MEDICAL SCHOOL
UNIVERSITY OF MINNESOTA
Driven to Discover®

CURRICULUM VITAE FOR PROMOTION AND TENURE

Alik S. Widge, M.D., Ph.D.

PROFESSIONAL ADDRESS
Address: MTRF 3-208, 2001 6th Street SE, Minneapolis, MN 55455
Telephone Number: 612-625-7594
Email Address: awidge@umn.edu

IDENTIFYING INFORMATION

Education

Degree	Institution	Date Degree Granted
BA (summa cum laude, Phi Beta Kappa, High honors in major)	Dartmouth College Science	06/1999
MD (Alpha Omega Alpha)	University of Pittsburgh Medical Scientist Training Program	12/2008
PhD	Carnegie Mellon University Robotics (Yoky Matsuoka & Kaigham Gabriel)	01/2007
Residency Training	University of Washington Psychiatry	05/2013
Postdoctoral Researcher	University of Washington	05/2013
Research Fellow	Massachusetts General Hospital	06/2014
Research Fellow	Massachusetts Institute of Technology	06/2015

Certifications, Licenses

Minnesota Full Medical License	2018 - present
Board Certification in General Psychiatry	2013 - present
Massachusetts Full Medical License	2013 - 2018
DATA Waiver for Office-Based Opiate Substitution Therapy	2013 - present
Washington Full Medical License	2012 - 2013
Washington Limited License Trainee	2009 - 2011

Academic Appointments

University of Minnesota

Associate Professor of Psychiatry & Behavioral Sciences	07/2023 – present
Assistant Professor of Psychiatry & Behavioral Sciences	08/2018 – 06/2023

Graduate faculty in Neuroscience, Biomedical Engineering; Electrical & Computer Engineering

Harvard Medical School 04/2014 – 08/2018

Assistant Professor 03/2016 – 08/2018
Instructor 04/2014 – 03/2016

Consulting Positions

Abbott 2023
Dandelion Science 2020-2021
Circuit Therapeutics 2018
Medtronic (clinical trainer) 2017-2018
LivaNova 2018
Assay Dynamics, Seattle, WA 2010 – 2011

Clinical/Hospital Appointments

University of Minnesota 08/2018 – present
Psychiatrist

Massachusetts General Hospital 04/2014 – 08/2018
Psychiatrist 01/2018 – 08/2018
Assistant Psychiatrist 04/2014 – 01/2018

Current Membership and Offices in Professional Organizations

American College of Neuropsychopharmacology (Full Member as of 2023) 2017-present
Society for Biological Psychiatry 2012-present
American Psychiatric Association 2009-present
Board of Trustees 2011-2013
Deputy Representative, Assembly (Area 7) 2010-2011
Society for Neuroscience 2002-present
American Medical Association 1999-present
Council on Long-Range Planning & Development 2013-2016
Medical Student Section Committee on Long-Range Planning 2006-2009
Chair, Medical Student Section (includes Chair-Elect, Immediate Past-Chair) 2004-2006
Chair, Medical Student Section Task Force on Medical Education Debt 2003-2004
American Medical Political Action Committee Board of Directors 2002-2004
American Association for the Advancement of Science 1999-present
Sigma Xi 1999-2013

Other professional employment, including military service

SHARE India/Bhoruka Charitable Trust, Rajasthan, India 02/2009 – 04/2009
Public Health Volunteer

World Market Watch, Woodstock, VT 09/1996-09/1997
Lead Programmer

HONORS AND AWARDS FOR RESEARCH WORK, TEACHING, PUBLIC ENGAGEMENT, AND SERVICE

University of Minnesota

Outstanding Junior Mentor of the Year, UMN Clinical-Translational Sciences Institute 2022
Best Teacher, UMN Psychiatry Residency 2022
McKnight Land-Grant Professorship 2020

External Sources

A.E. Bennett Young Investigator Award	Society of Biological Psychiatry	2021
Krishna Kumar New Investigator Award	North American Neuromodulation Society	2020
Biobehavioral Research Awards for Innovative New Scientists (BRAINS)	National Institute of Mental Health	2019
Young Investigator Award	Sage Bionetworks	2018
Associate Membership	American College of Neuropsychopharmacology	2017
Rising Star Translational Research Award	OneMind Institute/Janssen	2017
Travel Award	American College of Neuropsychopharmacology	2015
Clinical Research Day Team Award	Massachusetts General Hospital	2015
Travel Award	Society for Biological Psychiatry	2015
Career Development Leadership Program	Anxiety & Depression Association of America	2014
Career Development Institute for Psychiatry	NIMH/Stanford University/University of Pittsburgh	2014
Resident Recognition Award	American Psychiatric Association	2013
BRAIN Scholar	American Association of Directors of Psychiatric Residency Training	2013
Research Colloquium for Junior Investigators	American Psychiatric Association	2012
Brain Camp Scholar	National Institute of Mental Health	2012
Outstanding Resident Award	National Institute of Mental Health	2011
Eagle Scout	Boy Scouts of America	1995

