

The NKInformer



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

Donald C. Goff, MD, Director
Antonio Convit, MD, Deputy Director
Thomas O'Hara, MBA, Deputy Director, Institute Administration

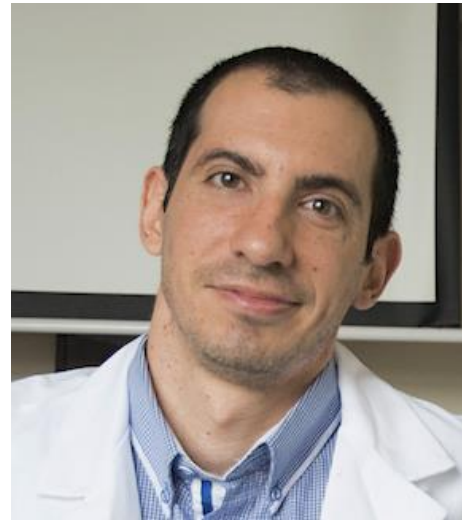
July – August 2020

Stuart Moss, MLS, Editor

SIMULATING BRAIN CIRCUITS ON SUPERCOMPUTERS

NKI was a pioneer in the application of computing to psychiatry. Now, the latest generation of NKI investigators is taking this pursuit to a whole other level.

[Salvador Durá-Bernal, PhD, is an Assistant Professor at SUNY Downstate Medical Center and a part-time Research Scientist at NKI. He completed his MSc in Canary Islands, Spain, then his PhD and first post-doctoral fellowship at the University of Plymouth, UK; followed by post-doctoral research at Johns Hopkins and SUNY Downstate. His research focuses on understanding cortical circuits through large-scale biophysically detailed simulations on supercomputers. Dr. Dura-Bernal has developed highly detailed models of mouse primary motor cortex (M1) and macaque auditory cortex (A1) circuits by integrating experimental data available at multiple scales – molecules, neurons, networks, and systems. He received the 2019 [Robert Furchgott Scholar Award](#) for basic research, an early career investigator prize.]



Contributed by Salvador Durá-Bernal, PhD

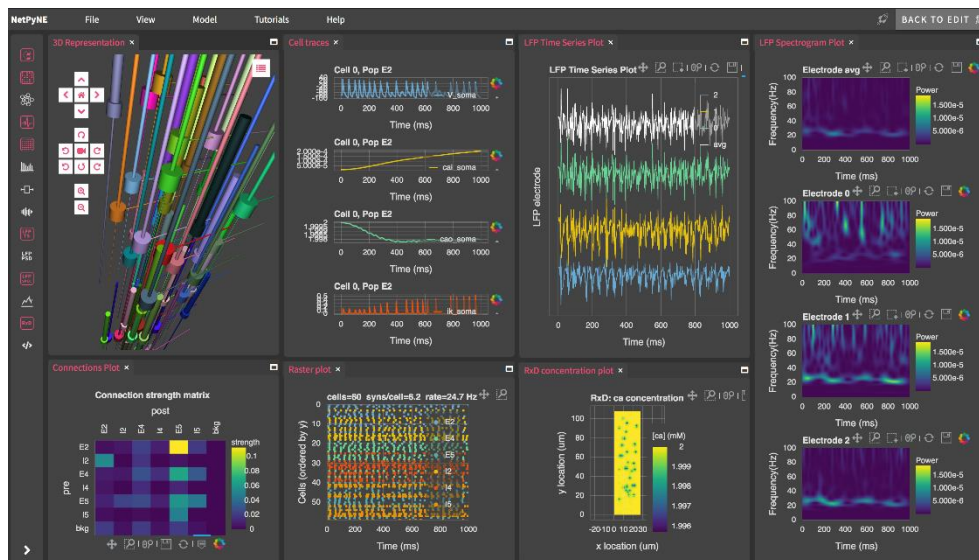
Salvador Durá-Bernal has been working with Sam Neymotin for over 7 years now. They were both postdocs in the same lab at SUNY Downstate, and have continued collaborating as they advanced their careers towards their current tenure-track positions. Together with Peter Lakatos, Sam had been awarded an NIH R01 to study auditory thalamocortical circuits, and in mid-2019 they offered Salvador a part-time Research Scientist

position in the NKI Center for Biomedical Imaging & Neuromodulation to develop a computational model of this brain region. Soon after, Salvador was awarded his own 5-year [NIH grant](#) to continue developing a tool to build detailed models of brain circuits spanning multiple scales: molecular, cellular, and network (see [publication](#)). This modeling tool has been used in over 40 labs across the world and is now being used at NKI to develop a biophysically detailed model of macaque auditory thalamocortical circuits. Our ultimate goal is to make this tool user-friendly enough so that the “non-computational community” can use it to, for example, predict outcomes of specific neuromodulatory techniques, or model circuit deficits underlying specific neuropsychiatric disorders like schizophrenia.

