this project.

"There's a critical need to improve educational and employment opportunities for these students," said Andrew Karhan Project Director for the New York State PROMISE initiative. "Thousands of youth and their families in New York State rely on SSI on a source of income. However, other national studies have previously shown that a large proportion of these youth don't complete high school, or find work after leaving school."

Their families tend to have more than one member with a disability, lower levels of educational achievement, and a lack of access to information and support to increase self-sufficiency. These youth are also more likely to spend time in prison as adults or stay on SSI for the rest of their lives.

PROMISE was jointly developed by the U.S. Departments of Education, Health and Human Services, and Labor, and the U.S. Social Security Administration to address these issues.

New York's award was one of six granted nationwide in October 2013. The state's demonstration is being coordinated by OMH, the contract is being administered by the Research Foundation for Mental Hygiene, and research and capacity building activities are being conducted by Cornell University's K. Lisa Yang and Hock E. Tan Institute on Employment and Disability.

The New York State intervention model is designed to support schools and communities in providing high quality transition services for SSI youth, while recognizing that the needs of each community and student are unique. The initiative is focused on particular outcomes-based interventions in order to generate specific targeted outcomes.

To be eligible, families must live in the New York City, the Capital Region, or Western New York, and attend school in one of the participating Local Education Agencies (schools). Enrollees are randomly selected to receive additional coordinated services and supports to:

- Develop strong and effective partnerships with agencies that provide key services to youth who receive SSI and their families.
- Implement effective practices at local demonstration sites, targeted to the needs of young SSI recipients and their families.
- Evaluate interventions via rigorous project design and data collection procedures.

Participating families receive special invitations to PROMISE orientation and recruitment events through variety of outreach avenues including their child's school, regional parent center, letters, postcards, and personal phone calls. Enrollment ends April 30, 2016, but the services for youth and families have already begun, and will continue through September of 2018.



New York State's PROMISE project is a collaborative initiative that includes the following statewide partners: Office of Mental Health, Cornell University K. Lisa Yang and Hock E. Tan Institute on Employment and Disability, State Education Department, Department of Labor, Office of Children and Family Services, Department of Health, Employment Services System, Office for People With Developmental Disabilities and the Developmental Disabilities Planning Council.

For more information, visit the PROMISE website: www.nyspromise.org. OMH

Screening for Physical Health Problems in Mental Health Consumers



Dr. Gregory Miller, OMH Medical Director of Adult Services

A person's overall health is essential to their mental health. It wasn't clear just how essential until recent research showed that people with serious mental illness were dying younger than the general population – an average of almost 25 years earlier.

To a team of OMH researchers, investigating this connection is a matter of saving lives.

“Studies had shown that many people with serious mental illness were dying prematurely from the same causes of death that affect the general population – such as heart disease, diabetes, cancer, stroke, and pulmonary disease,” said OMH Medical Director of Adult Services Dr. Gregory Miller. “But they're dying at a more frequent rate. Nearly 90% were related to poor treatment for health factors such as diabetes, smoking, blood pressure, and obesity – all risk factors that are treatable.”

Smoking was already a known issue. Prior studies had shown that the rate of smoking in chronically mentally ill populations is nearly three times the rate of smoking in the U.S. adult population, and that the quit rate was lower, as well. Being that some medications to treat mental illness can have side

effects, such as weight gain, it's vital that mental health professionals keep track of consumers' health. So vital, that the National Association of State Mental Health Program Directors in 2008 recommended using a standard set of indicators to monitor the health of individuals served in mental health settings.

The very next year, Lloyd I. Sederer, Chief Medical Officer of OMH, launched the New York Health Indicator Initiative to improve the overall health of adult mental health patients in the state system. All 66 OMH adult outpatient clinics begin monitoring the body mass index, blood pressure, and tobacco use of all patients every three months.

“These three easy to collect measures can predict risk for many chronic medical illnesses,” Miller said. The difficulty in getting accurate blood pressure measurements led to improvements in the equipment and training related to monitoring blood pressure in OMH clinic settings. Clinic staff was given access to online training and support to help them organize a curriculum for wellness self-management and for the integration of tobacco cessation into counseling and treatment. Besides tobacco cessation, some clinics offer groups to support wellness, weight loss, and exercise.

The success of this project would depend on having an effective system to monitor and track reporting and outcomes, so OMH created an online dashboard. This way every facility can access this information and use the data to develop individualized programs. Some mental health clinics are collaborating with local medical facilities; some are using their own medical staff. Many are developing wellness programs including weight loss or tobacco-cessation programs.

Initial findings indicated that nearly 50% of the 15,000 people served in adult outpatient clinics in 2009 were screened by the end of the first year. The numbers are increasing – and encouraging. Currently, over three quarters of adult visiting OMH outpatient clinics statewide are getting these measurements every three months, and virtually everyone gets at least one or two measurements per year.

A paper on the team's analysis, “Sustaining Physical Health Screening in New York State Mental Health Clinics” has been accepted for publication in *Psychiatric Services* in 2016. The findings of this study suggest that targeting weight loss and smoking cessation interventions to subgroups that are at high risk of health consequences due to obesity or smoking status may be a good strategy. It adds that continued work is needed to identify critical points of intervention to prevent weight gain and promote weight loss and smoking cessation in this population.

“Because these health conditions are chronic, change will take time,” Miller said. “But this research will give us a baseline to start from, and it will help our consumers to take better care of their health.” OMH

