



Nolan Williams

Associate Professor of Psychiatry and Behavioral Sciences (Major Laboratories & Clinical Translational Neurosciences Incubator) and, by courtesy, of Radiology (Neuroimaging and Neurointervention)

CLINICAL OFFICE (PRIMARY)

- **Psychiatry and Behavioral Sciences**

401 Quarry Rd

MC 5719

Stanford, CA 94305

Tel (650) 498-9111

Fax (650) 724-9900

Bio

BIO

Nolan Williams, M.D. is an Associate Professor of Psychiatry and Behavioral Sciences at Stanford University and Director of the Stanford Brain Stimulation Lab. The long-term goals of his research program are to develop innovative technologies and therapeutics capable of modulating the neural circuitry disrupted in mood disorders, OCD, and other neuropsychiatric conditions. His team has been developing neuroimaging-based approaches to precisely target therapeutic delivery and predict treatment responses to therapeutic neuromodulation and psychedelics. Dr. Williams earned his M.D. and completed his dual residencies in neurology and psychiatry at the Medical University of South Carolina (MUSC). Triple board-certified in general neurology, general psychiatry, as well as behavioral neurology and neuropsychiatry, Dr. Williams brings a comprehensive background in clinical neuroscience to his role as a clinically active neuropsychiatrist. His expertise extends to the development and implementation of novel therapeutics, including devices and novel compounds, for central nervous system illnesses.

Over the past decade, Dr. Williams' laboratory alongside collaborators at Stanford University have pioneered multiple novel therapeutic and human neuroscience approaches. Notably, Stanford Accelerated Intelligent Neuromodulation Therapy (SAINT) is the world's first non-invasive, rapid-acting neuromodulation approach for treatment-resistant depression. SAINT received FDA Breakthrough Device Designation Status (2021) and FDA Clearance (2022) and is the first psychiatric treatment to be covered by Medicare New Technology Add-On Payment (NTAP). As of April 2024, SAINT has been reimbursed for patients suffering from severe depression within inpatient psychiatric units. The SAINT technology is being deployed both clinically and in research protocols in laboratories and hospitals worldwide. Dr. Williams also has an expertise in psychedelic medicines for neuropsychiatric illness and is the first investigator to conduct mechanistic clinical trials exploring the neurobiological effects of ibogaine.

His research accomplishments have garnered international recognition, earning prestigious awards from the Pritzker Neuropsychiatric Disorders Consortium, One Mind Institute, Wellcome Leap Foundation, International Brain Stimulation Conference, National Institute of Mental Health (Biobehavioral Research Award for Innovative New Scientists), Society of Biological Psychiatry (A. E. Bennett Award), along with multiple awards from the Brain Behavior Research Foundation (most notably the Gerald L. Klerman Award and Colvin Prize). His work has been featured in Scientific American, The New York Times, The Washington Post, USA Today, CBS Sunday Morning, and the TODAY Show.

CLINICAL FOCUS

- Neurology
- Neuropsychiatry
- Interventional Psychiatry
- Psychiatry
- Behavioral Neurology

ACADEMIC APPOINTMENTS

- Associate Professor, Psychiatry and Behavioral Sciences
- Associate Professor (By courtesy), Radiology
- Member, Bio-X
- Member, Wu Tsai Human Performance Alliance
- Member, Maternal & Child Health Research Institute (MCHRI)
- Member, Wu Tsai Neurosciences Institute

ADMINISTRATIVE APPOINTMENTS

- Director, Stanford Interventional Psychiatry Clinical Research, (2019- present)
- Director, Stanford Brain Stimulation Laboratory, (2015- present)
- Chief Resident of Neuropsychiatry, Medical University of South Carolina, (2011-2014)
- Chief Resident of Neurology, Medical University of South Carolina, (2011-2012)

HONORS AND AWARDS

- A.E. Bennett Award, Society of Biological Psychiatry (2024)
- Colvin Prize, Brain & Behavior Research Foundation (2024)
- Leading Research Achievements, Brain & Behavior Research Foundation (2022)
- Leading Research Achievements, Brain & Behavior Research Foundation (2021)
- Biobehavioral Research Award for Innovative New Scientists, National Institute of Mental Health (2020)
- Bipolar Research Award, One Mind (2020)
- Leading Research Achievements, Brain & Behavior Research Foundation (2020)
- Chairman's Award for Advancing Science, Stanford University (2019)
- Gerald R. Klerman Award, Brain & Behavior Research Foundation (2019)
- NARSAD Young Investigator Award, Brain & Behavior Research Foundation (2018-2020)
- NARSAD Young Investigator Award, Brain & Behavior Research Foundation (2016-2018)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Diplomate, American Board of Psychiatry and Neurology (2014 - present)