In June 2020, Salvador started a tenure-track position at SUNY Downstate. A month later he received great news: he had been awarded a major one-year NSF grant to develop large-scale cortical models using supercomputers. This grant is part of a program called “[Exploring Clouds for Acceleration of Science](#)” (E-CAS) led by the Internet2 organization and funded by NSF, aimed at demonstrating that commercial cloud computing providers, such as Google Cloud Platform or Amazon Web Services, can be used to advance scientific research. Salvador's proposal to decipher the brain's neural code through simulations was one

of the 6 selected for Phase 1; others included studying data from the Large Hadron Collider (LHC) or the South Pole Neutrino Observatory. In this preliminary stage, each candidate had one year to demonstrate the potential to accelerate science using cloud computing. Salvador used supercomputers to explore neural coding mechanisms in motor cortex circuits, and to help build the auditory thalamocortical model in collaboration with NKI; they developed new computational methods and ran simulations on 100,000 processors simultaneously (see [blog post](#)).

A panel of experts then judged their work to decide which of the 6 teams would move on to Phase 2. The SUNY Downstate team, led by Salvador, and the MIT LHC team were the winners. Each team received one additional year of funding, including funding for personnel and \$450,000 in supercomputing resources. In Phase 2 of this project, Salvador aims to connect his detailed mouse motor cortex model to somatosensory cortex and thalamus models, providing a framework to perform *in silico* experiments and make predictions in the context of the full sensorimotor loop. In collaboration with NKI researchers Peter Lakatos and Sam Neymotin, the supercomputing resources will also be used to explore the mechanistic origins of thalamocortical oscillatory circuit motifs and their role in speech processing.



Graphical user interface of software tool to build, simulate, and analyze multiscale models of brain circuits (www.netpyne.org)

KUDOS



Relish Shah (Research Support) has received a Hero Award from the Metropolitan New York Branch of the American Association for Laboratory Animal Science. This award recognizes Relish's exceptional workplace response to the COVID-19 emergency.



Dr. Anzalee Khan (Manhattan Psychiatric Center) has been chosen by the ISCTM executive committee to be chair of their [poster review committee](#).

GRANTS RECEIVED



Dr. Carrie Masia (Social Solutions & Services) received a grant from the Department of Education titled "[Enhancing the applicability of an evidence-based intervention to reduce social anxiety and improve educational outcomes in Black American students in urban public high schools](#)". This project will adapt and implement the Skills for Academic and Social Success (SASS) intervention designed to alleviate the negative impact of social anxiety (SA) on students' school performance and found to be effective among a majority White high school

student population. The SASS will be adapted to the support the needs of Black high school students, a population with high rates of SA and limited access to interventions.



Dr. Crystal Lewis (Social Solutions & Services) received an R21 at NYUSoM titled "[Feasibility of a pharmacy-based overdose prevention program in rural/suburban NY](#)". She will collaborate with **Dr. Helen-Maria Lekas**. Opioid use and related overdose deaths have become an unrelenting national epidemic, and in New York State (NYS), as observed across the U.S., opioid-related overdose events are over-represented in suburban/rural counties. In response, widespread state policies (49 states) are allowing pharmacists to dispense naloxone through a standing order, and in NYS, N-CAP (Naloxone Co-Payment Assistance Program) – a NYS-funded reimbursement program to cover co-pays accompanying the naloxone prescription – is new policy aimed to facilitate ease in accessing naloxone from pharmacies. Our study will select the top 8 suburban/rural counties with the highest rates of overdose deaths in NYS to examine the individual-, pharmacy-, and policy-level barriers/facilitators associated with pharmacy naloxone services using a (1) pharmacist survey, and (2) in-depth interviews among key stakeholders to inform a forthcoming pharmacy-based intervention to increase uptake and support of pharmacy naloxone services.



Dr. Charles Schroeder (Biomedical Imaging & Neuromodulation) received a supplement for equipment on his R01 titled "[Defining Neuronal Circuits and Cellular Processes Underlying Resting fMRI Signals](#)". **Dr. Michael Milham** is co-PI.

FROM AROUND THE INSTITUTE



Following the killing of George Floyd and the subsequent social upheaval, faculty members of NKI's [Center for Research on Cultural & Structural Equity](#) (C-CASE) created an educational video addressing systemic racism and strategies to counter it. *Our Racist America* is a 'call to action' video presentation that discusses: (1) white privilege; (2) individual-institutional-structural racism against Black Americans; (3) historical and present-day racism embedded in law enforcement; and (4) the economic, social, physical, and emotional harm these tactics have caused Black people in America, spanning centuries. The one-hour presentation can be viewed [here](#).



Christos Lisgaras, a postdoctoral fellow in the Scharfman Laboratory (Dementia Research), is featured in an article in *Epigraph*, the International League Against Epilepsy's member newsletter. [The article](#) considers the effects of the pandemic on epilepsy research.

PUBLICATIONS OF NOTE

PSYCHOLOGICAL MEDICINE

Daniel Javitt and **Antigona Martinez** (Schizophrenia Research) are coauthors of this paper in *Psychological Medicine* on visual scanning deficits in schizophrenia.