RESEARCH AND SCHOLARSHIP

Grants and Contracts

External Sources

Current Support

Principal Investigator
N66001-23-2-4016
DARPA
Fast, Reliable, Electrical Unconscious Detection (FREUD)
2023-2027
Direct costs $7,905,554
10% effort

Investigator (PI: Joan Camprodon, Massachusetts General Hospital)
R21 AG078692
NIH/NIA
Individualized Closed-Loop Neuromodulation Therapy for Alzheimer's Disease
2022-2024
Direct costs $134,740

5% effort

MPI (contact PI: Tay Netoff)
Dr. Ralph & Marian Falk Medical Research Trust
Rational, Targeted Electrical Brain Circuit Intervention for Mental Illness
2022-2024
Direct costs $300,000
2.5% effort

Investigator (PI: Zaid Harchaoui, University of Washington)
R01 MH125429
NIH/NIMH
Explainable Machine Learning to Guide Prefrontal Brain Stimulation
2022-2027
Direct costs $466,238 (subcontract)
5% effort

Investigator (PIs: Taner Akkin, Sarah Heilbronner)
R01 MH126923
NIH/NIMH
Label-free optical imaging for human mesoscale connectivity with a focus on deep brain stimulation targets
2022-2027
Direct Costs $381,496
5% effort

Principal Investigator
R01 NS120851
NIH/NINDS
Circuit and Cognitive Mechanisms of Striatal Deep Brain Stimulation
2021-2026
Direct Costs $426,925
10% effort

Investigator (Overall PI: Jerrold Vitek; Project PI: Matt Johnson)
P50 NS123109
NIH/NINDS
Circuit-based deep brain stimulation for Parkinson's disease
2021-2026
Project Direct Costs $250,868
5% effort

Contact Principal Investigator (MPI: Mark Thomas)
R21 DA052568
NIH/NIDA
Reversal of Opioid-Induced Pathological Neuroplasticity through Timed Electrical Stimulation
2021-2024 [in NCE]
Direct Costs $150,000
5% effort

Contact Principal Investigator (MPI: Benjamin Hayden)
R01 MH124687
NIH/NIMH
Modeling circuit-specific psychiatric deep brain stimulation and its cognitive effects in macaques
2020-2025
Direct Costs $483,884
8% effort

Contact Principal Investigator (MPI: Mahsa Shoaran)
R01 MH123634
NIH/NIMH
Implantable Neurostimulators for Control of Oscillatory Brain Networks
2020-2025
Direct Costs $621,578
10% effort

Subcontract Principal Investigator (PI: Joel Voss, Northwestern University)
R01 NS113804
NIH/NINDS
Cellular Mechanisms of Hippocampal Network Neuroplasticity Generated by Brain Stimulation
2019-2024
Direct Costs $290,228
10% effort

Multiple Principal Investigator (Contact PI: Darin Dougherty, Massachusetts General Hospital)
2016-2021 (likely NCEs into 2024+)
UH3 NS100548
NIH/NINDS
Combined Cortical and Subcortical Recording and Stimulation as a Circuit-Oriented Treatment for Obsessive-Compulsive Disorder
Direct Costs $364,456
9% effort

Past Support
Principal Investigator
R01 MH119384
NIH/NIMH
Circuit-Specific Electrical Stimulation
2019-2024
Direct Costs $343,982
30% effort

Contact Principal Investigator (MPI: Theoden Netoff)
U54 EB015408
NIH/NIBIB
Neurostimulation to enhance human cognitive control and treat severe mental illness
2022

Direct Costs $76,923
1% effort

Contact Principal Investigator (MPIs: A David Redish, and Angus MacDonald III)
R21 MH120785
NIH/NIMH
Parametrically Detailed Computational Analyses of Human Foraging Behavior
2019-2022 (NCE)
Direct Costs $175,000
5% effort

Investigator (PI: Mark Thomas)
P30 DA048742-02S1
NIH/NIDA
Neuroethics of Deep Brain Stimulation For Addiction [Supplement to Center for Neural Circuits in Addiction]
2021-2022
Direct Costs $138,508
2% effort

Principal Investigator
Tourette Association of America
Exploring Cortico-Striatal Loop Synchrony as a Mechanism of Compulsive Symptoms
2020-2022
Direct Costs $72,727
1% effort