PROFESSIONAL EDUCATION

- Board Certification, United Council for Neurologic Subspecialties , Behavioral Neurology & Neuropsychiatry (2020)
- Board Certification: Neurology, American Board of Psychiatry and Neurology (2019)
- Board Certification: Psychiatry, American Board of Psychiatry and Neurology (2014)
- NIH R25 Research Fellowship, Medical University of South Carolina , Human Neuroscience (2014)

- Clinical Fellowship, Medical University of South Carolina , Invasive and Non-Invasive Neuromodulation (2014)
- Residency, Medical University of South Carolina , Psychiatry (2014)
- Residency, Medical University of South Carolina , Neurology (2014)
- Internship, Medical University of South Carolina , Internal Medicine (2009)
- MD, Medical University of South Carolina , Medicine (2008)

LINKS

- Stanford Brain Stimulation Lab: <http://med.stanford.edu/bsl.html>

Publications

PUBLICATIONS

- **Towards accredited clinical training in brain stimulation: Proceedings from the Brain Stimulation Subspecialty Summits.** *Brain stimulation*
Siddiqi, S. H., Chen, L., Trapp, N. T., Bukhari-Parlakturk, N., Taylor, J. J., Boes, A. D., Brown, J. C., Barbour, T., Camprodon, J. A., Fox, M. D., Kopell, B. H., MacMillan, C., Fasano, et al
2025
- **Magnesium-ibogaine therapy in veterans with traumatic brain injuries.** *Nature medicine*
Cherian, K. N., Keynan, J. N., Anker, L., Faerman, A., Brown, R. E., Shamma, A., Keynan, O., Coetzee, J. P., Batail, J., Phillips, A., Bassano, N. J., Sahlem, G. L., Inzunza, et al
2024
- **Targeted neurostimulation reverses a spatiotemporal biomarker of treatment-resistant depression.** *Proceedings of the National Academy of Sciences of the United States of America*
Mitra, A., Raichle, M. E., Geoly, A. D., Kratter, I. H., Williams, N. R.
2023; 120 (21): e2218958120
- **Stanford Neuromodulation Therapy (SNT): A Double-Blind Randomized Controlled Trial.** *The American journal of psychiatry*
Cole, E. J., Phillips, A. L., Bentzley, B. S., Stimpson, K. H., Nejad, R., Barmak, F., Veerapal, C., Khan, N., Cherian, K., Felber, E., Brown, R., Choi, E., King, et al
2021: appiajp202120101429
- **Stanford Accelerated Intelligent Neuromodulation Therapy for Treatment-Resistant Depression.** *The American journal of psychiatry*
Cole, E. J., Stimpson, K. H., Bentzley, B. S., Gulser, M. n., Cherian, K. n., Tischler, C. n., Nejad, R. n., Pankow, H. n., Choi, E. n., Aaron, H. n., Espil, F. M., Pannu, J. n., Xiao, et al
2020: appiajp201919070720
- **Attenuation of antidepressant and antisuicidal effects of ketamine by opioid receptor antagonism.** *Molecular psychiatry*
Williams, N. R., Heifets, B. D., Bentzley, B. S., Blasey, C. n., Sudheimer, K. D., Hawkins, J. n., Lyons, D. M., Schatzberg, A. F.
2019
- **Attenuation of Antidepressant Effects of Ketamine by Opioid Receptor Antagonism.** *The American journal of psychiatry*
Williams, N. R., Heifets, B. D., Blasey, C., Sudheimer, K., Pannu, J., Pankow, H., Hawkins, J., Birnbaum, J., Lyons, D. M., Rodriguez, C. I., Schatzberg, A. F.
2018: appiajp201818020138
- **High-dose spaced theta-burst TMS as a rapid-acting antidepressant in highly refractory depression.** *Brain : a journal of neurology*
Williams, N. R., Sudheimer, K. D., Bentzley, B. S., Pannu, J. n., Stimpson, K. H., Duvio, D. n., Cherian, K. n., Hawkins, J. n., Scherrer, K. H., Vyssoki, B. n., DeSouza, D. n., Raj, K. S., Keller, et al
2018
- **Five Year Follow-Up of Bilateral Epidural Prefrontal Cortical Stimulation for Treatment-Resistant Depression** *BRAIN STIMULATION*
Williams, N. R., Short, E. B., Hopkins, T., Bentzley, B. S., Sahlem, G. L., Pannu, J., Schmidt, M., Borckardt, J. J., Korte, J. E., George, M. S., Takacs, I., Nahas, Z.
2016; 9 (6): 897-904
- **Deep brain stimulation (DBS) at the interface of neurology and psychiatry** *JOURNAL OF CLINICAL INVESTIGATION*

