

# 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

---

January – February 2021

*Stuart Moss, MLS, Editor*

---

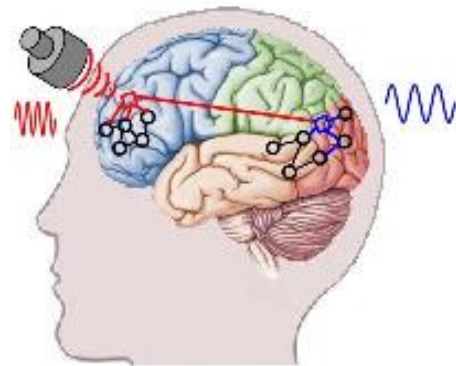
## WHAT'S ALL THE FUS ABOUT?

*By Brian Russ, PhD*

Transcranial focused ultrasound (FUS) has recently seen a large increase in its use as a non-invasive method of targeted neuromodulation. Previous research has shown that FUS can cause focal disruptions of neural activity. Importantly, with properly calibrated transducers, one can target regions at a variety of depths. While the use of FUS as a neuromodulatory technique is still in its early stages, there has been a large effort by the groups involved in testing the parameter space and defining the most effective stimulation protocols (King et al 2013). Since these early studies, FUS has been translated to both human and nonhuman primate (NHP) studies. While FUS can act directly on brain tissue to modulate neuronal functioning, it can also be used as part of a novel non-invasive neuronal transfection procedure. Previous research in both rodents and NHPs has shown that FUS can reliably produce transient openings of the blood brain barrier (BBB) (Marquet et al., 2011, 2014; Konofagou et al., 2012; Tung et al., 2011). Through the delivery of focused ultrasound to targeted brain structures, it is possible to temporarily open the BBB in a circumscribed brain region, and then load the peripheral circulatory system with viral constructs designed to deliver genetic material that does not ordinarily cross the BBB. This enables the

noninvasive delivery of drugs or neuromodulators (DREADD\* and optogenetic receptors) through the peripheral circulation, and makes FUS a potentially ideal translational method for delivering both chemogenetic and optogenetic approaches.

\* Designer Receptors Exclusively Activated by Designer Drugs



*Schematic of the influence of Focused Ultrasound on network activity within the brain.*

While still in its early stages as a methodology, FUS shows promise for being able to safely and efficiently allow drugs and viral vectors to cross the BBB at precise locations in humans. Toward this end, **Drs. Arnaud Falchier, Brian Russ, and Charles Schroeder** of NKI (Translational Neuroscience Laboratories, Center for Biomedical Imaging & Neuromodulation) have begun a novel research

project which aims to determine the feasibility and effects of noninvasive DREADD manipulation on Parkinsonian symptoms in nonhuman primates. The NKI team has started this project in collaboration with researchers from Columbia University, in particular Drs. Serge Przedborski, Kimberly Kwei, Guy McKhann, Vincent Ferrera, and Elisa Konofagou.

King RL, Brown JR, Newsome WT, Pauly KB (2013) Effective Parameters for Ultrasound-Induced *In Vivo* Neurostimulation. *Ultrasound in Medicine & Biology* 39:312–331.

Konofagou EE (2012) Optimization of the ultrasound-induced blood-brain barrier opening. *Theranostics* 2:1223–1237.

Marquet F, Tung Y-S, Teichert T, Ferrera V, Konofagou E (2011) Initial in vivo feasibility of a pre-clinical focused ultrasound system applied to blood-brain barrier opening in monkeys. *2011 IEEE Int Ultrasonics Symposium:2001–2004*.

Marquet F, Teichert T, Wu S-Y, Tung Y-S, Downs M, Wang S, Chen C, Ferrera V, Konofagou EE (2014) Real-time, transcranial monitoring of safe blood-brain barrier opening in non-human primates. *PLoS ONE* 9:e84310.

Tung Y-S, Marquet F, Teichert T, Ferrera V, Konofagou E Bubble dependence of the mechanism of FUS-induced blood-brain barrier opening in mice and in monkeys in vivo. *2011 IEEE Int Ultrasonics Symposium:1898–1901*.

