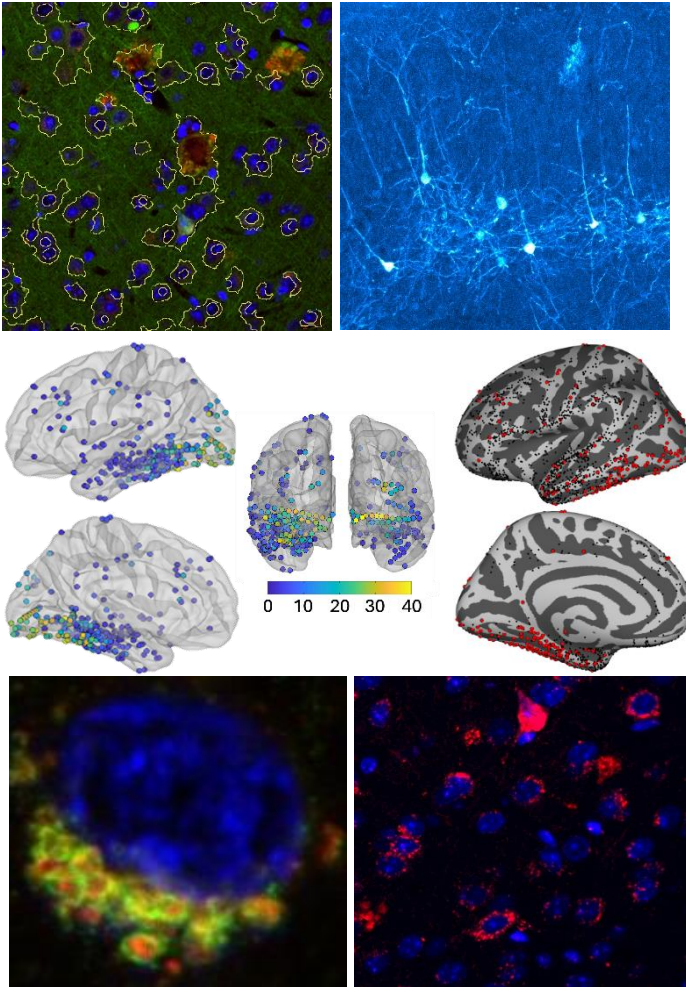


Science Day 2026

Nathan Kline Institute



May 5th, 2026

12:30-4:30 PM

*Brought to you by the
Community Building
Committee*

Melissa Alldred

Goi Khia Eng

Alex Franco

Renee Hartig

Annette Moreno

Brian Russ

Rob Sears

Kuldeep Sachdeva

Philip Stavrides

Emily Stern

Catia Teixeira

Sharifa Williams

Program

12:30-12:45 Welcome and Introduction

12:45-1:15 Keynote

Transcranial photobiomodulation for mood and cognitive disorders

Dan Iosifescu, MD, MSc

Deputy Director and Research Psychiatrist, Nathan Kline
Institute for Psychiatric Research

1:15-1:30

Defective Rab5-dependent NGF endocytosis and signaling lead to Cholinergic Neurodegeneration in Frontotemporal Dementia Tauopathy Mouse Model

Kuldeep Sachdeva, PhD

Postdoctoral Fellow, Center for Dementia Research, NKI

1:30-1:45

Treatment Resistance Removes the Differential Effects of Dopamine Binding Levels on Speech Patterns in Schizophrenia

Jean-Pierre Lindenmayer, MD, PhD

Director, Manhattan Schizophrenia Research Center,
Manhattan Psychiatric Center

1:45-2:00

Neural Correlates of Self-Processing in Obsessive-Compulsive Disorder and Major Depressive Disorder

Madison Sakalosky, BA and Caroline Palermo, BA

Research Assistants, Clinical Research, NKI

2:00-2:15

My 30 years at NKI (in context)

