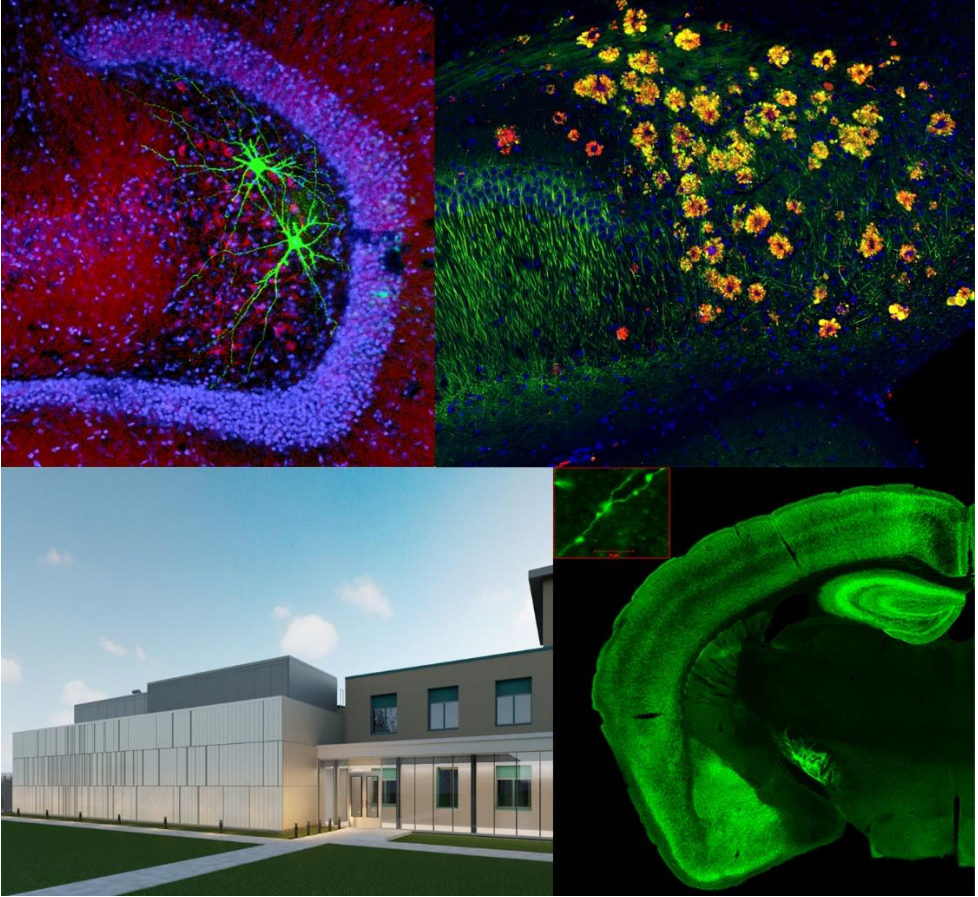


*The Nathan Kline
Institute Presents
Science Day 2024*



*April 30th, 2024
12:30-4:30 PM*

*Brought to you by the
Community Building
Committee*

Melissa Alldred

Pam Butler

Alex Franco

Renee Hartig

Ying Jiang

Amanda Labuza

Annette Moreno

Brian Russ

Rob Sears

Emily Stern

Catia Teixeira

Sharifa Williams

NKI Science Day

12:30-12:40 Welcome and Introduction

12:40-1:15 Lifetime Achievement Talk

Perceptual and Cognitive Deficits in Severe Mental Illness

Pamela Butler, PhD

Research Scientist, Nathan Kline Institute for Psychiatric Research and Associate Professor of Psychiatry, New York University Langone School of Medicine

1:15-1:30

Racism Hurts: Race-Based Traumatic Stress Predicts Bodily Pain in Midlife Black and Latinx Americans

Maggie Ding, MS

Research Assistant, Social Solutions and Services, NKI

1:30-1:45

tDCS-Induced Modulation of Face Emotion Processing Deficits in Sz

Maria Aburto, PhD

Postdoctoral Fellow, Schizophrenia Research Department, NKI

1:45-2:00

Development of a Next Gen 9.4 T Magnetic Resonance System for Translational Neuroscience