## FROM AROUND THE INSTITUTE

### NKI Summer Scholars

*Contributed by Internship Program Co-Directors Kristin Dietz Trautman, LCSW and Anna MacKay-Brandt, PhD*

It may be snowing outside, but we are getting ready for our summer internship program, newly named NKI Summer Scholars. Considering the uncertain course of the pandemic, we have offered remote and partially remote summer placements.

Since the first of December, we have received almost 200 applications from listings on Handshake and other college recruiting sites. With so many high caliber candidates, it is difficult to select a feasible number to interview. We are happy to forward applications to investigators who have openings for interns and wish to participate in the program.

NKI Summer Scholars have a faculty mentor who guides and directs their individualized internship experience. In addition, the NKI internship program hosts weekly presentations and discussions on a variety of topics. These seminars are led by NKI faculty and tailored to interns' interests, level of experience, and educational and career goals. In addition to faculty presentations on their areas of expertise, discussions of their own education and career paths have proven to be quite popular. The seminars will be held from 12-1 pm on Wednesdays from the first week in June through the first week in August. If you would like to have your intern participate in this program or if you would like to be a faculty presenter, please let us know. We are happy to add to the diversity of our Summer Scholars cohort and to the range of our faculty seminar offerings.

Faculty interested in publicizing internship opportunities in their own departments or research groups may want to list positions on college recruitment sites. We would be glad to offer guidance on that process.



**Anina Klein**, of the Information Sciences Division (ISD) and the Compliance Department's Post-Approval Monitoring Program, is excited to announce that a study for which she is a monitor announced positive results from its Year 2 analysis. The pivotal Phase 3 CARDINAL Study of Bardoxolone Methyl in pediatric and adult patients with Alport Syndrome reported positive outcomes with regard to kidney functioning for patients who either remained on or discontinued study drug. Based on these results, Reata Pharmaceuticals will be submitting a New Drug Application to the FDA in the first quarter of 2021. Bardoxolone Methyl has the potential to become the first approved therapy for Alport Syndrome, a life-threatening disease that affects 30,000-60,000 patients in the United States. More information can be found in this [press release](#).

In addition to the CARDINAL Study, Anina is a monitor for two other Reata studies: EAGLE, an open label extension of the CARDINAL study, and FALCON, a Phase 3 study of Bardoxolone Methyl in adult patients with Polycystic Kidney Disease. For those who may not be familiar with clinical research monitoring, a monitor (or Clinical Research Associate (CRA)) ensures clinical sites are complying with the protocol, adhering to the principles of Good Clinical Practice as well as local, state, and federal guidelines, producing quality and verifiable data, and that the rights, safety, and well-being of research participants are protected.



**Dr. Ralph Nixon** (Dementia Research) is quoted in a recent article on the Alzforum site. The online entry, "[Do Lysosomes Help Propagate Tau Seeds](#)", comments on a primary publication in *Acta Neuropathologica*.



After working as a Laboratory Animal Care Technician for a little over a year, **Taylor Hendrickson** has been promoted to Research Support Assistant in Efrat Levy's lab (Dementia Research). Taylor is excited for the opportunity to learn laboratory techniques and participate in research.

## PUBLICATIONS OF NOTE

# nature

**Henry Evrard** (Biomedical Imaging & Neuromodulation) coauthored this recent paper in *Nature*.

Ramirez-Villegas JF, Besserve M, Murayama Y, Evrard HC, Oeltermann A, Logothetis NK. [Coupling of hippocampal theta and ripples with pontogeniculooccipital waves](#). *Nature*. 2021 Jan; 589(7840):96-102. [Erratum in: *Nature*. 2020 Dec 9] PMID: 33208951.



NKI Director **Donald Goff** published this *JAMA* Insights review summarizing medication options for patients with schizophrenia.

Goff DC. [The Pharmacologic Treatment of Schizophrenia-2021](#). *JAMA*. 2020 Dec 28. PMID: 33369626.

The American Journal of  
**Psychiatry**

**Menahem Krakowski** (Clinical Research), with **Umit Tural** and Pal Czobor, published his latest results in the *American Journal of Psychiatry*. This paper was highlighted in an APA *Psychiatric News* alert: "[Clozapine Found Most Effective to Reduce Aggression in Patients with Schizophrenia and Conduct Disorder](#)".