Stuart Moss, MS

Library Director, NKI

2:15-2:45

Refreshments and poster placements

2:45-4:20

Poster presentations

4:20-4:30

Closing Remarks and Poster Awards

Poster Presentations

1. *Effects of Transcranial Direct Current Stimulation (tDCS) on Symptoms and Brain Changes in Patients with Autism*
Robert C Smith
2. *Bayesian Deconvolution Reveals Cell-Type-Specific Effects of Early-Life Experience in the Hippocampus*
Brian Hurwitz, Yotam Sagi, Paolo De Angelis, Janet Chang, Dani Zelli, Betty Bigio*, & Carla Nasca* (*co-senior authors)
3. *Rapid Estimation of Sensorimotor Control in the Continuous Performance Critical Stability Task Predicts Cognitive Ability, Academic Achievement, and Cardiorespiratory Fitness*
Daniel Garcia-Barnett, Yunglin Gazes, Anna MacKay-Brandt, Stan Colcombe
4. *Insights From PIP-Seq into Early Hyperexcitability in an Alzheimer's Disease Mouse Model*
Gabriel Stephens, David Alcantara-Gonzalez, Helen Scharfman
5. *Postnatal Ethanol Vapor Exposure Disrupts EZH2-Dependent Epigenetic Regulation and Promotes Neurodegeneration in Neonatal Mice*
Balapal S. Basavarajappa
6. *Postnatal Ethanol Vapor Exposure Enhances EZH2 Expression and Promotes Neurodegeneration, Synaptic, and Behavioral Abnormalities in Mice*
Shivakumar Subbanna, Madhu Shivakumar, Balapal S. Basavarajappa
7. *Cutting through the Matrix: Comparative Analysis of Enzymatic Methods for Brain Extracellular Vesicle Isolation*
Galit Blecher, Logan Jones, Chris Goulbourne, Monika Pawlik, Yun-Juan Chang, Pasquale D'Acunzo, Efrat Levy
8. *Acute anti-PrPC Treatment Rescues Synaptic Integrity, Improves Cognitive Function, and Reduces Anxiety in Advanced-stage Alzheimer's Disease Models*
Xutong Guo, Tong Zhao, Julia Janknecht, Xiaoyi Yang, Thomas Wisniewski, Shuo Chen

9. *Decoupled Surrogate Networks for Efficient Background Input Optimization in Biophysical Circuit Models*
Nikita Novikov, Scott McElroy, James Chen, Charles Schroeder, Stephan Bickel, Monica N O'Connell, Salvador Dura-Bernal, Samuel Neymotin
10. *Low Levels of Anxiety Associated with Enhanced Cognitive Functions in a Cohort of Cognitively Unimpaired Elderly*
Andrew Orefice, Nunzio Pomara, Chelsea Reichert Plaska
11. *Psilocybin Induced Synaptic Plasticity in Aca Neurons That Feedback to Visual Areas*
Molly A. Hornick, Lital Rachmany, Fumiyasu Imai, Jordan P Hamm
12. *Grid-Cell-Driven Reinforcement Learning Enables Multi-Goal Maze Navigation in Spiking Neuronal Networks*
Gozde Unal, Christopher Earl, Hananel Hazan, Samuel A Neymotin
13. *Elucidate The Role of Mitochondria-Derived Extracellular Vesicles in the Higher Risk for Sporadic Alzheimer's Disease Associated with the Apolipoprotein E4 Allele*
Maria Luisa Valle, Mallory Downs, Elentina K. Argyrousi, Monika Pawlik, Ottavio Arancio, Pasquale D'Acunzo, Paul Mathews, Efrat Levy
14. *Biophysical Model of Auditory Thalamocortical Circuit Reveals GABA-Dependent Control of N1 Deficits in Schizophrenia*
Ethan Irby, Nikita Novikov, Scott McElroy, Andrea Balla, Charles Schroeder, Salvador Dura-Bernal, Monica Noelle O'Connell, Daniel Javitt, Samuel Neymotin
15. *Human Single-Unit Recordings in Globus Pallidus Externus (Gpe) Reveal Preparatory Switch-Selective Activity During Reversal Learning in OCD Patients*
Amber Kiely, Martijn Figee, Brian H. Kopell, Zarghona Imtiaz, Ha Neul Song, Sonia Olson, Abigail Kiro, Helen S. Mayberg, Allison C. Waters, Ki Sueng Choi, Vincenzo Fiore, Andrew H. Smith