Patel GH, Arkin SC, Ruiz-Betancourt DR, DeBaun HM, Strauss NE, Bartel LP, Grinband J, Martinez A, Berman RA, Leopold DA, Javitt DC. What you see is what you get: visual scanning failures of naturalistic social scenes in schizophrenia. *Psychol Med*. 2020 Jun 5:1-10. PMID: 32498743.

nature communications

Lila Davachi (C-BIN) is the senior author of this open access paper appearing in *Nature Communications*.

Bein O, Duncan K, Davachi L. Mnemonic prediction errors bias hippocampal states. *Nat Commun*. 2020 Jul 10; 11(1):3451. PMID: 32651370.

LEARNING MEMORY

This open access Brief Communication in *Learning & Memory* comes from the labs of **Chris Cain** and **Rob Sears** (Emotional Brain Institute). **Lindsay Laughlin** (first author), **Danielle Moloney**, and **Shanna Samels** are coauthors.

Laughlin LC, Moloney DM, Samels SB, Sears RM, Cain CK. Reducing shock imminence eliminates poor avoidance in rats. *Learn Mem*. 2020 Jun 15;27(7):270-274. PMID:32540916.

Neuron

Catia Teixeira (Emotional Brain Institute) coauthored this paper in *Neuron* with collaborators in Japan.

Kumar D, Koyanagi I, Carrier-Ruiz A, Vergara P, Srinivasan S, Sugaya Y, Kasuya M, Yu TS, Vogt KE, Muratani M, Ohnishi T, Singh S, Teixeira CM, Chérasse Y, Naoi T, Wang SH, Nondhalee P, Osman BAH, Kaneko N, Sawamoto K, Kernie SG, Sakurai T, McHugh TJ, Kano M, Yanagisawa M, Sakaguchi M. Sparse Activity of Hippocampal Adult-Born Neurons during REM Sleep Is Necessary for Memory Consolidation. *Neuron*. 2020 May 20. PMID: 32502462.

Current Biology

In this My Word piece published in *Current Biology*, **Joseph LeDoux** (Emotional Brain Institute) opines on emotion and consciousness.

LeDoux JE. Thoughtful feelings. *Curr Biol*. 2020 Jun 8;30(11):R619-R623. PMID: 32516605.

BMC Psychiatry

Michael Milham, Director of the Center for Biomedical Imaging and Neuromodulation (C-BIN) is the corresponding author of this open access article appearing in *BMC Psychiatry*. The senior authors [wrote about the article](#) for the BMC Series Blog.

Restrepo A, Scheininger T, Clucas J, Alexander L, Salum GA, Georgiades K, Paksarian D, Merikangas KR, Milham MP. Problematic internet use in children and adolescents: associations with psychiatric disorders and impairment. *BMC Psychiatry*. 2020 May 27;20(1):252. PMID: 32456610.

JAMA Network Open

Clinical Research Director **Dan Iosifescu** contributed this invited commentary to *JAMA Network Open*.

Iosifescu DV. Are Electroencephalogram-Derived Predictors of Antidepressant Efficacy Closer to Clinical Usefulness? *JAMA Netw Open*. 2020 Jun 1;3(6):e207133. PMID: 32568395.

The American Journal of Psychiatry

Xavier Castellanos and **Emily Stern** (Clinical Research) are among the many authors of this article published in *The American Journal of Psychiatry*.

Boedhoe PSW, van Rooij D, Hoogman M, Twisk JWR, Schmaal L, Abe Y, Alonso P, et al. ; ENIGMA ADHD working group; ENIGMA ASD working group; ENIGMA OCD working group, Thompson PM, Stein DJ, Buitelaar J, Franke B, van den Heuvel OA. Subcortical Brain Volume, Regional Cortical Thickness, and Cortical Surface Area Across Disorders: Findings from the ENIGMA ADHD, ASD, and OCD Working Groups. *Am J Psychiatry*. 2020 Jun 16. PMID: 32539527.

Biological Psychiatry

Michael Milham (C-BIN) coauthored this review on autism subtypes in *Biological Psychiatry*.

Hong SJ, Vogelstein JT, Gozzi A, Bernhardt BC, Yeo BTT, Milham MP, Di Martino A. Toward Neurosubtypes in Autism. *Biol Psychiatry*. 2020 Jul 1;88(1):111-128. PMID: 32553193.

Journal of Clinical Psychopharmacology

Jean-Pierre Lindenmayer (Manhattan Psychiatric Center) coauthored this commentary in the *Journal of Clinical Psychopharmacology*.

Lindenmayer JP, Glick ID, Talreja H, Underriner M. Persistent Barriers to the Use of Long-Acting Injectable Antipsychotics for the Treatment of Schizophrenia. *J Clin Psychopharmacol*. 2020 Jul/Aug;40(4):346-349. PMID: 32639287.



Dan Iosifescu (Clinical Research) is a coauthor of this meta-analysis on esketamine efficacy in *The Journal of Clinical Psychiatry*.

