

Department of Psychiatry and Behavioral Sciences

Northwestern University Feinberg School of Medicine



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A New Chapter

"It is with great optimism and commitment that we begin a new chapter in the illustrious story of the Department of Psychiatry and Behavioral Sciences. We are optimistic that unprecedented technological advances in brain sciences will lead to new and innovative treatment approaches for debilitating illnesses including depression, schizophrenia, posttraumatic stress disorders (PTSD), and substance use disorders. We are optimistic that the growing appreciation that mental health and wellbeing are critical to a successful and thriving society will reduce stigma and increase access to care for all those who need it. The fact that more medical students and scientists than ever before are choosing to pursue careers in clinical psychiatry and psychiatric neuroscience gives us great optimism that the future holds unparalleled opportunities for advancing patient care and expanding our basic understanding of mental illnesses and how to better treat them.

It is with deep dedication that we commit to advance the Department of Psychiatry and Behavioral Sciences to greater national prominence as a leader in mental health research, education, and innovative clinical care models. We hope you will share our optimism and commitment and help us write our next chapter together. Herein, we unveil our plans for new flagship initiatives and highlight ongoing high-impact research and clinical centers that will lead the department through the next phase of exciting and innovative expansion."

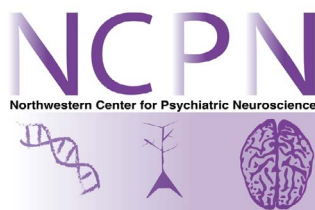
Sachin Patel MD, PhD

Chair and the Lizzie Gilman Professor of Psychiatry and Behavioral Sciences
Northwestern University Feinberg School of Medicine



Northwestern Center for Psychiatric Neuroscience

Conceptually new approaches to the treatment of mental illness have been sparse over the past 40 years. This is in large part due to our limited fundamental understanding of how mental disorders arise in the brain. Indeed, understanding how the brain processes the sensory world, executes cognitive functions, and gives rise to emotions, as well as uncovering how these functions deteriorate in disease, represent the greatest challenges of the 21st century.



To meet this call, a major focus of Dr. Patel and his team will be to launch the new *Northwestern Center for Psychiatric Neuroscience (NCPN)*. The center will focus on understanding how genetic/epigenetic factors, immune activation, and environmental and social stress impact brain structure and function to contribute to the development and exacerbation of major mental illnesses including depression, schizophrenia, PTSD, and addictions. The past two years have highlighted unequivocally the adverse consequences of stress on our society at every level and its impact on the mental well-being of our community. A major focus of NCPN investigators will be aimed at revealing novel mechanisms of stress resilience that could have broad impact on mental health

treatment for the future. The program will house a group of tightly knit physicians and scientists that will synergize their efforts with existing centers and departments and focus on revealing new brain mechanisms underlying mental illness and on how to translate these discoveries toward identification and exploitation of new targets for therapeutics development.

Moreover, non-traditional therapies such as cannabinoids, ketamine, and psychedelic substances for treatment-resistant mental illness are being actively studied in patients, but how these drugs act on the brain remains largely mysterious. Another aim of the NCPN is thus to elucidate how these powerful emerging therapeutics affect brain structure and function to exert potentially beneficial effects on mental health and disease. Center investigators will utilize cutting-edge brain imaging approaches, patient-derived stem cell models, laboratory animal model systems, neuronal-circuit based approaches, and clinical studies to achieve these objectives with a goal of advancing the Department of Psychiatry and Behavioral Sciences to further national prominence as a leader in translational and psychiatric neuroscience.

Investigator Highlights

Stewart Shankman, PhD

Chief of Psychology in the Department of Psychiatry and Behavioral Sciences
Professor of Psychiatry and Behavioral Sciences (Psychology)



Dr. Shankman's laboratory conducts multi-method research on the relationship between mood and anxiety disorders, the nature and identification of early risk factors of emotional disorders, and basic questions in the study of emotion. His research program integrates innovative clinical and epidemiological approaches with neuroscientific methods. For example, in order to identify markers that predict relapse of depression in adolescence, one of his studies is studying multiple aspects of how adolescents process social communication – including utilizing a novel smartphone app that processes social

information from adolescents' everyday lives (e.g., the messages they send/post on social media, their geolocation traveled, etc). Understanding these processes may lead to groundbreaking early detection strategies that could help predict which adolescents are at highest risk for a poorer course of depression.