Krakowski M, Tural U, Czobor P. [The Importance of Conduct Disorder in the Treatment of Violence in Schizophrenia: Efficacy of Clozapine Compared with Olanzapine and Haloperidol](#). Am J Psychiatry. 2021 Jan 21. PMID: 33472389.

Also recently published in the *American Journal of Psychiatry* is this paper coauthored by **Kate Collins** (Clinical Research).

Feder A, Costi S, Rutter SB, Collins AB, Govindarajulu U, Jha MK, Horn SR, Kautz M, Corniquel M, Collins KA, Bevilacqua L, Glasgow AM, Brallier J, Pietrzak RH, Murrough JW, Charney DS. [A Randomized Controlled Trial of Repeated Ketamine Administration for Chronic Posttraumatic Stress Disorder](#). Am J Psychiatry. 2021 Jan 5. PMID: 33397139.

**Molecular  
Psychiatry**

**Emily Stern** (Clinical Research) coauthored this Expert Review published in *Molecular Psychiatry*.

Shephard E, Stern ER, van den Heuvel OA, Costa DLC, Batistuzzo MC, Godoy PBG, Lopes AC, Brunoni AR, Hoexter MQ, Shavitt RG, Reddy YCJ, Lochner C, Stein DJ, Simpson HB, Miguel EC. Toward a neurocircuit-based taxonomy to guide treatment of obsessive-compulsive disorder. Mol Psychiatry. 2021 Jan 7. PMID: 33414496.

# JAMA Psychiatry

**Katlyn Nemani** (Clinical Research) published this paper with **Donald Goff**, **Eva Petkova**, and others in *JAMA Psychiatry*. The article has received widespread attention, including a [Psychiatric News Alert](#) and a [HealthDay news report](#). In addition, Dr. Goff did an [audio interview](#) with *JAMA Psychiatry*, and Dr. Nemani will be the OMH Statewide Grand Rounds presenter on February 17.

Nemani K, Li C, Olfson M, Blessing EM, Razavian N, Chen J, Petkova E, Goff DC. [Association of Psychiatric Disorders with Mortality Among Patients With COVID-19](#). JAMA Psychiatry. 2021 Jan 27. PMID: 33502436.

Also appearing in *JAMA Psychiatry* is this Viewpoint by Center for Biomedical Imaging and Neuromodulation Director **Michael Milham**, **Ting Xu**, and Joshua Vogelstein.

Milham MP, Vogelstein J, Xu T. [Removing the Reliability Bottleneck in Functional Magnetic Resonance Imaging Research to Achieve Clinical Utility](#). JAMA Psychiatry. 2021 Jan 13. PMID: 33439234.

**Health Services Insights**

**Marilena Lekas**, **Kerstin Pahl**, and **Crystal Lewis** (Social Solutions & Services) contributed this Perspectives piece to the open access *Health Services Insights* journal.

Lekas HM, Pahl K, Fuller Lewis C. [Rethinking Cultural Competence: Shifting to Cultural Humility](#). Health Serv Insights. 2020 Dec 20; 13:1178632920970580. PMID: 33424230.



The latest research from the lab of Center for Dementia Research Director **Ralph Nixon** appears in *Cell Reports*. **Anna Pensalfini** is the first author of this open access paper.

Pensalfini A, Kim S, Subbanna S, Bleiwas C, Goulbourne CN, Stavrides PH, Jiang Y, Lee JH, Darji S, Pawlik M, Huo C, Peddy J, Berg MJ, Smiley JF, Basavarajappa BS, Nixon RA. [Endosomal Dysfunction Induced by Directly Overactivating Rab5 Recapitulates Prodromal and Neurodegenerative Features of Alzheimer's Disease](#). Cell Rep. 2020 Nov 24; 33(8):108420. PMID: 33238112.

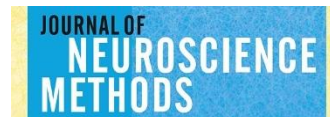


**Pejman Sehatpour** and other members of the Schizophrenia Research group published this paper in the open access journal *Frontiers in Psychiatry*. Schizophrenia Research Director **Daniel Javitt** is the senior author.