Subcontract Principal Investigator (PI: Mark Kramer, Boston University)
R01 EB026938
NIH/NIBIB
Measuring, Modeling, and Modulating Cross-Frequency Coupling
2018-2022 (NCE)
Direct Costs $107,143
5% effort

Subcontract Principal Investigator (PI: Polina Anikeeva, MIT)
R01 MH111872
NIH/NIMH
Multi-Site Non-Invasive Magnetothermal Excitation and Inhibition of Deep Brain Structures
2016-2020
Direct Costs $91,972
12.5% effort

Engineering Principal Investigator (Overall PIs: Darin Dougherty & Emad Eskandar)
2014-2019
W911NF-14-2-0045
DARPA
Transdiagnostic Restoration of Affective Networks by Systematic, Function-Oriented Real-time Modeling and Deep Brain Stimulation (TRANSFORM DBS)
Direct Costs $108,000

Principal Investigator
R21 MH113103
NIH/NIMH
Engineering Plasticity and Connectivity in a Fear Regulation Circuit
2017-2019
Direct Costs $150,000

Principal Investigator
R21 MH109722
NIH/NIMH
Synchronizing a Fear Regulation Circuit by Temporally Patterned Closed-Loop Neurostimulation
2016-2018
Direct Costs $125,000

Principal Investigator
R03 MH111320
NIH/NIMH
Computational Modeling of Deep Brain Stimulation of the Ventral Striatum
2016-2018
Direct Costs $135,000

Subcontract Principal Investigator
HR0011-15-C-0155
DARPA
Wireless Magnetic Neural Excitation for Control of Stress Response (MAGNEX)
2015-2018
Direct Costs $73,208

Principal Investigator (co-PI:Earl Miller)
No Grant Number
MIT-MGH Grand Challenge 3: Neuroscience
Manipulating Top-Down Emotion Regulation Through Oscillatory Synchrony
2015-2018
Direct Costs $22,727

Principal Investigator
No Grant Number
Bipolar Disorder Fund for Neuroscience Research at Harvard University, supported by Kent and Liz Dauten
Engineering Brain Circuit Connectivity to Improve Emotion Regulation
2015-2017
Direct Costs $86,957

Principal Investigator
No Grant Number
Brain and Behavior Research Foundation/NARSAD
Responsive, Subject-Controlled Limbic Neurostimulation
2015-2018
Direct Costs $35,000

Principal Investigator
No Grant Number
MIT Lincoln Laboratory
Voice Biomarkers in Major Depression
2016-2017
Direct Costs $75,000

Mentored Fellow (Dougherty and Miller, Mentors)
No Grant Number
Picower Clinical Neuroscience Fellowship
2013-2015
Direct Costs $40,000

Mentored Principal Investigator (Moritz, Mentor)
No Grant Number
NSF Center for Sensorimotor Neural Engineering Seed Grant
Closed-Loop Neurostimulation for Psychiatric Disorders
2012-2013
Direct Costs $12,000

Mentored Trainee (Matsuoka, Mentor)
F30 NS051866
NINDS
Polymer "Molecular Wires" for Neuroprosthetic Electrodes
2005-2008
Direct Costs $160,000

Mentored Trainee (Matsuoka, Mentor)
No Grant Number
National Defense Science and Engineering Graduate Fellowship
Conductive Polymer "Molecular Wires" for Neuro-Robotic Interfaces
2002-2005
Direct Costs $135,000

Publications

Peer-Reviewed Publications

1. Dastin-van Rijn EM, Nielsen J, Sachse EM, Mensinger ME, Simpson SG, Buccini MC, Iacobucci FA, Titus DJ, **Widge AS**. Pybehave: a hardware agnostic, Python-based framework for controlling behavioral neuroscience experiments. *Journal of Open Source Software*. Accepted.

2. Sonmez AI, Webler R, Krueger AM, Godoy-Henderson C, Sullivan C, Wilson S, Olsen S, Schmid S, Herman A, **Widge A**, Peterson C, Nahas Z, Albott CS. Effects of TMS on Anhedonia and Suicidal Ideation in TRD: Outcomes from the University of Minnesota Interventional Psychiatry Program. *Journal of Mood & Anxiety Disorders*. In press.

3. Wolfgang AS, Fonzo GA, Gray J, Stauffer CS, Krystal JH, **Widge AS**, Nemeroff CB. MDMA & MDMA-Assisted Therapy. *American Journal of Psychiatry*. Accepted.