Sachin Patel, MD, PhD

Chair and the Lizzie Gilman Professor of Psychiatry and Behavioral Sciences, Department of Psychiatry and Behavioral Sciences

Dr. Patel's laboratory investigates novel mechanisms of stress resilience with implications for understanding the pathophysiology of PTSD and depression. His work is focused on understanding how "endogenous cannabinoid" molecules, that exert actions at the same brain targets as THC derived from cannabis plants, regulate stress responsivity, and how exploiting these cannabinoid-like molecules could be used to develop novel drug treatments. Dr. Patel's seminal research formed the basis for ongoing clinical trials of monoacylglycerol lipase inhibitors for the treatment of anxiety disorders and depression. His research is also revealing how manipulations of brain cannabinoid molecules can reduce alcohol drinking in preclinical models, and how targeting this system could represent the next generation of anti-addiction treatments. His work has been funded by the National Institutes of Health and private research foundations for over 15 years, and his results have been published in top scientific journals including *Nature Neuroscience*, *Neuron*, *The Journal of Clinical Investigation*, and the *Proceedings of the National Academy of Sciences*.

Hongxin Dong, MD, PhD

Professor of Psychiatry and Behavioral Sciences and Neurology

Dr. Hongxin Dong's laboratory focuses on the genetic and environmental influences on aging and their relevance to the pathogenesis of neuropsychiatric disorders, including the behavioral and cognitive symptoms of Alzheimer's Disease (AD). In particular, Dr. Dong's translational research program uses clinical and postmortem tissue data sets, as well as animal models to discover novel molecular, genetic, and epigenetic mechanisms underlying neuropsychiatric symptoms and AD, and their interaction. Her research will help to discover novel targets and develop new therapeutic strategies to delay disease onset and/or slow disease progression. Importantly, her laboratory like many others is also an education center in which many undergraduate students, graduate students, and postdoctoral fellows train to become successful, independent research faculty, highly-skilled clinicians, and leaders in industry, both nationally and internationally. Dr. Dong's commitment and that of other faculty in the Department of Psychiatry and Behavioral Sciences will further the understanding of neurobiology during aging and impact the treatment of neuropsychiatric disorders in the future.



In addition to the Northwestern Center for Psychiatric Neuroscience, we are pleased to share details about other leading-edge efforts in the Department of Psychiatry and Behavioral Sciences, including our newly launched Northwestern Interventional Psychiatry Program, the Asher Center for the Study and Treatment of Depressive Disorders, and Health Disparities & Public Policy Program.

Northwestern Interventional Psychiatry Program (NIPP)

Our field has been in dire need for fast-acting treatments for patients who are acutely suicidal or self-injurious. Moreover, some patients who do not benefit from standard treatments, such as psychotherapy or medications, are desperate for novel non-invasive treatments to help them feel better and ultimately recover to lead productive lives.

Northwestern Psychiatry aims to expand its current interventional psychiatry repertoire, which comprises Electroconvulsive Therapy and Transcranial Magnetic Stimulation therapy. In recent years, intravenous (IV) ketamine has emerged as a repurposed anesthetic to treat severe and refractory depression and suicidal ideation. We plan to design and initiate an IV Ketamine Therapy Clinic to serve our acutely ill patients. Another emergent and novel interventional psychiatric treatment program named Chronotherapy aims to exploit the daily energy and metabolic cycles of our body and our sleep behaviors, which are tightly linked to mood. This treatment modality is very safe and can be combined with all other psychiatric treatments to enhance benefits. Other new rapid-acting treatments, such as IV neurosteroids for acute postpartum depression, will be used to further expand the repertoire of the NIPP. Adding these cutting-edge therapeutic modalities to our current services will elevate the utility of our program in the community and enhance its reputation nationally. Lastly, in the coming years we aim to develop a fellowship training program in Interventional Psychiatry focused on training the next generation of psychiatrists to use established, cutting-edge, and newly developing rapid-acting treatments to alleviate severe treatment-refractory mental illness.