Sehatpour P, Bassir Nia A, Adair D, Wang Z, DeBaun HM, Silipo G, Martinez A, Javitt DC. [Multimodal Computational Modeling of Visual Object Recognition Deficits but Intact Repetition Priming in Schizophrenia](#). Front Psychiatry. 2020 Nov 23; 11:547189. PMID: 33329086.

Also recently published in *Frontiers in Psychiatry* is this paper coauthored by Clinical Research Director **Dan Iosifescu**.

Garakani A, Murrough JW, Freire RC, Thom RP, Larkin K, Buono FD, Iosifescu DV. [Pharmacotherapy of Anxiety Disorders: Current and Emerging Treatment Options](#). Front Psychiatry. 2020 Dec 23; 11:595584. PMID: 33424664.



**Megan Gautier** and **Stephen Ginsberg** (Dementia Research) recently published their latest paper in the *Journal of Neuroscience Methods*.

Gautier MK, Ginsberg SD. [A method for quantification of vesicular compartments within cells using 3D reconstructed confocal z-stacks: Comparison of ImageJ and Imaris to count early endosomes within basal forebrain cholinergic neurons](#). J Neurosci Methods. 2020 Dec 15; 350:109038. PMID: 33338543.



**Umit Tural** and **Dan Iosifescu** (Clinical Research) published a systematic review in the *Journal of Psychiatric Research*.

Tural U, Iosifescu DV. [A systematic review and network meta-analysis of carbon dioxide provocation in psychiatric disorders](#). J Psychiatr Res. 2020 Nov 19. PMID: 33250190.



**Alex Franco**, **Michael Milham**, **Stan Colcombe**, and **Ryan Lim** (Biomedical Imaging & Neuromodulation) coauthored this open access article appearing in *Neuroimage*.

Ai L, Craddock RC, Tottenham N, Dyke JP, Lim R, Colcombe S, Milham M, Franco AR. [Is it time to switch your T1W sequence? Assessing the impact of prospective motion correction on the reliability and quality of structural imaging](#). Neuroimage. 2020 Nov 26; 226:117585. PMID: 33248256.

Current Opinion in  
**Psychiatry**

**Xavier Castellanos** (Clinical Research) coauthored this review on ADHD imaging in *Current Opinion in Psychiatry*.

Pereira-Sanchez V, Castellanos FX. [Neuroimaging in attention-deficit/hyperactivity disorder](#). *Curr Opin Psychiatry*. 2020 Dec 4. PMID: 33278156.

### 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.*



Login changes for NCBI accounts are coming soon. After June 1, it will be necessary to login using your institution, social media, Google, Microsoft or login.gov account username and password. More details and guidance about this change can be found [here](#). A webinar discussing the changes will be held on March 3. You can [register here](#) for the webinar.



For some insight into how Google searching works, check out a [series of articles](#) that was recently published on the Google Keyword blog. Topics covered include [how Google organizes information](#), [where all the information comes from](#), [how search ads work](#), [how location helps provide relevant results](#), and more.



Over the past year, the COVID-19 pandemic has galvanized the world's attention and energy. But this is not the first public health crisis (and it won't be the last), and it stands to reason that looking to past experience could be instructive. One wide-ranging place to start is this National Library of Medicine (NLM) [online collections tour](#) focused on epidemics. Resources include images and films from the historical collection, online exhibitions, and recorded NLM history talks.



Has your doctor prescribed a new medication for you and you want to learn more about it? Do you want to know if a dietary supplement will interact with a medication you are taking? MedlinePlus has [information on drugs, herbs, and supplements](#) including side effects, dosage, and special precautions. [MedlinePlus](#) also provides a wealth of information on numerous health topics, genetics, and medical tests. It even has [healthy recipe suggestions](#).



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.)