Wasif Zia, PhD

Research Scientist, Center for Biomedical Imaging and Neuromodulation, NKI

2:00-2:15

Single Cell Multiomic Hyperdimensional Measurement Platforms

Christopher Bare, PhD

Research Scientist, Center for Dementia Research, 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. Electrophysiological Effects of Mitochondria Mitochondria-Derived Extracellular Vesicles: Novel Implications for Memory Dysfunction in Neurodegenerative Disorders*
Pasquale D'Acunzo*, Elentina K. Argyrousi, Jonathan M. Ungania, Yohan Kim, Steven DeRosa, Monika Pawlik, Chris N. Goulbourne, Ottavio Arancio and Efrat Levy
- 2. Sulforaphane for the Treatment of Negative Symptoms in Schizophrenia*
Robert C. Smith*, Jing Huang, Hua Jin, John M Davis, Renrong Wu
- 3. Rumination and psychosis: Exploring brooding, reflection, and dimensions of delusions*
Kari Siu*, Zamfira Parincu, Katherine T. Evans, Umit Tural, Katherine A. Collins, Dan V. Iosifescu
- 4. Gene expression profiles of frontal cortex pyramidal neurons across the Alzheimer's disease spectrum*
Amanda Labuza*, Melissa J. Alldred, Harshitha Pidikiti, Andrea Heguy, Paul D. Coleman, Elliott J. Mufson, Stephen D. Ginsberg
- 5. Persistent Δ FosB activity is required for seizure restriction and neuroprotection in the dentate gyrus of J20 APP mice*
Gabriel S. Stephens*, Yi Zheng, Jin Park, Manuel Silva-Pérez, Andrew Eagle, Jason You, Chia-Hsuan Fu, Sumin Choi, Chiho Sugimoto, Shelly Buffington, Mauro Costa-Mattioli, Yin Liu, AJ Robison, Jeannie Chin
- 6. Predicting the epileptic seizure onset zone with brain-wide alterations of temporal dynamics in fMRI*
Karl-Heinz Nenning*, Erkam Zengin, Ting Xu, Gelana Tostaeva, Elisabeth Freund, Stanley J. Colcombe, Ashesh D. Mehta, Michael P. Milham, Stephan Bickel
- 7. Interoceptive dimensions in patients with obsessive-compulsive disorder with and without comorbid depression*
Nicolette Recchia*, Pearl Kravets, Goi Khia Eng, Laura B. Bragdon, Katherine A. Collins, Emily R. Stern

8. *Flexible tracking of rhythmic acoustic streams in parallel thalamocortical circuits*
Chase A. Mackey*, Annamaria Barczak, Sam Neymotin, Troy A. Hackett, Charles E. Schroeder, Monica N. O'Connell
9. *Involvement of the calcium-activated potassium channel (KCA3.1) in apoptotic neurodegeneration and neuroinflammation induced by ethanol in neonatal mice*
Mariko Saito*, Shivakumar Subbanna, Zhang Xiuli, Nitesh Nandwana, John Smiley, Donald Wilson, Bhaskar Das
10. *Astroglial changes in the superior temporal cerebral cortex of subjects with major depressive disorder and schizophrenia*
Brandon M. Marino*, Cynthia Bleiwas, Gopika Unnikrishnan, Vinod K. Yaragudri, Gorazd Rosoklija, Andrew J. Dwork, John F. Smiley
11. *Increased excitability of dentate gyrus mossy cells occurs early in life in the Tg2576 model of Alzheimer's disease*
David Alcantara-Gonzalez*, Meghan Kennedy, Chiara Criscuolo, Justin Botterill, Helen E Scharfman
12. *Lysosomal dysfunction in Down syndrome and Alzheimer mouse models is caused by v-ATPase inhibition by Tyr682-phosphorylated APP β CTF*
Eunju Im, Ying Jiang, Philip H Stavrides, Sandipkumar Darji, Hediye Erdjument-Bromage, Thomas A Neubert, Jun Yong Choi, Jerzy Wegiel, Ju-Hyun Lee*, Ralph A Nixon
13. *Orexins as anxiety modulators in instrumental safety-seeking*
Cristina Siller-Perez*, Erika C. Andrade, John Smiley, Christopher K. Cain, Robert M. Sears
14. *Endocytic anomalies in synapses precede amyloid pathology in an AD mouse model*
Kuldeep Sachdeva*, Sandipkumar Darji, Martin Berg, Mala V. Rao, Aidong Yuan, Philip Stavrides, Chris Goulbourne, Evgeny Kanshin, Beatrix Ueberheide, Ralph A. Nixon