4. Sippel LM, Hamblen JL, Kelmendi B, Alpert JE, Carpenter LL, Grzenda A, Kraguljac NV, McDonald WM, Rodriguez CI, **Widge AS**, Nemeroff CB, Schnurr PP, Holtzheimer III PE, APA Council of Research Task Force on Novel Biomarkers and Treatments. Novel pharmacological and other somatic treatment approaches for posttraumatic stress disorder: State of the evidence. *American Journal of Psychiatry*. Accepted.

5. Ge L, McInnes A, **Widge AS**, Parhi KK. Determining the Number of Clusters in Clinical Response of TMS Treatment using Hyperdimensional Computing. *Journal of Signal Processing Systems*. Accepted.

6. Ziaei N, Stim JJ, Goodman-Keiser MD, Sponheim SR, **Widge AS**, Nazari B, Yousefi A. Latent Variable Double Gaussian Process Model for Decoding Complex Neural Data. In: *Proceedings of the 2024 IEEE Engineering in Medicine & Biology Conference*. Orlando, Florida; 2024.

7. Breidenbach HJ, Woods V, Shin U, Dastin-Van Rijn E, Shoaran M, **Widge AS**. Method for Synthetic Generation of LFP Data for Testing of Feature Extraction Algorithms. In: *Proceedings of the 2024 IEEE Engineering in Medicine & Biology Conference*. Orlando, Florida; 2024.

8. Gu C, Chou T, **Widge AS**, Dougherty DD. EEG complexity in emotion conflict task in individuals with psychiatric disorders. *Behavioural Brain Research*. 2024 Jun 5;467:114997.

9. Kraguljac NV, Bruns DP, Appelbaum PS, Botello E, King VL, Remiszewski N, **Widge AS**, Alpert JE, Carpenter LL, Grzenda A, Krystal JH, McDonald WM, Nemeroff CB. Post-Roe v Wade psychiatry: legal, clinical, and ethical challenges in psychiatry under abortion bans. *The Lancet Psychiatry*. In press.

10. Webler RD, Morales Carrasco C, Cooper SE, Chen M, Hunt CO, Hennessy S, Cao L, Lam C, Chiu A, Differding C, Todd E, Hendrickson TJ, Oathes DJ, **Widge AS**, Hermosillo RJM, Nelson SM, Fair DA, Lissek SM, Nahas Z. Causally Probing the Role of the Hippocampus in Fear Discrimination: A Precision Functional Mapping–Guided, Transcranial Magnetic Stimulation Study in Participants With Posttraumatic Stress Symptoms. *Biological Psychiatry Global Open Science*. 2024;4(3):100309.

11. Dasgupta I, Klein E, Cabrera LY, Chiong W, Feinsinger A, Fins JJ, Haeusermann T, Hendriks S, L?zaro-Mu?oz G, Kubu C, Mayberg H, Ramos K, Roskies A, Sankary L, Walton A, **Widge AS**, Goering S. What Happens After a Neural Implant Study? Neuroethics Expert Workshop on Post-Trial Obligations. *Neuroethics*. 2024 Jul;17(2):22.

12. Thai M, Nair AU, Klimes-Dougan B, Albott CS, Silamongkol T, Corkrum M, Hill D, Roemer JW, Lewis CP, Croarkin PE, Lim KO, **Widge AS**, Nahas Z, Eberly LE, Cullen KR. Deep transcranial magnetic stimulation for adolescents with treatment-resistant depression: A preliminary dose-finding study exploring safety and clinical effectiveness. *Journal of Affective Disorders*. 2024;354:589–600.
13. Sullivan CRP, Henry A, Lehman J, Caola L, Nahas Z, **Widge AS,** Cabrera LY, Randolph A, Wilson S. Rewriting the Script: the Need for Effective Education to Address Racial Disparities in Transcranial Magnetic Stimulation Uptake in BIPOC Communities. *Neuroethics*. 2024 Jan 27;17(1):8.

14. Song Z, Alpers A, Warner K, Iacobucci F, Hoskins E, Disterhoft JF, Voss JL, **Widge AS**. Chronic, reusable, multiday neuropixels recordings during free-moving operant behavior. eNeuro. 2024];11(1): ENEURO.0245-23.2023.

15. Grzenda A, **Widge AS**. Electronic health records and stratified psychiatry: bridge to precision treatment? *Neuropsychopharmacology*. 2024;49(1):285–90.

16. **Widge AS**. Closing the loop in psychiatric deep brain stimulation: physiology, psychometrics, and plasticity. *Neuropsychopharmacology*. 2024;49(1):138–49.