Williams, N. R., Okun, M. S.
2013; 123 (11): 4546-4556

- **Personalized cue-reactive delta-theta oscillations guide deep brain stimulation for opioid use disorder.** *bioRxiv : the preprint server for biology*
Qiu, L., Nho, Y., Seilheimer, R., Kim, M. J., Tufanoglu, A., Williams, N., Wexler, A., Oslin, D. W., Scangos, K. W., Pesaran, B., Evins, A. E., Richardson, R. M., Childress, et al
2024
- **Difficult to Treat Depression: Focus on Approach, Algorithms, and Access.** *The Journal of clinical psychiatry*
Karp, J. F., Brinton, R. D., Fournier, J. C., Harding, L., Jha, M. K., Lenze, E. J., Mathew, S. J., Meltzer-Brody, S., Mohr, D. C., Riva-Posse, P., Wiechers, I., Williams, N. R.
2024; 85 (4)
- **Early differences in lassitude predicts outcomes in Stanford Neuromodulation Therapy for difficult to treat depression.** *Npj mental health research*
Benrimoh, D., Azeez, A., Batail, J. M., Xiao, X., Buchanan, D., Bandeira, I. D., Geoly, A., Keynan, Y., Kratter, I. H., Williams, N. R.
2024; 3 (1): 49
- **Strategies to Mitigate Scalp Discomfort during Repetitive Transcranial Magnetic Stimulation.** *Brain stimulation*
Lissemore, J. I., Buchanan, D. M., Batail, J. M., Kaloiani, I., Veerapal, C., Sahlem, G. L., Williams, N. R.
2024
- **Frontostriatal salience network expansion in individuals in depression.** *Nature*
Lynch, C. J., Elbau, I. G., Ng, T., Ayaz, A., Zhu, S., Wolk, D., Manfredi, N., Johnson, M., Chang, M., Chou, J., Summerville, I., Ho, C., Lueckel, et al
2024
- **Fast depressive symptoms improvement in bipolar I disorder after Stanford Accelerated Intelligent Neuromodulation Therapy (SAINT): A two-site feasibility and safety open-label trial.** *Journal of affective disorders*
Li, K., Bichlmeier, A., DuPont, C., Siegel-Ramsay, J. E., Comfort, A., Logue, E., Stimpson, K. H., Bentzley, B., Williams, N., Reti, I., Almeida, J., Zandi, P.
2024
- **Increased anti-correlation between the left dorsolateral prefrontal cortex and the default mode network following Stanford Neuromodulation Therapy (SNT): analysis of a double-blinded, randomized, sham-controlled trial.** *Npj mental health research*
Gajawelli, N., Geoly, A. D., Batail, J. M., Xiao, X., Maron-Katz, A., Cole, E., Azeez, A., Kratter, I. H., Sagar, M., Williams, N. R.
2024; 3 (1): 35
- **Should rTMS be considered a first-line treatment for major depressive episodes in adults?** *Clinical neurophysiology : official journal of the International Federation of Clinical Neurophysiology*
O'Sullivan, S. J., Buchanan, D. M., Batail, J. V., Williams, N. R.
2024; 165: 76-87
- **Mechanisms of Action of TMS in the Treatment of Depression.** *Current topics in behavioral neurosciences*
Downar, J., Siddiqi, S. H., Mitra, A., Williams, N., Liston, C.
2024
- **Theta burst stimulation for depression: a systematic review and network and pairwise meta-analysis.** *Molecular psychiatry*
Kishi, T., Ikuta, T., Sakuma, K., Hatano, M., Matsuda, Y., Wilkening, J., Goya-Maldonado, R., Tik, M., Williams, N. R., Kito, S., Iwata, N.
2024
- **Transcranial magnetic stimulation as a countermeasure for behavioral and neuropsychological risks of long-duration and deep-space missions.** *NPJ microgravity*
Faerman, A., Buchanan, D. M., Williams, N. R.
2024; 10 (1): 58
- **Chronometric TMS-fMRI of personalized left dorsolateral prefrontal target reveals state-dependency of subgenual anterior cingulate cortex effects.** *Molecular psychiatry*
Grosshagauer, S., Woletz, M., Vasileiadi, M., Linhardt, D., Nohava, L., Schuler, A. L., Windischberger, C., Williams, N., Tik, M.
2024