Papakostas GI, Salloum NC, Hock RS, Jha MK, Murrough JW, Mathew SJ, Iosifescu DV, Fava M. Efficacy of Esketamine Augmentation in Major Depressive Disorder: A Meta-Analysis. *J Clin Psychiatry*. 2020 May 26;81(4). PMID: 32459407.

NeuroImage

Qawi Telesford and **Michael Milham** (C-BIN) are coauthors of this open access paper appearing in *Neuroimage*.

Nentwich M, Ai L, Madsen J, Telesford QK, Haufe S, Milham MP, Parra LC. Functional connectivity of EEG is subject-specific, associated with phenotype, and different from fMRI. *Neuroimage*. 2020 May 31; 218:117001. PMID: 32492509.

Journal of Substance Use

Kerstin Pahl (Social Solutions & Services Research) coauthored this paper recently published in the *Journal of Substance Use*.

Lee JY, Pahl K, Kim W. Correlates of Cannabis Use Disorders among urban women of color: childhood abuse, relationship with spouse/partner, and media exposure. *Journal of Substance Use* 2020.

SCIENTIFIC REPORTS

C-BIN Director **Michael Milham** is the senior author of this open access paper published in *Scientific Reports*.

Kramer E, Koo B, Restrepo A, Koyama M, Neuhaus R, Pugh K, Andreotti C, Milham M. Diagnostic Associations of Processing Speed in a Transdiagnostic, Pediatric Sample. *Sci Rep*. 2020 Jun 22;10(1):10114. PMID: 32572148.

THE LANCET

Ricardo Osorio (Clinical Research) is a coauthor of this open access article in *The Lancet*.

Fortea J, Vilaplana E, Carmona-Iragui M, Benejam B, Videla L, Barroeta I, Fernández S, Altuna M, Pegueroles J, Montal V, Valldeneu S, Giménez S, González-Ortiz S, Muñoz L, Estellés T, Illán-Gala I, Belbin O, Camacho V, Wilson LR, Annus T, Osorio RS, Videla S, Lehmann S, Holland AJ, Alcolea D, Clarimón J, Zaman SH, Blesa R, Lleó A. Clinical and biomarker changes of Alzheimer's disease in adults with Down syndrome: a cross-sectional study. *Lancet*. 2020 Jun 27; 395(10242):1988-1997. PMID: 32593336.

INFO UPDATE

Library services continue uninterrupted. As always, if you need documents, assistance with literature searching, or have reference questions, the [NKI librarian](#) is at your service.



NKI employees are eligible to register with the New York State Library in order to access the Library's substantial [electronic resources](#). (Note that all New York residents can register, but NYS government employees have access to a lot more.) Instructions to register are [here](#):

<http://www.nysl.nysed.gov/apply.htm>

(If you need assistance verifying your agency employment while at home, the NKI librarian can do that for you.)



Training specialists have made available an on-demand series of classes on [How PubMed Works](#). The four class modules cover 1) Introduction; 2) Selection; 3) MeSH (Medical Subject Headings); and 4) ATM (Automatic Term Mapping). The class objectives are described [here](#).

Please [contact the NKI librarian](#) if you have any questions about database searching or troubleshooting, using PubMed or any other tool.



Hopefully, you are becoming accustomed to the new version of PubMed by now. The [video posted here](#) provides an overview and describes some of the new features.



At a time of rampant misinformation, reliable and trustworthy information sources are especially valuable. [USAGov](#) is designed to be a helpful guide to federal government resources. It can help you answer questions, work through personal and professional issues, or simply find more information. You can access USAGov through the [website](#), social media channels, and [email updates](#) on a variety of topics.

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](#), [PsychiatryOnline](#), etc.).

DEPARTMENT OF WONDER

nature

Nature has published a series of articles on the effects of the pandemic on scientific research. One of these articles – “[Will the pandemic permanently alter scientific publishing?](#)” – touches on issues including preprint servers, rapid review, and financial pressures.



A major new discovery near the famous Stonehenge archaeological site was recently reported. Researchers using radar and magnetic surveys located a vast circle of deep shafts (each more than 5 meters deep and 10 meters in diameter) surrounding the Durrington Walls site. The precise locations of the shafts indicates that the people who built them had developed a system of counting. See [this article](#) in *The Guardian* for a news report. The [full scientific study](#) appears in *Internet Archaeology*.

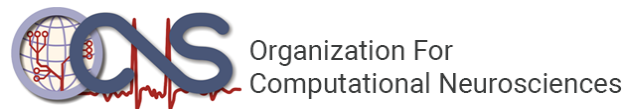


In our brave new digital world of social media and the like, in which so much occurs and is stored online, have you ever considered what happens *afterward* (when you're no longer around to keep tabs and curate)? If not, here are a couple of books that offer some guidance: [Digital Legacy Plan: A guide to the personal and practical elements of your digital life before you die](#) and [Your Digital Afterlife: When Facebook, Flickr and Twitter Are Your Estate, What's Your Legacy?](#)

EVENTS AND SEMINARS

While in-person NKI seminars have been canceled until further notice, the Community Building Committee (CBC) has been organizing online “Chats with Snacks” featuring scientific presentations. Be sure to read the CBC emails to find out about upcoming events.

