The NKI Informer
A newsletter of the Nathan S. Kline Institute for Psychiatric Research

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C-BIN Gains EEG Data Analyzing Power

The Center for Biomedical Imaging and Neuromodulation (C-BIN) recently welcomed Eduardo Gonzalez-Moreira to its staff. Dr. Gonzalez-Moreira has joined Dr. Alexandre Franco’s Computational Neuroimaging Laboratories as a Research Scientist. To introduce himself, Dr. Gonzalez-Moreira graciously answered a few questions for the Informer.

Please tell us a bit about your research interests and what brought you to NKI.

My long-term research interests involve computational neuroscience to estimate neural activity and connectivity based on non-invasive electrophysiological recordings and biomarker assessment for the characterization of neurodegenerative diseases. Since NKI is a well-known research center with long-standing strengths in dementia research, neuroimaging, and the application of computer technology to mental health services, it was an easy decision to apply for a position to work in electrophysiology data analysis here.

You have been a researcher in at least four countries – Cuba, Mexico, China, and the US – which sounds like an interesting experience. What have been some of the highlights?

I have had the luck to work and learn from very talented professors during my professional career. In Cuba, I worked on an outstanding team led at that time by Juan Lorenzo Ginori and Alberto Taboada Crispi. My direct supervisor, Carlos A. Ferrer, pushed me into the fantastic world of digital signal processing and data analysis.

Later, I moved to China for my Ph.D. Traveling to Hangzhou was a great challenge since I did not speak Mandarin or the Hangzhou dialect at that time, and just a few people spoke English in the city.
Furthermore, the informatization of Chinese society was not like today, where with a smartphone and WeChat, you can live in China without any significant issues, even without speaking Mandarin. There I worked for the first time on EEG data analysis under the supervision of Walter J. Freeman. Professor Freeman was a person full of energy and wisdom. I went back to China some years later for my postdoc, this time under the supervision of Pedro Valdes Sosa. My technical skills related to mathematical models and EEG data analysis improved significantly during my time in Pedro's lab.

I later moved to Mexico to work with Thalia Harmony. She is a world leader in EEG data analysis with a special focus on the pediatric population. With all her love and enthusiasm for pediatric electrophysiology, Professor Thalia helped to improve my knowledge about the nature of EEG data and quantitative features of newborn EEG.

**What specific project(s) will you be working on at NKI?**

I have already been involved in a new proposal project: "Neurobiology and Cognitive Functions of Slow Brain Network Fluctuations." My focus for this project will be related to data aggregation, standardization, and sharing.

**How do you like to spend your time when you are not working?**

Working on data analysis is like a hobby for me, so I need to be careful with myself since I could be in front of the computer reading papers, looking for hidden patterns in data, etc., for hours without realizing it! However, I also like to hang out with family and friends, travel to new places, and practice sports like baseball and snorkeling.
Two postdoctoral fellows in the Center for Dementia Research have been awarded Fellowship grants from the Alzheimer’s Association.

Dr. Pasquale D’Acunzo, from Dr. Efrat Levy’s lab, received an Alzheimer’s Association Fellowship for the project titled “Propagation of mitochondrial dysfunction in the brain by mitovesicles.”

Dr. David Alcantara-Gonzalez, from Dr. Helen Scharfman’s lab, received an Alzheimer’s Association Diversity Fellowship for the project titled “A new prospect in triggering early hyperexcitability in Alzheimer’s disease.”

The work of Kaitlyn Nemani (Clinical Research) and colleagues, published last year in JAMA Psychiatry, was cited in a recent NPR Health News piece. The NPR article is titled “COVID and schizophrenia: Why this deadly mix can deepen understanding of the brain,” and Dr. Nemani is quoted discussing her research on the link between schizophrenia and COVID mortality, as well as the potential for scientific and treatment advances.

Dr. Nemani also appears on ABC 10News San Diego’s coverage of this topic.

The NKI community was saddened to learn of the recent passing of Roberto Rodriguez. Roberto worked at NKI for 17 years before retiring from his position as Senior Laboratory Animal Technician in August 2020. We extend our sympathy to Roberto’s family at this difficult time.

Ralph Nixon and Helen Scharfman of the Center for Dementia Research recently posted comments on the Alzforum research networking site. These can be found here and here.
Evanna Petkova is a lead author of two recent *JAMA Network Open* articles reporting on a study of the effectiveness of convalescent plasma for COVID patients. An interview with Dr. Petkova about this study appears at [MedicalResearch.com](https://www.medicalresearch.com).


Panos Roussos (Dementia Research) is a corresponding author of this recent publication in *Nature Genetics*. Quoting from the abstract, “This integrative analysis identifies candidate causal variants and elucidates potential regulatory mechanisms for genes underlying schizophrenia, bipolar disorder and Alzheimer’s disease.”


Babak Ardekani (Biomedical Imaging & Neuromodulation) has a new paper appearing in *Journal of Neuroscience Methods*.


Mohammed Milad (Clinical Research) is the corresponding author of this new open access paper in *Molecular Psychiatry*.

Goi Khia Eng (Clinical Research) is the first author of this paper published in Cerebral Cortex with Emily Stern and others in NKI’s Clinical Research Department.


Elisa Dias, who just retired from NKI, coauthored this paper in Psychiatry Research with colleagues in Brazil.


The latest publication by John Sidtis (Brain & Behavior Laboratory) appears in Frontiers in Neuroscience.


This open access article by Christos Lisgaras and Helen Scharfman (Dementia Research) was published in Neurobiology of Disease. An image from their paper showing an epilepsy biomarker in a mouse model of epilepsy was selected to appear on the journal cover.