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



With so many people spending so much time on social media, it makes sense that some health professionals are using those platforms to share health information (and dispel misinformation) – on COVID-19, vaccines, and other topics. Here are some examples of good information in an appealing package:

- [Dr. Austin](#) (TikTok)
- [Dr. Mike](#) (YouTube)
- [Dr. J. Rutland](#) (YouTube)
- [Dr. Leslie](#) (TikTok)



## 2020 Science Highlights

Without a doubt, the runaway science story of 2020 was the accelerated [development of the COVID-19 vaccines](#). But you can also catch up on some [other big stories in science](#) courtesy of the NIH Director's Blog. You can also find some great science images [here](#) (from *Nature*).

And from the JAMA Network, here are links to the most [viewed](#) and [discussed](#) articles of 2020.

## EVENTS AND SEMINARS

### NKI Alternative Careers Talk (ACT) Series

The Nathan Kline Institute Community Building Committee is hosting a new monthly series on career trajectories, the NKI Alternative Careers Talk (ACT) series. The goal of this series is to provide scientists at all career levels – from undergraduates to research technicians to post-doctoral fellows – information on alternative careers in science and how these scientists made their career choices. Throughout the series we will bring in (through zoom calls) scientists in various careers such as government, industry, library sciences, data analysis, and more, who will discuss their career paths and how they made important life and career choices.

The NKI ACT began on February 8 and will run on the second Monday of each month at noon. Upcoming dates are March 8, April 12, and May 10.

The series will take place on the following zoom channel: <https://us02web.zoom.us/j/89540284886>

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



### American College of Neuropsychopharmacology

**Dr. Robert Smith** (Neurochemistry) presented two posters at the December 2020 virtual Annual Meeting of the American College of Neuropsychopharmacology. The poster titles were:

- Sulforaphane as a Treatment for Autism: A Randomized Double-Blind Study
- Efficacy of Add-On Sulforaphane for Improving Cognition and Symptoms in First-Episode Schizophrenia: A Randomized Double-Blind Study

## 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 6,500 items dating back to 1995, and can be searched from the [myNKI website](#).

Ai L, Craddock RC, Tottenham N, Dyke JP, Lim R, Colcombe S, Milham M, Franco AR. Is it time to switch your T1W sequence? Assessing the impact of prospective motion correction on the reliability and quality of structural imaging. *Neuroimage*. 2020 Nov 26; 226:117585. PMID: 33248256.

Bilodeau-Houle A, Bouchard V, Morand-Beaulieu S, Herringa RJ, Milad MR, Marin MF. Anxiety Sensitivity Moderates the Association Between Father-Child Relationship Security and Fear Transmission. *Front Psychol*. 2020 Oct 14; 11:579514. PMID: 33162918.

Cho JW, Korchmaros A, Vogelstein JT, Milham MP, Xu T. Impact of concatenating fMRI data on reliability for functional connectomics. *Neuroimage*. 2020 Nov 26; 226:117549. PMID: 33248255.

Feder A, Costi S, Rutter SB, Collins AB, Govindarajulu U, Jha MK, Horn SR, Kautz M, Corniquel M, Collins KA, Bevilacqua L, Glasgow AM, Brallier J, Pietrzak RH, Murrough JW, Charney DS. A Randomized Controlled Trial of Repeated Ketamine Administration for Chronic Posttraumatic Stress Disorder. *Am J Psychiatry*. 2021 Jan 5. PMID: 33397139.

FeldmanHall O, Montez DF, Phelps EA, Davachi L, Murty VP. Hippocampus guides adaptive learning during dynamic social interactions. *J Neurosci*. 2020 Dec 17. PMID: 33361462.

Ganança L, Galfalvy HC, Cisneros-Trujillo S, Basseda Z, Cooper TB, Ren X, Figueira ML, Oquendo MA, Mann JJ, Sublette ME. Relationships between inflammatory markers and suicide risk status in major depression. *J Psychiatr Res*. 2020 Dec 17; 134:192-199. PMID: 33388702.

Garakani A, Murrough JW, Freire RC, Thom RP, Larkin K, Buono FD, Iosifescu DV. Pharmacotherapy of Anxiety Disorders: Current and Emerging Treatment Options. *Front Psychiatry*. 2020 Dec 23; 11:595584. PMID: 33424664.