16. *Loneliness And Suicidal Ideation and Behavior in Schizophrenia and Depression*
Michael Kuhl, Jewel Bell, Julia Chafkin, Kate Collins, Heather Doherty, Kelly Kwong, Stuti Munjal, Tyler Pia, Sara Rose Shannon, Anthony Ahmed, Faith Gunning, Dan V. Iosifescu, Matthew Hoptman
17. *Spontaneous Reactivation of Tiktok Video Experiences During External Sustained Attention*
Hyun-Woong Kim, Teddy Hoppe, Jenna Lembo, Karl-Heinz Nenning, Alexandre Franco, Stanley Colcombe, Michael Milham, Arielle Tambini
18. *Image Guided Cell Sorting in Silica Reveals Transcriptomic and Proteomic Differences Between Pathology States of a 5xFAD Transgenic Mouse Model*
Christopher Bare, Phil Stavrides, Sandip Darji, Ralph Nixon
19. *Reward-Modulated Delay Learning in Spiking Neural Networks for Adaptive Control in Pong*
Rachel Dynkin, Christopher Earl, Gozde Unal, Hananel Hazan, Samuel Neymotin
20. *Individual, Cultural, and Neighborhood-Level Buffers: Differential Effects on Physical and Emotional Outcomes of Posttraumatic Stress in Black and Puerto Rican Americans*
Kerstin Pahl, Xinyu Ding, Navin Sanichar, Joelle Floyd, Sharifa Z. Williams
21. *Visual Contrast Manipulation in The Digit Symbol Substitution Test Reveals the Role of Early Visual Processing in Greater Cognitive Dysfunction in Schizophrenia*
Maxwell Greisberg, Antigona Martinez, Maria B. Aburto-Ponce, Kristin Micceri, Daniel C. Javitt
22. *Defective Rab5-dependent NGF endocytosis and signaling lead to Cholinergic Neurodegeneration in Frontotemporal Dementia Tauopathy Mouse Model*
Kuldeep Sachdeva, Martin J. Berg, Sandip Kumar Darji, Chris Goulbourne, Cynthia Bleiwas, Philip H. Stavrides, Erica Engelberg-Cook, Monica Castanedes-Casey, John F. Smiley, Mala V. Rao, Dennis W. Dickson, Ralph A. Nixon

23. *Coordinated Thalamocortical Ensemble Fluctuations During Intermodal Selective Attention*
Chase A. Mackey, Samuel Neymotin, Annamaria Barczak, Charles E. Schroeder, Monica N. O'Connell
24. *Cross-Species Alignment of Duration Mismatch Negativity Using a Unified EEG Analysis*
Yukta Jetalpuria, Andrea Balla, Antígona Martínez, Daniel C. Javitt
25. *A High-Resolution Bioinformatics Pipeline for Identifying Genotypic and Maternal Choline Supplementation Induced Changes Within the Gut Microbiome of a Down Syndrome Mouse Model*
Harshitha Pidikiti, Melissa J. Alldred, Stephen D. Ginsberg
26. *Do mice prefer FM or AM tone?*
Andrea Balla, Yukta Jetalpuria, Monica- Noelle O'Connell, Daniel C. Javitt
27. *Neural Correlates of Self-Processing in Obsessive-Compulsive Disorder and Major Depressive Disorder*
Madison Sakalosky, Caroline Palermo, Goi Khia Eng, Jeanmarie R. Harvey, Katherine A. Collins, Emily R. Stern
28. *Development of a Next Gen 9.4 T Magnetic Resonance System for Translational Neuroscience*
Wasif Zia, Alexandre R. Franco, J. Thomas Vaughan Jr.
29. *Decoding Oscillatory Burst Features Reveals Population-Level Structure of Human Brain Activity*
Alan Diaz-Montiel, Idan Tal, Noah Markowitz, Shany Grossman, Elizabeth Espinal, Gelana Tostaeva, Charles Schroeder, Ashesh Mehta, Sam Neymotin, Stephan Bickel
30. *Transcranial Random Noise Stimulation of the Secondary Visual Cortex: Effects on Facial Emotion Recognition and Motion Processing in Autistic Adults*
Marcella Stones, Lucia Tu, María Belén Aburto Ponce, Kristin Micceri, Caixia Hu, Raj Sangoi, Melissa M. Breland, Odeta Beggel, Pejman Sehatpour, Daniel C. Javitt, Antígona Martínez, Russell H. Tobe