- **Accelerated Theta Burst Stimulation: Safety, Efficacy, and Future Advancements.** *Biological psychiatry*
Cole, E., O'Sullivan, S. J., Tik, M., Williams, N. R.
2024; 95 (6): 523-535
- **Pilot study of stanford neuromodulation therapy (SNT) for bipolar depression.** *Brain stimulation*
Raj, K. S., Geoly, A. D., Veerapal, C., Gholmieh, M., Toosi, P., Espil, F. M., Batail, J., Kratter, I. H., Williams, N. R.
2024
- **Sustained Efficacy of Stanford Neuromodulation Therapy (SNT) in Open-Label Repeated Treatment.** *The American journal of psychiatry*
Geoly, A. D., Kratter, I. H., Toosi, P., Cole, E. J., Sahlem, G. L., Williams, N. R.
2024; 181 (1): 71-73
- **Stanford Hypnosis Integrated with Functional Connectivity-targeted Transcranial Stimulation (SHIFT): a preregistered randomized controlled trial** *NATURE MENTAL HEALTH*
Faerman, A., Bishop, J. H., Stimpson, K. H., Phillips, A., Gulser, M., Amin, H., Nejad, R., Desouza, D. D., Geoly, A. D., Kallioniemi, E., Jo, B., Williams, N. R., Spiegel, et al
2024; 2 (1)
- **A preliminary randomized controlled trial of repetitive transcranial magnetic stimulation applied to the left dorsolateral prefrontal cortex in treatment seeking participants with cannabis use disorder.** *Drug and alcohol dependence*
Sahlem, G. L., Kim, B., Baker, N. L., Wong, B. L., Caruso, M. A., Campbell, L. A., Kaloani, I., Sherman, B. J., Ford, T. J., Musleh, A. H., Kim, J. P., Williams, N. R., Manett, et al
2023; 254: 111035
- **An Avenue for Optimization of Theta Burst Stimulation Protocols? Comments on the FOUR-D Randomized Noninferiority Clinical Trial.** *The American journal of psychiatry*
Batail, J. V., Feyder, M. T., Bentzley, B. S., Williams, N. R.
2023: appiajp20230236
- **Responsive deep brain stimulation guided by ventral striatal electrophysiology of obsession durably ameliorates compulsion.** *Neuron*
Nho, Y. H., Rolle, C. E., Topalovic, U., Shivacharan, R. S., Cunningham, T. N., Hiller, S., Batista, D., Feng, A., Espil, F. M., Kratter, I. H., Bhati, M. T., Kellogg, M., Raslan, et al
2023
- **Concurrent TMS/fMRI reveals individual DLPFC dose-response pattern.** *NeuroImage*
Tik, M., Vasileiadi, M., Woletz, M., Linhardt, D., Schuler, A. L., Williams, N., Windischberger, C.
2023: 120394
- **Treatment-resistant depression: definition, prevalence, detection, management, and investigational interventions.** *World psychiatry : official journal of the World Psychiatric Association (WPA)*
McIntyre, R. S., Alsuwaidan, M., Baune, B. T., Berk, M., Demyttenaere, K., Goldberg, J. F., Gorwood, P., Ho, R., Kasper, S., Kennedy, S. H., Ly-Uson, J., Mansur, R. B., McAllister-Williams, et al
2023; 22 (3): 394-412
- **Transcranial Magnetic Stimulation-Induced Heart-Brain Coupling: Implications for Site Selection and Frontal Thresholding-Preliminary Findings.** *Biological psychiatry global open science*
Dijkstra, E., van Dijk, H., Vila-Rodriguez, F., Zwienenberg, L., Rouwhorst, R., Coetzee, J. P., Blumberger, D. M., Downar, J., Williams, N., Sack, A. T., Arns, M.
2023; 3 (4): 939-947
- **A Preliminary Investigation Of Repetitive Transcranial Magnetic Stimulation Applied To The Left Dorsolateral Prefrontal Cortex In Treatment Seeking Participants With Cannabis Use Disorder.** *medRxiv : the preprint server for health sciences*
Sahlem, G. L., Kim, B., Baker, N. L., Wong, B. L., Caruso, M. A., Campbell, L. A., Kaloani, I., Sherman, B. J., Ford, T. J., Musleh, A. H., Kim, J. P., Williams, N. R., Manett, et al
2023
- **Network effects of Stanford Neuromodulation Therapy (SNT) in treatment-resistant major depressive disorder: a randomized, controlled trial.** *Translational psychiatry*
Batail, J., Xiao, X., Azeez, A., Tischler, C., Kratter, I. H., Bishop, J. H., Saggat, M., Williams, N. R.
2023; 13 (1): 240