17. Hitti FL, **Widge AS**, Riva-Posse P, Malone DA, Okun MS, Shanechi MM, Foote KD, Lisanby SH, Ankudowich E, Chivukula S, Chang EF, Gunduz A, Hamani C, Feinsinger A, Kubu CS, Chiong W, Chandler JA, Carbunaru R, Cheeran B, Raike RS, Davis RA, Halpern CH, Vanegas-Arroyave N, Markovic D, Bick SK, McIntyre CC, Richardson RM, Dougherty DD, Kopell BH, Sweet JA, Goodman WK, Sheth SA, Pouratian N. Future directions in psychiatric neurosurgery: Proceedings of the 2022 American Society for Stereotactic and Functional Neurosurgery meeting on neuromodulation for psychiatric disorders. *Brain Stimulation*. 2023 May 1;16(3):867–78.

18. Boulicault M, Klein E, Goering S, Dougherty DD, **Widge AS**. The role of family members in psychiatric Deep Brain Stimulation trials: More than psychosocial support. *Neuroethics*. 2023 May 26;16(2):14.

19. **Widge AS**, Jordan A, Kraguljac NV, Sullivan CRP, Wilson S, Benton TD, Alpert JE, Carpenter LL, Krystal JH, Nemeroff CB, Dzirasa K. Structural Racism in Psychiatric Research Careers: Eradicating Barriers to a More Diverse Workforce. *American Journal of Psychiatry*. 2023 Sep;180(9):645–59.

20. Versalovic E, Klein E, Goering S, Ngo Q, Gliske K, Boulicault M, Specker Sullivan L, Thomas M, **Widge AS**. DBS for substance use disorders? An exploratory qualitative study of perspectives of people currently in treatment. *Journal of Addiction Medicine*. 2023.

21. Nagrale SS, Yousefi A, Netoff TI, **Widge AS**. In silico development and validation of Bayesian methods for optimizing deep brain stimulation to enhance cognitive control. *Journal of Neural Engineering*. 2023 May;20(3):036015.

22. **Widge AS**. Closed Loop Deep Brain Stimulation for Psychiatric Disorders. *Harvard Review of Psychiatry*. 2023 Jun;31(3):162.

23. Webler RD, Oathes DJ, van Rooij S, Gewirtz JC, Nahas ZH, Lissek SM, **Widge AS**. Causally mapping human threat extinction circuits with depolarization methods. *Neuroscience and Biobehavioral Reviews*. 2023;144:105005.

24. Shin U, Ding C, Woods V, **Widge AS**, Shoaran M. A 16-channel low-power neural connectivity extraction and phase-locked deep brain stimulation SoC. *IEEE Solid State Circuits Letters*. 2023;6:21–4.

25. Paralleda M, Andreu-Bernabeu A, Burdeus M, San Jose Caceres A, Urbiola E, Carpenter LL, Kraguljac NV, McDonald WM, Nemeroff CB, Rodriguez CI, **Widge AS**, State MW, Sanders SJ. In search of biomarkers to guide interventions in autism spectrum disorder: a review. *American Journal of Psychiatry*. 2023;180(1):23–40.

26. Wickramasuriya DS, Crofford LJ, **Widge AS**, Faghih RT. Hybrid decoders for marked point process observations and external influences. *IEEE Transactions on Biomedical Engineering*. 2023;70(1):343–53.

27. Gu L, Pathoulas JT, **Widge AS**, Idnani A, Lipner SR. Exacerbation of onychophagia and onychotillomania during the COVID-19 pandemic: a survey-based study. *International Journal of Dermatology*. 2022;61(11):e412–4.

28. Younk R, **Widge AS**. Quantifying defensive behavior and threat response through integrated headstage accelerometry. *Journal of Neuroscience Methods*. 2022;382:109725.

29. Migo M, Chou T, Peters A, **Widge AS**, Ellard KK, Deckersbach T, Dougherty DD. Neural correlates of learning accommodation and consolidation in generalized anxiety disorder. *Acta Neuropsychiatrica*. 2022;1–29.

30. Pinotsis D, Fitzgerald S, See C, Sementsova A, **Widge AS**. Towards Biophysical Markers of Depression Vulnerability. *Frontiers in Psychiatry*. 2022;13:938694.

31. **Widge AS**. Deep brain stimulation for treatment-resistant mental illness. *Psychiatric Annals.* 2022;52(7):5.

32. Maeng LY, Rosenfeld D, Simandl G, Koehler F, Senko AW, Moon J, Varnavides G, Murillo MF, Reimer AE, Wald A, Anikeeva P*, **Widge AS***. Probing neuro-endocrine interactions through wireless magnetothermal stimulation of peripheral organs. *Frontiers in Neuroscience*. 2022;16:901108.