15. *\$100 now or more money later? Comparing delayed discounting in obsessive compulsive disorder and major depressive disorder*
Jeanmarie R. Harvey*, Goi Khia Eng, Rachael Moldow, Nicolette Recchia, Laura B. Bragdon, Katherine A. Collins, Emily R. Stern
16. *Interaction of sex and genotype on CSF marker of microglial activation*
Chelsea Reichert Plaska*, Fatima Medrano, Giovanna Novi, Nunzio Pomara
17. *Preliminary findings of virtual reality treatment of treatment refractory auditory hallucinations: Study design and intervention*
Jean-Pierre Lindenmayer, Anzalee Khan, Ibrahim Bukhari*, Theresa Abad, Anthony Ahmed, Jaclyn Green, Mohan Parak, Benedicto Parker, Jewell Bell, Louise Glenthøj, Lise Mariegaard
18. *Hypothalamic theta modulation improves memory*
Shuo Chen*, Linneng He, Zhe Sage Chen, Thomas McHugh
19. *Can you repeat that? I was ruminating. Internal-external attention switching in obsessive compulsive disorder*
Rachael Moldow*, Goi Khia Eng, Emily R. Stern
20. *Early-life prefrontal cortex inhibition and early-life stress lead to long-lasting behavioral, transcriptional, and physiological impairments*
Edenia C. Menezes*, Heather Geiger, Fabiula F. Abreu, Lital Rachmany, Victoria Walker, Donald A. Wilson, Melissa J. Alldred, Francisco X. Castellanos, Rui Fu, Derya Sargin, Andre Corvelo and Catia M. Teixeira
21. *Probing sensory phenomena, interoceptive sensitivity, and neural patterns in individuals with obsessive-compulsive disorder and unaffected siblings*
Goi Khia Eng*, Katherine A. Collins, Laura B. Bragdon, Nicolette Recchia, Jeanmarie Harvey, Russell H. Tobe, Emily R. Stern
22. *High frequency oscillations (>250Hz) outnumber interictal spikes in preclinical studies of Alzheimer's disease*
Christos Lisgaras*, Helen E. Scharfman

23. *A digital platform to detect negative symptoms of schizophrenia through facial and acoustic analysis*
Danyah Nadim*, Jean-Pierre Lindenmayer, , Anzalee Khan, Vikram Ramanarayanan, Kothare Hardik, David Paulter, Mohan Parak, Benedicto Parker, David Suendermann-Oeft
24. *Functional localization of the primary taste cortex in the anesthetized macaque monkey*
Renée Hartig*, Ali Karimi, Henry Evrard
25. *Interaction between serotonergic and dopaminergic signaling in a developmental model of SSRI exposure*
Edenia C. Menezes, Lital Rachmany*, Fabiula F. Abreu, Catia M. Teixeira
26. *Associations between prenatal stress-induced transcriptional changes and cognitive and anxiety behavior deficits in adolescent animals*
Shivakumar Subbanna*, Balapal S. Basavarajappa
27. *Neural correlates of emotion regulation in psychosis with suicidal ideation and behavior*
Matthew J. Hoptman*, Katherine A. Collins, Kathryn Evans, Naomi L. Gaggi, Allison M. Sparpana, Molly, K. Irvin, Zamfira Parincu, Elizabeth F. Sullivan, Dan Iosifescu
28. *Quantification, replication, and predictive utility of a relative brain age metric in the Nathan Kline Institute - Rockland sample*
Olivia Ripley*, Yunghin Gazes, Jessica Cloud, Anna MacKay-Brandt, Stan Colcombe
29. *Dentate gyrus granule cell resilience to amyloid β : potential roles of brain-derived neurotrophic factor and neuronal activity*
Chiara Crisculo*, Elissavet Chartampila, Stephen D. Ginsberg, Helen E. Scharfman
30. *Auditory striatum and medial geniculate body modulates mice auditory cortex through GABAB receptors*
Andrea Balla*, Henry Sershen, Daniel C. Javitt