- **No place in France for repetitive transcranial magnetic stimulation in the therapeutic armamentarium of treatment-resistant depression?** *Brain stimulation*
Batail, J. M., Gaillard, R., Haffen, E., Poulet, E., Sauvaget, A., Szekely, D., Brunelin, J., Bulteau, S., Bubrovsky, M., Smadja, J., Bourla, A., Bouaziz, N., Januel, et al
2023
- **Accelerated Repetitive Transcranial Magnetic Stimulation to Treat Major Depression: The Past, Present, and Future.** *Harvard review of psychiatry*
Chen, L., Klooster, D. C., Tik, M., Thomas, E. H., Downar, J., Fitzgerald, P. B., Williams, N. R., Baeken, C.
2023; 31 (3): 142-161
- **Repetitive Transcranial Magnetic Stimulation for Treatment-Resistant Depression: Mismatch of Evidence and Insurance Coverage Policies in the United States.** *The Journal of clinical psychiatry*
Weissman, C. R., Bermudes, R. A., Voigt, J., Liston, C., Williams, N., Blumberger, D. M., Fitzgerald, P. B., Daskalakis, Z. J.
2023; 84 (3)
- **Real-Time Semi-Automated and Automated Voxel Placement using fMRI Targets for Repeated Acquisition Magnetic Resonance Spectroscopy.** *Journal of neuroscience methods*
Bishop, J. H., Geoly, A., Khan, N., Tischler, C., Krueger, R., Keshava, P., Amin, H., Baltusis, L., Wu, H., Spiegel, D., Williams, N., Sacchet, M. D.
2023: 109853
- **Time for Brain Medicine.** *The Journal of neuropsychiatry and clinical neurosciences*
Brown, J. C., Dainton-Howard, H., Woodward, J., Palmer, C., Karamchandani, M., Williams, N. R., George, M. S.
2023: appineuropsych21120312
- **Taking modern psychiatry into the metaverse: Integrating augmented, virtual, and mixed reality technologies into psychiatric care.** *Frontiers in digital health*
Ford, T. J., Buchanan, D. M., Azeez, A., Benrimoh, D. A., Kaloiani, I., Bandeira, I. D., Hunegnaw, S., Lan, L., Gholmieh, M., Buch, V., Williams, N. R.
2023; 5: 1146806
- **Appetitive Mapping of the Human Nucleus Accumbens.** *Biological psychiatry*
Parker, J. J., Rolle, C. E., Shivacharan, R. S., Barbosa, D. A., Feng, A., Huang, Y., Kakusa, B. W., Prieto, T., Jaffe, R. A., Williams, N. R., Halpern, C. H.
2022
- **Aberrant impulse control circuitry in obesity.** *Molecular psychiatry*
Barbosa, D. A., Kuijper, F. M., Duda, J., Wang, A. R., Cartmell, S. C., Saluja, S., Cunningham, T., Shivacharan, R. S., Bhati, M. T., Safer, D. L., Lock, J. D., Malenka, R. C., de Oliveira-Souza, et al
2022
- **Hypnotic predictors of agency: Responsiveness to specific suggestions in hypnosis is associated with involuntariness in fibromyalgia.** *Consciousness and cognition*
Faerman, A., Stimpson, K. H., Bishop, J. H., Neri, E., Phillips, A., Gulser, M., Amin, H., Nejad, R., Fotros, A., Williams, N. R., Spiegel, D.
2021; 96: 103221
- **Unraveling the opioid actions of S-ketamine and R-ketamine: comment on Bonaventura et al.** *Molecular psychiatry*
Heifets, B. D., Bentzley, B. S., Williams, N., Schatzberg, A. F.
2021
- **Accelerated Neuromodulation Therapy for Obsessive-Compulsive Disorder.** *Brain stimulation*
Williams, N. R., Sudheimer, K. D., Cole, E. J., Varias, A. D., Goldstein-Piekarski, A. N., Stetz, P. n., Lombardi, A. n., Filippou-Frye, M. n., van Roessel, P. n., Anderson, K. n., McCarthy, E. A., Wright, B. n., Sandhu, et al
2021
- **The Future of Training and Practice in Neuromodulation: An Interventional Psychiatry Perspective.** *Frontiers in psychiatry*
Trapp, N. T., Williams, N. R.
2021; 12: 734487
- **Lather, Rinse, Repeat? Breaking Repetitive Behaviors With Repetitive Stimulation.** *The American journal of psychiatry*
Lissemore, J. I., Williams, N. R.
2021; 178 (5): 378–80