33. Shin U, Somappa L, Ding C, Woods V, **Widge AS**, Shoaran M. A 16-Channel 60μW Neural Synchrony Processor for Multi-Mode Phase-Locked Neurostimulation. In *Proceedings of the 2022 IEEE Custom Integrated Circuits Conference.* Newport Beach, CA; 2022.

34. Wong JK, Deuschl G, Wolke R, Bergman H, Muthuraman M, Groppa S, Sheth SA, Bronte-Stewart HM, Wilkins KB, Petrucci MN, Lambert E, Kehnemouyi Y, Starr PA, Little S, Anso J, Gilron R, Poree L, Kalamangalam GP, Worrell GA, Miller KJ, Schiff ND, Butson CR, Henderson JM, Judy JW, Ramirez-Zamora A, Foote KD, Silburn PA, Li L, Oyama G, Kamo H, Sekimoto S, Hattori N, Giordano JJ, DiEuliis D, Shook JR, Dougherty DD, **Widge AS**, Mayberg HS, Cha J, Choi K, Heisig S, Obatusin M, Opri E, Kaufman SB, Shirvalkar P, Rozell CJ, Alagapan S, Raike RS, Bokil H, Green D, Okun MS. Proceedings of the Ninth Annual Deep Brain Stimulation Think Tank: Advances in Cutting Edge Technologies, Artificial Intelligence, Neuromodulation, Neuroethics, Pain, Interventional Psychiatry, Epilepsy, and Traumatic Brain Injury. *Frontiers in Human Neuroscience.* 2022 Mar 4;16:813387.

35. Hill KP, Gold MS, Nemeroff CB, McDonald WM, Grzenda A, **Widge AS**, Rodriguez CI, Kraguljac NV, Krystal JH, Carpenter LL. Risks and benefits of cannabis and cannabinoids in psychiatry. *American Journal of Psychiatry*. 2022;179(2):98–109.

36. Haynos A, **Widge AS**, Anderson L, Redish AD. Beyond description and deficits: how computational psychiatry can enhance an understanding of decision-making in anorexia nervosa. *Current Psychiatry Reports*. 2022;24:77–87.

37. Paulk AC, Zelmann R, Crocker B, **Widge AS**, Dougherty DD, Eskandar EN, Weisholtz DS, Richardson RM, Cosgrove GR, Williams ZM, Cash SS. Local and distant cortical responses to single pulse intracranial stimulation in the human brain are differentially modulated by specific stimulation parameters. *Brain Stimulation*. 2022;15(2):491–508.

38. **Widge AS**, Zhang F, Gosai AK, Papadimitriou G, Wilson-Braun P, Tsintou M, Palanivelu S, Noecker AM, McIntyre CC, O'Donnell L, McLaughlin NCR, Greenberg BD, Makris N, Dougherty DD*, Rathi Y*. Patient-specific connectomic models correlate with, but do not predict, outcomes in deep brain stimulation for obsessive-compulsive disorder. *Neuropsychopharmacology*. 2022;47(965-972).

39. Redish AD, Kepecs A, Anderson L, Calvin O, Grissom N, Haynos AF, Heilbronner SR, Herman AB, Jacob S, Ma S, Vilares I, Vinogradov S, Walters CJ, **Widge AS**, Zick JL, Zilverstand A. Computational validity: using computation to translate behaviors across species. *Philosophical Transactions of the Royal Society B*. 2022;377(1844):20200525.

40. Schatza M, Blackwood E, Nagrale S, **Widge AS**. Toolkit for Oscillatory Real-time Tracking and Estimation (TORTE). *Journal of Neuroscience Methods*. 2022;366(15):109409.

41. Dastin-van Rijn EM, König SD, Carlson D, Goel V, Grande A, Nixdorf DR, Benish S, **Widge AS**, Nahas Z, Park MC, Netoff TI, Herman AB, Darrow DP. Personalizing dual-target cortical stimulation with Bayesian parameter optimization successfully treats central post-stroke pain: a case report. *Brain Sciences*. 2022;12(1):25.

42. Wendt K, Denison T, Foster G, Krinke L, Thomson A, Wilson S, **Widge AS.** Physiologically informed neuromodulation. *Journal of the Neurological Sciences*. 2022;434:120121.

43. Avvaru S, Provenza NR, **Widge AS**, Parhi KK. Spectral features based decoding of task engagement: the role of theta and high gamma bands in cognitive control. *Proceedings of the 2021 IEEE Engineering in Medicine & Biology Conference*. 2021:6062-6065.

44. Avvaru S, Provenza NR, **Widge AS**, Parhi KK. Decoding human cognitive control using functional connectivity of local field potentials. *Proceedings of the 2021 IEEE Engineering in Medicine & Biology Conference*. 2021:451–4.