31. *Deep brain stimulation promotes white matter remodeling and is accompanied by functional changes to brain-wide networks*
Satoka H. Fujimoto, Atsushi Fujimoto, Catherine Elorette, Davide Folloni, Gaurav Verma, William GM Janssen, Lazar Fleysher, Ki Sueng Choi, Brian E. Russ*, Helen S. Mayberg, Peter H. Rudebeck
32. *Investigating the relationship between eye movements and recall in an auditory list recall task*
Christa Ouellette*, Daniel Garcia-Barnett, Anna MacKay-Brandt, Stan Colcombe
33. *G-protein coupled receptor 55 (GPR55): Its expression and modulation of alcohol drinking behavior*
Danni Sigler*, Sanjay Awathale, Edenia C. Menezes, Fabiula F. Abreu, Relish Shah, Mary E. Abood, Catia M. Teixeira, Vinod K. Yaragudri
34. *Devaluation of response-produced safety signals reveals circuits for goal-directed versus habitual avoidance in dorsal striatum*
Erika C. Andrade*, Robert M. Sears, Shanna B. Samels, Lindsay C. Laughlin, Danielle M. Moloney, Donald A. Wilson, Matthew R. Alwood, Justin M. Moscarello, Christopher K. Cain
35. *Circuit-specific, chemogenetic neuromodulation of the basal ganglia of nonhuman primates*
Arnaud Yves Falchier*, Brian Russ, Kurt Masiello, Brent Butler, Charles Shroeder
36. *Development and open-sharing of tools to process digital audio: Preliminary pipelines for transcription and editing of verbal recall in NKI-RSII*
Daniel Garcia-Barnett*, Anna MacKay-Brandt, Stan Colcombe
37. *Stress effects on central and peripheral exosome levels and simultaneous transcriptomic profiles*
Hope Kronman*, Amarjyot Singh, Shofiul Azam, Danielle Zelli, Timothy Lau, Josh Dobbin, Betty Bigio, Carla Nasca

38. *Pupil response tracks global and anterior insula activation in the human brain*

Maximilian Nentwich*, Christine Chesebrough, Noah Markowitz, Elisabeth Freund, Ashesh Mehta, Stephan Bickel

39. *Enigma of pyramidal neurons: Chirality-centric view on biological evolution. Congruence to molecular, cellular, physiological, cognitive, and psychological functions*

Victor Dyakin*

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

David Alcantara-Gonzalez with “A hippocampal hilar dentate gyrus Mossy Cell filled with biocytin after a whole-cell patch-clamp recording experiment”; Sandeep Malampati with “PANTHOS (Poisonous flower like structure) observed in the Hippocampal subiculum region of TRGL/5xFAD mice”; Wasif Zia with “New facility planned for next generation 9.4 T MRI neuro-imager”; Danni Sigler with “Immunofluorescence image of cannabinoid-1 (CB1) receptors in rat brain”

Back Cover Photo Credits(top left to bottom right):

David Alcantara-Gonzalez with “Dentate gyrus in the rodent hippocampus, where hilar Mossy Cells and their axons are labeled in green and interneurons in red, with a nuclear stain in blue”; Aleksandra Stanisavljevic with “Layer III pyramidal neurons in a healthy human brain, stained for CamKII, a pyramidal neuron marker”; Christos Lisgaras with “Electrophysiological biomarker of epilepsy called high frequency oscillations recorded in the hippocampus of an epileptic mouse *in vivo*”; Meghan Kennedy and John LaFrancois with “Cresyl violet image of dentate gyrus examining damage from epilepsy”; Christopher Bare with “Multiparameter flow cytometry data from our Bigfoot cell sorter”; David Alcantara-Gonzalez with “Mossy cell soma and dendrites are highlighted in glowing blue-red-white lines, while nuclei from some other cells in the background are shown in yellow”; Pasquale D’Acunzo and Christopher Goulbourne with “Cryogenic electron microscopy photomicrograph of extracellular vesicles isolated the brain extracellular space of a wild-type mouse at 12 months of age”

Notes

Notes