NKI ON THE (VIRTUAL) ROAD



Salvador Dura-Bernal (Biomedical Imaging & Neuromodulation) was a major contributor to the 29th Annual Computational Neuroscience Meeting ([CNS*2020](#)), held online in July. Dr. Dura-Bernal organized and spoke at the workshop on “[Tools and resources for developing and sharing models in computational neuroscience](#)”. He also organized and was a lecturer at the full-day tutorial on “[Building mechanistic multiscale models, from molecules to networks, using NEURON and NetPyNE](#)”.

Samuel Neymotin (Biomedical Imaging & Neuromodulation) also organized and spoke at a workshop, on “[Machine Learning and Mechanistic Modeling for Understanding Brain in Health and Disease](#)”. NKI's **Haroon Anwar** also spoke at this workshop.

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 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 6,400 items dating back to 1995, and can be searched from the [myNKI website](#).

Alber M, Buganza Tepole A, Cannon WR, De S, Dura-Bernal S, Garikipati K, Karniadakis G, Lytton WW, Perdikaris P, Petzold L, Kuhl E. Integrating machine learning and multiscale modeling-perspectives, challenges, and opportunities in the biological, biomedical, and behavioral sciences. *NPJ Digit Med*. 2019 Nov 25; 2:115. PMID: 31799423.

Bein O, Duncan K, Davachi L. Mnemonic prediction errors bias hippocampal states. *Nat Commun*. 2020 Jul 10; 11(1):3451. PMID: 32651370.

Boedhoe PSW, van Rooij D, Hoogman M, Twisk JWR, Schmaal L, Abe Y, Alonso P, et al. ; ENIGMA ADHD working group; ENIGMA ASD working group; ENIGMA OCD working group, Thompson PM, Stein DJ, Buitelaar J, Franke B, van den Heuvel OA. Subcortical Brain Volume, Regional Cortical Thickness, and Cortical Surface Area Across Disorders: Findings From the ENIGMA ADHD, ASD, and OCD Working Groups. *Am J Psychiatry*. 2020 Jun 16. PMID: 32539527.

Diminich ED, Dickerson F, Bello I, Cather C, Kingdon D, Rakhshan Rouhakhtar PJ, Hart KL, Li C, Troxel AB, Goff DC. D-cycloserine augmentation of cognitive behavioral therapy for delusions: A randomized clinical trial. *Schizophr Res*. 2020 Jun 23. PMID: 32591238.

Forteza J, Vilaplana E, Carmona-Iragui M, Benejam B, Videla L, Barroeta I, Fernández S, Altuna M, Pegueroles J, Montal V, Valldeneu S, Giménez S, González-Ortiz S, Muñoz L, Estellés T, Illán-Gala I, Belbin O, Camacho V, Wilson LR, Annus T, Osorio RS, Videla S, Lehmann S, Holland AJ, Alcolea D, Clarimón J, Zaman SH, Blesa R, Lleó A. Clinical and biomarker changes of Alzheimer's disease in adults with Down syndrome: a cross-sectional study. *Lancet*. 2020 Jun 27; 395(10242):1988-1997. PMID: 32593336.

Gleeson P, Cantarelli M, Marin B, Quintana A, Earnshaw M, Sadeh S, Piasini E, Birgiolas J, Cannon RC, Cayco-Gajic NA, Crook S, Davison AP, Dura-Bernal S, Ecker A, Hines ML, Idili G, Lanore F, Larson SD, Lytton WW, Majumdar A, McDougal RA, Sivagnanam S, Solinas S, Stanislovas R, van Albada SJ, van Geit W, Silver RA. Open Source Brain: A Collaborative Resource for Visualizing, Analyzing, Simulating, and Developing Standardized Models of Neurons and Circuits. *Neuron*. 2019 Aug 7; 103(3):395-411.e5. PMID: 31201122.

Hong SJ, Vogelstein JT, Gozzi A, Bernhardt BC, Yeo BTT, Milham MP, Di Martino A. Toward Neurosubtypes in Autism. *Biol Psychiatry*. 2020 Jul 1;88(1):111-128. PMID: 32553193.

Hoogman M, van Rooij D, Klein M, Boedhoe P, Ilioska I, Li T, Patel Y, Postema MC, Zhang-James Y, Anagnostou E, Arango C, Auzias G, Banaschewski T, Bau CHD, Behrmann M, Bellgrove MA, Brandeis D, Brem S, Busatto GF, Calderoni S, Calvo R, Castellanos FX, et al. Consortium neuroscience of attention deficit/hyperactivity disorder and autism spectrum disorder: The ENIGMA adventure. *Hum Brain Mapp*. 2020 May 18. PMID: 32420680.

Iosifescu DV. Are Electroencephalogram-Derived Predictors of Antidepressant Efficacy Closer to Clinical Usefulness? *JAMA Netw Open*. 2020 Jun 1;3(6):e207133. PMID: 32568395.