- **Synchronized Cervical VNS With Accelerated Theta Burst TMS For Treatment Resistant Depression.** *Brain stimulation*
George, M. S., Caulfield, K. A., O'Leary, K., Badran, B. W., Short, E. B., Huffman, S. M., Li, X., Kerns, S. E., Williams, N. R.
2020
- **Transcranial Magnetic Stimulation Parameter Space: Wide Open for Exploration.** *Biological psychiatry*
Bentzley, B. S., Williams, N. R.
2020; 87 (5): 384–85
- **Evidence for the role of the dorsal ventral lateral posterior thalamic nucleus connectivity in deep brain stimulation for Gilles de la Tourette syndrome.** *Journal of psychiatric research*
Kakusa, B. n., Saluja, S. n., Barbosa, D. A., Cartmell, S. n., Espil, F. M., Williams, N. R., McNab, J. A., Halpern, C. H.
2020; 132: 60–64
- **Brain-Responsive Neurostimulation for Loss of Control Eating: Early Feasibility Study.** *Neurosurgery*
Wu, H. n., Adler, S. n., Azagury, D. E., Bohon, C. n., Safer, D. L., Barbosa, D. A., Bhati, M. T., Williams, N. R., Dunn, L. B., Tass, P. A., Knutson, B. D., Yutsis, M. n., Fraser, et al
2020
- **Deep Brain Stimulation Results in Greater Symptomatic Improvement in Tourette Syndrome than Conservative Measures: A Meta-Analysis.** *Stereotactic and functional neurosurgery*
Mahajan, U. V., Purger, D. A., Mantovani, A. n., Williams, N. R., Epsil, F. M., Han, S. S., Stein, S. C., Halpern, C. H.
2020: 1–8
- **Multimodal characterization of the human nucleus accumbens** *NEUROIMAGE*
Cartmell, S. D., Tian, Q., Thio, B. J., Leuze, C., Ye, L., Williams, N. R., Yang, G., Ben-Dor, G., Deisseroth, K., Grill, W. M., McNab, J. A., Halpern, C. H.
2019; 198: 137–49
- **Rigorous Trial Design Is Essential to Understand the Role of Opioid Receptors in Ketamine's Antidepressant Effect** *JAMA PSYCHIATRY*
Heifets, B. D., Williams, N. R., Bentzley, B. S., Schatzberg, A. F.
2019; 76 (6): 657–58
- **Attenuation of Anti-Suicidal Effects of Ketamine by Opioid Receptor Antagonism**
Williams, N., Heifets, B., Bentzley, B., Blasey, C., Sudheimer, K., Lyons, D., Schatzberg, A.
ELSEVIER SCIENCE INC.2019: S113
- **Stanford Accelerated Intelligent Neuromodulation Therapy for Suicidal Ideation (SAINT-SI)**
Williams, N.
ELSEVIER SCIENCE INC.2019: S28
- **The Effects of Cortisol Administration on Emotion, Stress Reactivity, and Brain Activity in Depression**
Sudheimer, K., Duvio, D., James, D., Heinemeyer, E., Pirog, S., Williams, N., Schatzberg, A.
ELSEVIER SCIENCE INC.2019: S267
- **Rigorous Translational Models Are Key to Studying Ketamine's Antidepressant Mechanism: Response to Wang and Kaplin.** *The American journal of psychiatry*
Heifets, B. D., Williams, N. R., Blasey, C., Sudheimer, K., Rodriguez, C. I., Schatzberg, A. F.
2019; 176 (5): 412
- **Robust clinical benefit of multi-target deep brain stimulation for treatment of Gilles de la Tourette syndrome and its comorbidities** *BRAIN STIMULATION*
Kakusa, B., Saluja, S., Tate, W. J., Espil, F. M., Halpern, C. H., Williams, N. R.
2019; 12 (3): 816–18
- **Rigorous Translational Models Are Key to Studying Ketamine's Antidepressant Mechanism: Response to Wang and Kaplin** *AMERICAN JOURNAL OF PSYCHIATRY*
Heifets, B. D., Williams, N. R., Blasey, C., Sudheimer, K., Rodriguez, C. I., Schatzberg, A. F.
2019; 176 (5): 412
- **Rigorous Trial Design Is Essential to Understand the Role of Opioid Receptors in Ketamine's Antidepressant Effect.** *JAMA psychiatry*
Heifets, B. D., Williams, N. R., Bentzley, B. S., Schatzberg, A. F.