Gautier MK, Ginsberg SD. A method for quantification of vesicular compartments within cells using 3D reconstructed confocal z-stacks: Comparison of ImageJ and Imaris to count early endosomes within basal forebrain cholinergic neurons. *J Neurosci Methods*. 2020 Dec 15; 350:109038. PMID: 33338543.

Goff DC. The Pharmacologic Treatment of Schizophrenia-2021. *JAMA*. 2020 Dec 28. PMID: 33369626.

Gong ZQ, Gao P, Jiang C, Xing XX, Dong HM, White T, Castellanos FX, Li HF, Zuo XN. DREAM : A Toolbox to Decode Rhythms of the Brain System. *Neuroinformatics*. 2021 Jan 7. PMID: 33409718.

Kline EA, Warner CM, Grapin SL, Reyes-Portillo JA, Bixter MT, Cunningham DJ, Mahmud F, Singh T, Weeks C. The Relationship Between Social Anxiety and Internalized Racism in Black Young Adults. *J Cogn Psychother*. 2021 Jan 4. PMID: 33397783.



Lekas HM, Pahl K, Fuller Lewis C. Rethinking Cultural Competence: Shifting to Cultural Humility. *Health Serv Insights*. 2020 Dec 20; 13:1178632920970580. PMID: 33424230.

Liu Y, Gu N, Cao X, Zhu Y, Wang J, Smith RC, Li C. Effects of transcranial electrical stimulation on working memory in patients with schizophrenia: A systematic review and meta-analysis. *Psychiatry Res*. 2020 Dec 23; 296:113656. PMID: 33360429.

Li X, Guo X, Fan X, Feng T, Wang C, Yao Z, Xu X, Chen Z, Wang H, Xie S, He J, Zhuo K, Xiang Q, Cen H, Wang J, Smith RC, Jin H, Keshavan MS, Marder SR, Davis JM, Jiang K, Xu Y, Liu D. Sequential Multiple-Assignment Randomized Trials to Compare Antipsychotic Treatments (SMART-CAT) in first-episode schizophrenia patients: Rationale and trial design. *Schizophr Res*. 2020 Dec 2. PMID: 33279374.

Maldonado D, Tu E, Mahmood S, Wahezi D, Darapaneni R, Sima N, Curiel-Duran L, Pattison LM, Gabbay V, Bauman LJ, Broder A, Rubinstein TB. Medication access difficulty and COVID-related distress are associated with disease flares in rheumatology patients during the COVID-19 pandemic. *Arthritis Care Res (Hoboken)*. 2020 Dec 5. PMID: 33278068.

Marin MF, Bilodeau-Houle A, Morand-Beaulieu S, Brouillard A, Herringa RJ, Milad MR. Vicarious conditioned fear acquisition and extinction in child-parent dyads. *Sci Rep*. 2020 Oct 13; 10(1):17130. PMID: 33051522.

McKenna F, Miles L, Donaldson J, Castellanos FX, Lazar M. Diffusion kurtosis imaging of gray matter in young adults with autism spectrum disorder. *Sci Rep*. 2020 Dec 8; 10(1):21465. PMID: 33293640.

Messinger A, Sirmipilatz N, Heuer K, Loh KK, Mars RB, Sein J, Xu T, Glen D, Jung B, Seidlitz J, Taylor P, Toro R, Garza-Villarreal EA, Sponheim C, Wang X, Benn RA, Cagna B, Dadarwal R, Evrard HC, Garcia-Saldivar P, Giavasis S, Hartig R, Lepage C, Liu C, Majka P, Merchant H, Milham MP, Rosa MGP, Tasserie J, Uhrig L, Margulies DS, Klink PC. A collaborative resource platform for non-human

primate neuroimaging. *Neuroimage*. 2020 Nov 20; 226:117519. PMID: 33227425.

Milham MP, Vogelstein J, Xu T. Removing the Reliability Bottleneck in Functional Magnetic Resonance Imaging Research to Achieve Clinical Utility. *JAMA Psychiatry*. 2021 Jan 13. PMID: 33439234.