Lisgaras CP, Scharfman HE. Robust chronic convulsive seizures, high frequency oscillations, and human seizure onset patterns in an intrahippocampal kainic acid model in mice. Neurobiol Dis. 2022 May; 166:105637. PMID: 35091040.

Matthew Hoptman (Clinical Research), Umit Tural (Clinical Research), and Daniel Javitt (Schizophrenia Research) coauthored this publication in the open access journal Brain Sciences.

Kerstin Pahl (Social Solutions & Services) coauthored this article in *Substance Abuse*.


Robert Smith (Neurochemistry) is a first author of this new paper appearing in *Schizophrenia Bulletin Open*.


Daniel Javitt and Joshua Kantrowitz (Schizophrenia Research) contributed this piece in a special issue of *Schizophrenia Research* on “Re-Inventing Schizophrenia: Updating the Construct”.

Javitt DC, Kantrowitz JT. *The glutamate/N-methyl-d-aspartate receptor (NMDAR) model of schizophrenia at 35: On the path from syndrome to disease*. Schizophr Res. 2022 Apr; 242:56-61. PMID: 35125283.

### INFO UPDATE

The NKI library has purchased a copy of the latest edition of the APA’s *Diagnostic and Statistical Manual of Mental Disorders*. It includes all the updates made to DSM-5 since 2013, and revised diagnostic criteria for several disorders. Also, for the first time ever, the entire text has been reviewed and revised by a Work Group on Ethnoracial Equity and Inclusion, ensuring attention to the impact of culture, race, and racism on diagnosis. The DSM-5-TR is available for reference use and short-term borrowing.

PubMed Central (PMC), the free full-text archive of biomedical and life sciences journal articles linked to PubMed, has an updated user interface. PMC houses more than 7 million full-text records, spanning several centuries of biomedical and life science research, and is used by more than 3 million users every day. Features in PubMed and PMC now have a similar look and feel. For an overview of the new design, see “**New PMC Website Design is Live!**”. And for a more detailed video discussion, see this recent recording of an **NLM Office Hours webinar on PMC**.
**NOVELny** is an online virtual library connecting New Yorkers to 21st century information via libraries and library systems statewide. NOVELny gives New Yorkers free online access to the full text of thousands of journals, newspapers, and other reference materials. Access to the current collection of databases has been extended through June 2023. You can access these resources through the NOVELny portal.

In addition, New York State government employees have expanded access privileges to electronic databases, e-journals, and e-books through the New York State Library. For more details see the NYS Library website here.

The NKI librarian is always available to assist with literature searching, citation searching (Web of Science, Scopus), bibliographic reference management, and the like. When you have any information needs, or questions about available resources, don’t hesitate to turn to us.

The library offers a comfortable, quiet space for reading, work, and small meetings. To use the library’s Wi-Fi network, ask the library staff for the password.

You can link to the NKI Library’s website from myNKI. The Library site includes quick links to the NYU Health Sciences Library and to the New York State Library, as well as links to NKI’s own library resources (journal finder, online catalog, etc.).

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**EVENTS AND SEMINARS**

**Center for Biomedical Imaging and Neuromodulation Science Series**

Held on Mondays at 11 am via Zoom (Meeting ID: 214 282 6575)

**John Sidtis**  
Brain & Behavior Lab, NKI  
**Cerebral blood flow is not a direct surrogate of behavior: Performance models suggest a role for functional meta-networks**  
April 18

**Anna Zilverstrand**  
University of Minnesota  
**Using “data-mining” of public data sets to characterize the complexity in the mechanisms underlying human drug addiction**  
April 25

**Xi-Nian Zuo**  
Beijing Normal University  
May 2

**Chao-Gan Yan**  
Institute of Psychology, Chinese Academy of Sciences  
May 9

**Jan Zimmermann**  
University of Minnesota  
**Timescales of behavior and neural processing**  
May 16
Where’s the pharmacology in pharmacological imaging with MRI?

May 23

The New York State Office of Mental Health (OMH) regularly hosts an interactive video broadcast covering the latest research, technology, and treatment implementation in the fields of psychiatry and psychology. These programs are recorded, and the archived Statewide Grand Rounds programs can be viewed on the OMH website.

NKI ON THE (VIRTUAL) ROAD

On March 2, Yohan Kim (Levy Lab, Center for Dementia Research) presented at the NYU Neuroscience Institute Weekly Group Meeting. Dr. Kim’s topic was “Sex Differentially Alters Secretion of Brain Extracellular Vesicles During Aging: A Potential Mechanism for Maintaining Brain Homeostasis”.

Christos Lisgaras (Scharfman Lab, Center for Dementia Research) is teaching several courses in the Pathogenesis of the Epilepsies program being offered by 4EU+, a consortium between 4 EU Universities.

NKI PUBLICATIONS UPDATE

Below is a list of references that have been added to the NKI publications database since the previous update. The full database contains over 6,800 items dating back to 1995 and can be searched from the myNKI website.


Chyzhyk D, Varoquaux G, Milham M, Thirion B. How to remove or control confounds in predictive models, with applications to brain biomarkers. Gigascience. 2022 Mar 12; 11:giac014. PMID: 35277962.


Javitt DC, Kantrowitz JT. The glutamate/N-methyl-d-aspartate receptor (NMDAR) model of schizophrenia at 35: On the path from syndrome to disease. Schizophr Res. 2022 Apr; 242:56-61. PMID: 35125283.


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