Asher Center for the Study and Treatment of Depressive Disorders

The Asher Center for the Study and Treatment of Depressive Disorders engages in cutting-edge clinical research and mental health services that contribute to breakthroughs in the scientific understanding of the mood disorders. With the leadership of Katherine Wisner, MD, the center fosters an intellectual environment that stimulates innovation and creativity, improves diagnostic services, and develops novel treatment and prevention strategies for mood disorders. The primary research interest of program investigators is the treatment of mood disorders across the female reproductive lifespan, with an emphasis on the perinatal period.



In addition to its research mission, the Asher Center offers fellowship training opportunities to complement existing clinical and research initiatives in women's and perinatal mental health. The Asher Center is committed to recruiting and training fellows to provide care for women across the reproductive lifespan, and particularly during pregnancy and postpartum.

Health Disparities & Public Policy Program

Using a social justice perspective, the Health Disparities & Public Policy Program studies the mental health needs of traditionally underserved populations, such as racial and ethnic minority groups, persons living in poverty, and those who are homeless. Led by Dr. Linda Teplin, they established 40 years ago the key unintended consequence of deinstitutionalization—jails had become the poor person's psychiatric hospital. Since then, the program uses state-of-the-art scientific methods to investigate the underlying causes and remedies of problems that disproportionately affect the underclass: substance abuse, mental health disorders, HIV/AIDS, firearm injury and death, and the long-term consequences of incarceration for individuals and their families. Funded by the National Institutes of Health, the Centers for Disease Control, the Department of Justice, and other federal agencies and private foundations, the program provides the empirical basis needed to guide change in public health policy and law.

Currently, the Health Disparities & Public Policy Program houses two groundbreaking and highly influential research studies. Now in its 26th year, the *Northwestern Juvenile Project* is the only large-scale, longitudinal study of the health needs and outcomes of youth in the juvenile justice system. The program chose to study these youth because many children from poor families who have psychiatric disorders are arrested instead of treated. As they age, they are at great risk for poor outcomes, including continued psychiatric disorders, HIV/AIDS, and premature violent death. *Next Generation* is the first intergenerational study of its kind: The investigators are examining the children of their original participants, determining characteristics that promote resilience in children from high-risk families.



Results of studies conducted within the program have been published in journals that are broadly read, widely distributed, and effect change in public health policy, including *JAMA Psychiatry*, *JAMA Pediatrics*, *Pediatrics*, and the *American Journal of Public Health*. Findings are cited by the Surgeon General in amicus briefs to the Supreme Court, in Congressional hearings, and by federal agencies, private agencies, and advocacy groups.

Please Join Us in Partnership

With the incredibly important support of committed individuals, corporations, foundations, and external grantors, the Northwestern Center for Psychiatric Neuroscience is poised to become a national leader in investigation of brain mechanisms of, and novel therapeutic targets for, mental illnesses. We invite interested friends to consider the following funding areas and priorities, which will help to grow and sustain our infrastructure, help us to recruit the best and brightest faculty talent from around the world, and fulfill the extraordinary potential of the Department of Psychiatry and Behavioral Sciences and the Feinberg School of Medicine.

Philanthropic Opportunities

Endowing and Naming the Northwestern Center for Psychiatric Neuroscience	\$10 million
Endowing and Naming Professorships	\$3 million
Endowing and Naming Fellowships	\$1.5 million
Supporting Pilot/Seed Research Funding Awards through Outright and Endowed Gifts	\$10,000+

For more information about supporting the Department of Psychiatry and Behavioral Sciences, please contact:

Andrew P. Christopherson, PhD

Assistant Dean for Development

Development & Alumni Relations

Northwestern University Feinberg School of Medicine

Phone: 312-503-3080; Email: andrew.christopherson@northwestern.edu

Department of Psychiatry and Behavioral Sciences: <https://psychiatry.northwestern.edu>