2019

- **Case Studies in Neuroscience: The electrophysiology of a human obsession in nucleus accumbens.** *Journal of neurophysiology*
 Miller, K. J., Prieto, T., Williams, N. R., Halpern, C. H.
 2019
- **Comparative effectiveness of neuroablation and deep brain stimulation for treatment-resistant obsessive-compulsive disorder: a meta-analytic study** *JOURNAL OF NEUROLOGY NEUROSURGERY AND PSYCHIATRY*
 Kumar, K. K., Appelboom, G., Lamsam, L., Caplan, A. L., Williams, N. R., Bhati, M. T., Stein, S. C., Halpern, C. H.
 2019; 90 (4): 469–73
- **Robust clinical benefit of multi-target deep brain stimulation for treatment of Gilles de la Tourette syndrome and its comorbidities.** *Brain stimulation*
 Kakusa, B., Saluja, S., Tate, W. J., Espil, F. M., Halpern, C. H., Williams, N. R.
 2019
- **Interpreting Ketamine's Opioid Receptor Dependent Effect: Response to Sanacora.** *The American journal of psychiatry*
 Heifets, B. D., Williams, N. R., Blasey, C., Sudheimer, K., Rodriguez, C. I., Schatzberg, A. F.
 2019; 176 (3): 249–50
- **Target Population, Dose, and Timing Considerations for Understanding Naltrexone's Subjective Effect: Response to Amiaz** *AMERICAN JOURNAL OF PSYCHIATRY*
 Heifets, B. D., Williams, N. R., Blasey, C., Sudheimer, K., Rodriguez, C. I., Schatzberg, A. F.
 2019; 176 (3): 251–52
- **Interpreting Ketamine's Opioid Receptor Dependent Effect: Response to Sanacora** *AMERICAN JOURNAL OF PSYCHIATRY*
 Heifets, B. D., Williams, N. R., Blasey, C., Sudheimer, K., Rodriguez, C. I., Schatzberg, A. F.
 2019; 176 (3): 249–50
- **Target Population, Dose, and Timing Considerations for Understanding Naltrexone's Subjective Effect: Response to Amiaz.** *The American journal of psychiatry*
 Heifets, B. D., Williams, N. R., Blasey, C., Sudheimer, K., Rodriguez, C. I., Schatzberg, A. F.
 2019; 176 (3): 251–52
- **Comparative effectiveness of neuroablation and deep brain stimulation for treatment-resistant obsessive-compulsive disorder: a meta-analytic study.** *Journal of neurology, neurosurgery, and psychiatry*
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