Mullins AE, Williams MK, Kam K, Parekh A, Bubu OM, Castillo B, Roberts ZJ, Rapoport DM, Ayappa I, Osorio RS, Varga AW. Effects of obstructive sleep apnea on human spatial navigational memory processing in cognitively normal older individuals. *J Clin Sleep Med*. 2021 Jan 5. PMID: 33399067.

Nunes ML, Esper NB, Franco AR, Radaelli G, Soder RB, Bomfim R, Kalil Neto F, Gameleira FT, Portuguese MW, da Costa JC. Epilepsy after congenital zika virus infection: EEG and neuroimaging features. *Seizure*. 2020 Nov 18; 84:14-22. PMID: 33260026.

Pensalfini A, Kim S, Subbanna S, Bleiwas C, Goulbourne CN, Stavrides PH, Jiang Y, Lee JH, Darji S, Pawlik M, Huo C, Peddy J, Berg MJ, Smiley JF, Basavarajappa BS, Nixon RA. Endosomal Dysfunction Induced by Directly Overactivating Rab5 Recapitulates Prodromal and Neurodegenerative Features of Alzheimer's Disease. *Cell Rep*. 2020 Nov 24; 33(8):108420. PMID: 33238112.

Pereira-Sanchez V, Castellanos FX. Neuroimaging in attention- deficit/hyperactivity disorder. *Curr Opin Psychiatry*. 2020 Dec 4. PMID: 33278156.

Perry RE, Braren SH, Opendak M, Brandes-Aitken A, Chopra D, Woo J, Sullivan R, Blair C; Family Life Project Key Investigators. Elevated infant cortisol is necessary but not sufficient for transmission of environmental risk to infant social development: Cross-species evidence of mother-infant physiological social transmission. *Dev Psychopathol*. 2020 Dec; 32(5):1696-1714. PMID: 33427190.

Pomara N, Imbimbo BP. Brain Amyloid Deposition in Late-Life Depression. *Biol Psychiatry*. 2020 Nov 11. PMID: 33189332.

Ramirez-Villegas JF, Besserve M, Murayama Y, Evrard HC, Oeltermann A, Logothetis NK. Coupling of hippocampal theta and ripples with pontogeniculooccipital waves. *Nature*. 2021 Jan; 589(7840):96-102. [Erratum in: *Nature*. 2020 Dec 9] PMID: 33208951.

Sehatpour P, Dondé C, Adair D, Kreither J, Lopez-Calderon J, Avissar M, Bikson M, Javitt DC. Comparison of cortical network effects of high-definition and conventional tDCS during visuomotor processing. *Brain Stimul*. 2020 Nov 9; 14(1):33-35. PMID: 33181350.

Sehatpour P, Bassir Nia A, Adair D, Wang Z, DeBaun HM, Silipo G, Martinez A, Javitt DC. Multimodal Computational Modeling of Visual Object Recognition Deficits but Intact Repetition Priming in Schizophrenia. *Front Psychiatry*. 2020 Nov 23; 11:547189. PMID: 33329086.

Seo J, Pace-Schott EF, Milad MR, Song H, Germain A. Partial and Total Sleep Deprivation Interferes

with Neural Correlates of Consolidation of Fear Extinction Memory. *Biol Psychiatry Cogn Neurosci Neuroimaging*. 2020 Sep 24. PMID: 33279459.

Shephard E, Stern ER, van den Heuvel OA, Costa DLC, Batistuzzo MC, Godoy PBG, Lopes AC, Brunoni AR, Hoexter MQ, Shavitt RG, Reddy YCJ, Lochner C, Stein DJ, Simpson HB, Miguel EC. Toward a neurocircuit-based taxonomy to guide treatment of obsessive-compulsive disorder. *Mol Psychiatry*. 2021 Jan 7. PMID: 33414496.

Tural U, Iosifescu DV. A systematic review and network meta-analysis of carbon dioxide provocation in psychiatric disorders. *J Psychiatr Res*. 2020 Nov 19. PMID: 33250190.

Vanderwal T, Eilbott J, Kelly C, Frew SR, Woodward TS, Milham MP, Castellanos FX. Stability and similarity of the pediatric connectome as developmental measures. *Neuroimage*. 2020 Nov 11; 226:117537. PMID: 33186720.