31. *Quality of Sleep and Antipsychotic Dose both Impair Cognitive Performance in Individuals with Chronic Schizophrenia*
Anzalee Khan, Beverly Insel, Jean-Pierre Lindenmayer
32. *Comparison Between Different Early Life Stress Models and Their Effects on Neurodevelopment*
Andrea Martinez-Verdu, Fabiula F. Abreu, Victoria Walker, Masago Ishikawa, Brandon Marino, Catia M. Teixeira
33. *Workplace Racial Discrimination as a Psychosocial Hazard: Work Stress and the Protective Role of Family Support among Black and Latinx Workers*
Xinyu Ding, Sankhepo Ndhlovu, Sharifa Williams, Kerstin Pahl
34. *Bi-Directional Chain of Chirality Transfer in Biological Evolution. Ignoring biological geometry and algebra is wrong way to go.*
Victor Dyakin
35. *Short-form Video Consumption Synchronizes Brain Activity and Enhances Vigilance*
Jenna Lembo, Teddy Hoppe, HyunWoong Kim, Samuel Louviot, Eduardo Gonzalez-Moreira, Karl Heinz-Nenning, Alexandre Franco, Michael Milham, Arielle Tambini
36. *Predicting Clinical Response to iTBS in Young Adults with MDD and NSSI: A Go/No-Go fMRI Study*
Vicente Cotanda, Gabriel Behr, Laissa Harumi Furukawa, Giovanna Bertoldi, Ricardo Boff, Inais Andrade, Nicolas Stanton, Luiza Costa Silva, Mirna Portuguez, Jaderson Costa da Costa, Lucas Spanemberg, Alexandre Franco
37. *In vivo 7 Tesla MRI of Intracortical Microvascular Architecture and Blood Flow Velocity in Macaque Monkey Brain*
Yuqi Feng, Jianbao Wang, An Ping, Feiyan Tian, Yipeng Liu, Yi-Chang Hsu, Jonathan R. Polimeni, Anna Wang Roe
38. *Infrared Neural Stimulation in V1 Produces Intensity-Dependent Perceptual Biases in Awake Macaques*
Anna Wang Roe, Sunhang Shi, Meixuan Chen, An Ping, Feiyan Tian, Jianfeng Fu

39. *Orexins As Anxiety Modulators in Instrumental Safety-Seeking*
Cristina Siller-Perez, Erika C. Andrade, John Smiley, Christopher K. Cain, Robert M. Sears
40. *Religious Engagement and Meaning-Seeking as Coping Pathways During COVID-19*
Alexandra Kohl, Anna MacKay-Brandt
41. *Examining Functional Connectivity During Urge Suppression in Individuals with Obsessive-Compulsive Disorder and Unaffected Siblings*
Goi Khia Eng, Jeanmarie R. Harvey, Katherine Collins, Russell H. Tobe, Dan V. Iosifescu, Emily R. Stern
42. *Top-Down Inputs Show Context-Selective Synchronization with V1 Spiking Following Focal N-Methyl-D-Aspartate Receptor Blockade*
Connor G. Gallimore, Jay Abraham, Adam Hockley, Jordan P. Hamm
43. *Topography Of Tuning to Acoustic Bandwidth Across the Supratemporal Plane in Macaques*
Yoshinao Kajikawa, Chase A MacKey, Ian Chong
44. *A Pharmacy-Based Opioid Use Disorder Care Model: Implementing Participant Navigation*
Zoe Bertone, Xinyu Ding, Helen-Maria Lekas, Babak Tofighi, Crystal Fuller Lewis
45. *Investigating The Laminar Signatures of Mismatch Negativity to Frequency-Modulated Sweeps in Macaque Auditory Cortex*
Ian Chong, Renee Hartig, Chase A. Mackey, Tammy McGinnis, Kieran Mackin, Annie Barczak, Dan C. Javitt, Noelle M. O'Connell

Notes

Notes

Thank you for attending NKI Science Day 2026!



Front Cover Photo Credits (top to bottom, left to right):

Chris Bare, “RNAmapping: Overlay of threshold RNA content on TRGL x 5xFAD pathology (green eGFP, red mRFP1, and blue DNA).”

Molly Hornick, “Feedback circuits of ACa neurons that project to V1.”

Alan Diaz-Montiel, “Exemplar images for decoding categories of animals, patterns and places” and “Feature importance with total number of electrodes (blue) and number of electrodes with the greatest feature importance (red) for each region.”

Kuldeep Sachdeva, “Dysfunctional lysosomes in Tauopathy (Nucleus-blue, Limp2-green, Cathepsin D-red).”

Chris Bare, “Perinuclear: Lysosomes containing mRFP1 (red) localized around neuronal nuclei (blue).”