Kramer E, Koo B, Restrepo A, Koyama M, Neuhaus R, Pugh K, Andreotti C, Milham M. Diagnostic Associations of Processing Speed in a Transdiagnostic, Pediatric Sample. *Sci Rep*. 2020 Jun 22;10(1):10114. PMID: 32572148.

Kumar D, Koyanagi I, Carrier-Ruiz A, Vergara P, Srinivasan S, Sugaya Y, Kasuya M, Yu TS, Vogt KE, Muratani M, Ohnishi T, Singh S, Teixeira CM, Chérasse Y, Naoi T, Wang SH, Nondhalee P, Osman BAH, Kaneko N, Sawamoto K, Kernie SG, Sakurai T, McHugh TJ, Kano M, Yanagisawa M, Sakaguchi M. Sparse Activity of Hippocampal Adult-Born Neurons during REM Sleep Is Necessary for Memory Consolidation. *Neuron*. 2020 May 20. PMID: 32502462.

Köhler-Forsberg O, Sylvia LG, Fung V, Overhage L, Thase M, Calabrese JR, Deckersbach T, Tohen M, Bowden CL, McInnis M, Kocsis JH, Friedman ES, Ketter TA, McElroy SL, Shelton RC, Ostacher MJ, Iosifescu DV, Nierenberg AA. Adjunctive antidepressant treatment among 763 outpatients with bipolar disorder: Findings from the Bipolar CHOICE and LiTMUS trials. *Depress Anxiety*. 2020 Jun 29. PMID: 32598093.

Köhler-Forsberg O, Sylvia LG, Ruberto VL, Kuperberg M, Shannon AP, Fung V, Overhage L, Calabrese JR, Thase M, Bowden CL, Shelton RC, McInnis M, Deckersbach T, Tohen M, Kocsis JH, Ketter TA, Friedman ES, Iosifescu DV, McElroy S, Ostacher MJ, Nierenberg AA. Familial severe psychiatric history in bipolar disorder and correlation with disease severity and treatment response. *J Affect Disord*. 2020 Aug 1; 273:131-137. PMID:32421593.

Laughlin LC, Moloney DM, Samels SB, Sears RM, Cain CK. Reducing shock imminence eliminates poor avoidance in rats. *Learn Mem*. 2020 Jun 15;27(7):270-274. PMID:32540916.

LeDoux JE. Thoughtful feelings. *Curr Biol*. 2020 Jun 8;30(11):R619-R623. PMID: 32516605.

Lee JY, Pahl K, Kim W. Correlates of Cannabis Use Disorders among urban women of color: childhood abuse, relationship with spouse/partner, and media exposure. *Journal of Substance Use* 2020.

Li Z, Zhang T, Xu L, Wei Y, Tang Y, Hu Q, Liu X, Li X, Davis J, Smith R, Jin H, Wang J. Decreasing risk of psychosis by sulforaphane study protocol for a randomized, double-blind, placebo-controlled, clinical multi-centre trial. *Early Interv Psychiatry*. 2020 May 21. PMID: 32436318.

Lindenmayer JP, Verghese C, Marder SR, Burke J, Jimenez R, Siegert S, Liang GS, O'Brien CF. A long-term, open-label study of valbenazine for tardive dyskinesia. *CNS Spectr*. 2020 May 18:1-9. PMID: 32419679.

Lindenmayer JP, Glick ID, Talreja H, Underriner M. Persistent Barriers to the Use of Long-Acting Injectable Antipsychotics for the Treatment of

Schizophrenia. *J Clin Psychopharmacol*. 2020 Jul/Aug;40(4):346-349. PMID: 32639287.

Nentwich M, Ai L, Madsen J, Telesford QK, Haufe S, Milham MP, Parra LC. Functional connectivity of EEG is subject-specific, associated with phenotype, and different from fMRI. *Neuroimage*. 2020 May 31; 218:117001. PMID: 32492509.

Papakostas GI, Salloum NC, Hock RS, Jha MK, Murrough JW, Mathew SJ, Iosifescu DV, Fava M. Efficacy of Esketamine Augmentation in Major Depressive Disorder: A Meta-Analysis. *J Clin Psychiatry*. 2020 May 26;81(4). PMID: 32459407.

Park H, Petkova E, Tarpey T, Ogden RT. A constrained single-index regression for estimating interactions between a treatment and covariates. *Biometrics*. 2020 Jun 23. PMID: 32573759.

Patel GH, Arkin SC, Ruiz-Betancourt DR, DeBaun HM, Strauss NE, Bartel LP, Grinband J, Martinez A, Berman RA, Leopold DA, Javitt DC. What you see is what you get: visual scanning failures of naturalistic social scenes in schizophrenia. *Psychol Med*. 2020 Jun 5:1-10. PMID: 32498743.

Peng GCY, Alber M, Buganza Tepole A, Cannon WR, De S, Dura-Bernal S et al. Multiscale Modeling Meets Machine Learning: What Can We Learn? *Archives of Computational Methods in Engineering* 2020.