45. Wodeyar A, Schatza M, **Widge AS**, Eden UT, Kramer MA. A state space modeling approach to real-time phase estimation. *eLife*. 2021;e68803.

46. Avvaru S, Peled N, Provenza NR, Parhi KK*, **Widge AS***. Functional and effective connectivity analysis from local field potentials during cognitive conflict. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*. 2021;29:1651–60.

47. Ribeiro de Oliveira A, Reimer AE, Simandl GJ, Nagrale SS, **Widge AS**. Lost in translation: No effect of repeated optogenetic cortico-striatal stimulation on compulsivity in rats. *Translational Psychiatry*. 2021;11:315.

48. Basu I, Yousefi A, Crocker B, Zelmann R, Paulk AC, Peled N, Ellard KK, Weisholtz DS, Cosgrove GR, Deckersbach T, Eden U, Eskandar EN, Dougherty DD, Cash SS*, **Widge AS***. Closed loop enhancement and neural decoding of human cognitive control. *Nature Biomedical Engineering*. 2021 Nov 1;1–13.

49. Kumar A, Nemeroff CB, Cooper JJ, **Widge AS**, Rodriguez CI, McDonald WM. Amyloid and tau in Alzheimer's disease: biomarkers or molecular targets for therapy? Are we shooting the messenger? *American Journal of Psychiatry*. 2021;178(11):1014–25..

50. Grzenda A, Kraguljac N, McDonald WM, Nemeroff C, Torous J, Rodriguez CI*, **Widge AS***. Evaluating the machine learning literature: a primer and user's guide for psychiatrists. *American Journal of Psychiatry*. 2021;178(8):715–29.

51. Kraguljac NV, McDonald WM, **Widge AS**, Rodriguez CI, Tohen M, Nemeroff CB. Neuroimaging biomarkers in schizophrenia. *American Journal of Psychiatry*. 2021;178(6):509–21.

52. Davis RA, Giordano J, Hufford DB, Sheth SA, Warnke P, **Widge AS**, Richardson RM, Rosenow JM, Rossi PJ, Storch EA, Winston H, Zboyan J, Dougherty DD, Foote KD, Goodman WK, McLaughlin NCR, Ojemann S, Rasmussen S, Abosch A, Okun MS. Restriction of access to deep brain stimulation for refractory OCD: failure to apply the Federal parity act. *Frontiers in Psychiatry*. 2021;12:706181.

53. McLaughlin N, Dougherty DD, Eskandar EN, Ward HE, Foote KD, Malone Jr. DA, Machado A, Wong W, Sedrak M, Goodman WK, Kopell BH, Issa F, Shields DC, Abulseoud OA, Lee K, Frye MA, **Widge AS**, Deckersbach T, Okun MS, Bowers D, Bauer RM, Mason D, Kubu CS, Bernstein I, Lapidus K, Rosenthal DL, Jenkins RL, Read C, Malloy PF, Salloway SP, Strong DR, Jones RN, Rasmussen SA, Greenberg BD. Double blind randomized controlled trial of deep brain stimulation for obsessive-compulsive disorder: clinical trial design. *Contemporary Clinical Trials Communications*. 2021;22:100785.

54. Crocker B, Paulk AC, Williams Z, Dougherty DD, Eskandar EN, **Widge AS**, Cash SS. Local and distant responses to single pulse electrical stimulation reflect different forms of connectivity. *Neuroimage* 2021;237:118094.

55. Lo M-C, Younk R, **Widge AS**. Paired electrical pulse trains for controlling connectivity in emotion-related brain circuitry. *IEEE Transactions on Neural Systems & Rehabilitation Engineering*. 2020;20(12):2721-2730.

56. Pathoulas JT, Olson SJ, Idnani A, **Widge AS**. Cross-sectional survey examining skin picking and hair pulling disorders during the COVID-19 pandemic. *Journal of the American Academy of Dermatology*. 2021;84(3):771–3.

57. Dubreuil-Vall L, Gomez-Bernal F, Villegas AC, Cirillo P, Surman C, Ruffini G, **Widge AS**, Camprodon JA. Transcranial direct current stimulation to the left dorsolateral prefrontal cortex improves cognitive control in patients with attention-deficit/hyperactivity disorder: a randomized behavioral and neurophysiological study. *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging.* 2021;6(4):439–48.

58. Sullivan C, Olsen S, **Widge AS**. Deep brain stimulation for psychiatric disorders: from focal brain targets to cognitive networks. *NeuroImage.* 2021;225:117515.