Pizzagalli DA, Smoski M, Ang YS, Whitton AE, Sanacora G, Mathew SJ, Nurnberger J Jr, Lisanby SH, Iosifescu DV, Murrough JW, Yang H, Weiner RD, Calabrese JR, Goodman W, Potter WZ, Krystal AD. Selective kappa-opioid antagonism ameliorates anhedonic behavior: evidence from the Fast-fail Trial in Mood and Anxiety Spectrum Disorders (FAST-MAS). *Neuropsychopharmacology*. 2020 Jun 16. PMID: 32544925.

Restrepo A, Scheininger T, Clucas J, Alexander L, Salum GA, Georgiades K, Paksarian D, Merikangas KR, Milham MP. Problematic internet use in children and adolescents: associations with psychiatric disorders and impairment. *BMC Psychiatry*. 2020 May 27;20(1):252. PMID: 32456610.

Schoretsanitis G, Kane JM, Correll CU, Marder SR, Citrome L, Newcomer JW, Robinson DG, Goff DC, et al.; American Society of Clinical Psychopharmacology, Pharmakopsychiatrie TDDMTFOTAFNU. Blood Levels to Optimize Anti-psychotic Treatment in Clinical Practice: A Joint Consensus Statement of the American Society of Clinical Psychopharmacology and the Therapeutic Drug Monitoring Task Force of the Arbeitsgemeinschaft für Neuropsychopharmakologie und Pharmakopsychiatrie. *J Clin Psychiatry*. 2020 May 19;81(3). PMID: 32433836.

Sidtis D. What's in a Sociopolitical Pronoun? A Linguist Looks at Grammatical Gender in Gender Declaration. *Studies in Linguistics and Literature* 2020;4(3):29-32.

Stephens GS, Fu CH, St Romain CP, Zheng Y, Botterill JJ, Scharfman HE, Liu Y, Chin J. Genes Bound by Δ FosB in Different Conditions with Recurrent Seizures Regulate Similar Neuronal Functions. *Front Neurosci*. 2020 May 28; 14:472. PMID: 32536852.

Yang SJ, Shin H, Lee SH, Lee S, Alzheimer's Disease Neuroimaging Initiative. Functional linear regression model with randomly censored data: Predicting conversion time to Alzheimer's disease. *Computational Statistics & Data Analysis* 2020; 150:107009.

CONFERENCE ABSTRACTS

Society of Biological Psychiatry's 75th Annual Meeting

Eng GK, Brown C, Ludlow M, Collins K, Tobe RH, Iosifescu DV et al. Resting-State Functional Connectivity Underlying Interoception in Obsessive-Compulsive Disorder. *Biological Psychiatry* 87[9 Suppl.], S439. 2020.

Dulman R, Zhang H, Yaragudri V, Pandey S. Cannabinoid Neutral Antagonism Reduces Chronic Ethanol Drinking Without Negative Affective and Metabolic Side Effects. *Biological Psychiatry* 87[9 Suppl.], S371. 2020.

Ely B, Xu J, Liu Q, Simkovic S, Gabbay V. Optimizing Habenula Resting-State fMRI Reveals Network Abnormalities Related to Adolescent Mood and Anxiety Symptoms. *Biological Psychiatry* 87[9 Suppl.], S34-S35. 2020.

Smith R, Sershen H, Auta J, Zadeh J, Lajtha A, Davis J et al. mRNA Expression of Methylation Cycle and Related Genes in Lymphocytes and Brains of Patients with Schizophrenia and Non-Psychotic Controls. *Biological Psychiatry* 87[9 Suppl.], S200. 2020.

Solomonov N, Victoria L, Dunlop K, Respino M, Hoptman MJ, Liston C et al. Resting State Functional Connectivity of the Reward System and Outcomes in Psychotherapies for Late-Life Depression. *Biological Psychiatry* 87[9 Suppl.], S439. 2020.

Kalynchuk LE, Brymer KJ, Botterill JJ, Romay-Tallon R, Mitchell MA, Caruncho HJ. Fast-Acting Anti-depressant-Like Effects of Reelin Evaluated in the Repeated-Corticosterone Chronic Stress Paradigm. *Biological Psychiatry* 87[9 Suppl.], S74. 2020.

Hoptman M, Javitt D. A Mediation Reanalysis of Pathways from Frontal Dysfunction to Aggression: The Role of Emotional Impulsivity. *Biological Psychiatry* 87[9 Suppl.], S356. 2020.

Ganancia L, Galfalvy H, Cisneros S, Basseda Z, Cooper TB, Figueira ML et al. Relationships Between Inflammatory Markers and Suicide Risk Status in Major Depression. *Biological Psychiatry* 87[9 Suppl.], S39. 2020.

Ahmed A, Dhimes H, Ljuri I, Seddo M, Pistillo T, Khan A et al. A Pilot Study of Cognitive Training Effects on Neural Mechanisms of Emotion Regulation. *Biological Psychiatry* 87[9 Suppl.], S136-S137. 2020.

Collins K, Brown C, Ludlow M, Eng GK, Tobe R, Iosifescu DV et al. Identifying Subtypes of Sensory Symptoms in Obsessive-Compulsive Disorder. *Biological Psychiatry* 87[9 Suppl.], S402. 2020.

Liu Q, Ely B, Stern E, Xu J, Gabbay V. Positive Valence Systems Deficits in Adolescent Depression.

Biological Psychiatry 87[9 Suppl.], S322-S323. 2020.

Maayan L, Larr A, Hoptman M, Reiss P, Nierenberg J, Leventhal B. Sex Differences in Neural Connectivity in Obesity. Biological Psychiatry 87[9 Suppl.], S337. 2020.

Pereira-Sanchez V, Franco A, de Castro-Manglano P, Vallejo-Valdivielso M, Diez-Suarez A, Soutullo CA et al. Resting-State fMRI Correlates of Clinical Response to Stimulant Treatments in Children and Adolescents With ADHD. Biological Psychiatry 87[9 Suppl.], S19-S20. 2020.

McKenna F, Miles L, Donaldson J, Castellanos F, Lazar M. Diffusion Kurtosis Imaging of the Cerebellum in Autism Spectrum Disorder. Biological Psychiatry 87[9 Suppl.], S272. 2020.

Opendak M, Theisen E, Blomkvist A, Hollis K, Lind T, Sarro E et al. Adverse Caregiving in Infancy Blunts Neural Processing of the Mother: Translating Across Species. Biological Psychiatry 87[9 Suppl.], S359. 2020.

Woo J, Opendak M, Sullivan R. Consolidation of Adverse Memories is Differentially Modulated by MTOR and ERK Across Development. Biological Psychiatry 87[9 Suppl.], S377. 2020.

Qi W, Li C, Blessing E, Ardekani B, Freudenreich O, Cather C et al. Effect of Citalopram on Hippocampal Atrophy in First-Episode Psychosis: Structural MRI Results from the DECIFER Trial. Biological Psychiatry 87[9 Suppl.], S166. 2020.

Tural U, Iosifescu DV. Neuropeptide Y in PTSD, MDD and Chronic Stress: A Systemic Review and Meta-Analysis. Biological Psychiatry 87[9 Suppl.], S205-S206. 2020.

McKenna F, Sui Y, Bertisch H, Goff D, Lazar M. Association Between Gray Matter Microstructure, Cortical Thinning, Illness Duration and Executive Functioning in Psychotic Spectrum Disorders. Biological Psychiatry 87[9 Suppl.], S143. 2020.

Tondo LP, Cupertino R, Sanvicente-Vieira B, Rothmann L, Genovese R, Ferreira PE et al. Reduced White Matter Integrity is Associated with Smoked Cocaine Use Disorder: Effects of Chronicity

of Addiction but No Sex Differences. Biological Psychiatry 87[9 Suppl.], S328-S329. 2020.

XXIXth Annual Meeting of the European Chemoreception Research Organization, 2019

Olofsson J, Zhou G, East B, Zelano C, Wilson D. S36- Odor identification in rats: Behavioral and electrophysiological evidence of learned olfactory-auditory associations. Chemical Senses 45[2], 133-134. 2020.

Coureaud G, Wilson D. P58- Cortical processing of configurally perceived odor mixtures. Chemical Senses 45[2], 162-163. 2020.

Wilson D. S24- Neurobiology of odor object perception in multi-sensory contexts. Chemical Senses 45[2], 129. 2020.

Schizophrenia International Research Society (SIRS) 2020

Su W, Zhu T, Xu L, Wei Y, Zeng B, Zhang T et al. S171. EFFECT OF DAOA GENETIC VARIATION ON WHITE MATTER ALTERATION IN CORPUS CALLOSUM IN PATIENTS WITH FIRST-EPISEODE SCHIZOPHRENIA. Schizophrenia Bulletin 46[Suppl. 1], S102. 2020.

Lindenmayer JP, Khan A, Harvey P, Keefe R, Liharska L, Yavorsky C et al. M120. IMPAIRED CLINICAL INSIGHT AS A PREDICTOR OF RELAPSE IN SCHIZOPHRENIA. Schizophrenia Bulletin 46[Suppl. 1], S180-S181. 2020.

Lindenmayer JP, Khan A, Dagum P, Mena E, Yu J, Seddo M et al. S105. DIGITAL BIOMARKERS FOR THE ASSESSMENT OF COGNITIVE, BEHAVIORAL AND FUNCTIONAL OUTCOMES IN INDIVIDUALS WITH SCHIZOPHRENIA. Schizophrenia Bulletin 46[Suppl. 1], S74. 2020.

Ahmed A, Dhimes SE, Kirstie-Kulsa M, Hefner A, Ljuri I, Seddo M et al. S50. COGNITION AND EMOTION REGULATION IN SCHIZOPHRENIA PATIENTS WITH A HISTORY OF AGGRESSION. Schizophrenia Bulletin 46[Suppl. 1], S51-S52. 2020.