59. Zelmann R, Paulk AC, Basu I, Sarma A, Yousefi A, Crocker BA, Eskandar E, Williams Z, Cosgrove GR, Weisholtz DS, Dougherty DD, Truccolo W, **Widge AS**, Cash SS. CLoSES: A platform for closed-loop intracranial stimulation in humans. *NeuroImage.* 2020;223:117314.

60. Olsen S, Basu I, Bilge MT, Kanabar A, Boggess MJ, Rockhill AP, Gosai AK, Hahn E, Peled N, Ennis M, Shiff I, Fairbank-Haynes K, Salvi JD, Cusin C, Deckersbach T, Williams ZM, Baker JT, Dougherty DD*, **Widge AS***. Case report of dual-site neurostimulation and chronic recording of cortico-striatal circuitry in a patient with treatment refractory obsessive compulsive disorder. *Frontiers in Human Neuroscience*. 2020;14:569973.

61. Sanchez C*, Grzenda A*, Varias A, **Widge AS**, Carpenter LL, McDonald WM, Tohen M, Nemeroff CB, Kalin NH, Martin G, Filippou-Frye M, Ramsey D, Linos E, Mangurian C*, Rodriguez CI*. The use of social media in recruiting participants for mental health research purposes: a systematic review and recommendations. *Comprehensive Psychiatry*. 2020;103:152197.

62. Testo AA, Garnaat SL, Corse AK, McLaughlin NC, Greenberg BD, Deckersbach T, Eskandar EN, Dougherty DD*, **Widge AS***. A case of non-affective psychosis followed by extended response to non-stimulation in deep brain stimulation for obsessive-compulsive disorder. *Brain Stimulation* 2020;13(5):1317-1319.

63. Dwyer JB, Aftab A, **Widge AS**, Rodriguez CI, Carpenter LL, Nemeroff CB, Kalin NH. Hormonal treatments for major depressive disorder: state of the art. *American Journal of Psychiatry*. 2020;177(8):686–705.

64. Rosenfeld D, Senko AW, Moon J, Yick I, Varnavides G, Gregureć D, Koehler F, Chiang P-H, Christiansen M, Maeng L, **Widge AS***, Anikeeva P*. Transgene-free remote magnetothermal regulation of adrenal hormones. *Science Advances*. 2020;6(15):eaaz3734.

65. Reiff CM, Richman EE, Nemeroff CB, Carpenter LL, **Widge AS,** Rodriguez CI, Kalin NH, McDonald WM, APA Workgroup on Biomarkers and Novel Treatments. Psychedelics and psychedelic-assisted therapy: the clinical implications. *American Journal of Psychiatry*. 2020;177(5):391-410.

66. Stan VA, Correa R, Deslauriers JR, Faynboym S, Shah T, **Widge AS**. Support, technology and mental health: correlates of trainee workplace satisfaction. *Perspectives in Medical Education*. 2020;9:31–40.

67. Wang J, **Widge AS**. Neuromodulation approaches to mood disorders. *Psychiatric Times*. 2020;37(2):22–4.

68. Ereifej ES*, Shell CE*, Schofield JS*, Charkhkar H*, Cuberovic I, Dorval AD, Graczyk EL, Kozai TDY, Otto KJ, Tyler DJ, Welle CG, **Widge AS**, Zariffa J, Moritz CT, Bourbeau DJ, Marasco PD. Neural engineering: the process, applications, and its role in the future of medicine. *Journal of Neural Engineering* 2019;16(6):063002.

69. Dubreuil-Vall L, Chau P, Ruffini G, **Widge AS***, Camprodon JA*. tDCS to the left DLPFC modulates cognitive and physiological correlates of executive function in a state-dependent manner. *Brain Stimulation* 2019; 12(6):1456-1463.

70. Nadalin J, Martinet L-E, Lo M-C, Blackwood E, **Widge AS**, Cash SS, Eden UT, Kramer MA. A statistical modeling framework to assess cross-frequency coupling while accounting for confounding effects. *eLife*. 2019;8:e44287.

71. Bick SK, Patel SR, Katnani HA, Peled N, **Widge AS**, Cash SS, Eskandar EN. Caudate stimulation enhances learning. *Brain* 2019;142(10):2930-2937.

72. **Widge AS**, Heilbronner SR, Hayden BY. Prefrontal cortex and cognitive control: new insights from human electrophysiology. *F1000 Research* 2019;8: F1000 Faculty Rev-1696.

73. Yousefi A, Basu I, Paulk AC, Peled N, Eskandar EN, Dougherty DD, Cash SS, **Widge AS***, Eden UT*. Decoding hidden cognitive states from behavior and physiology using a Bayesian approach. *Neural Computation* 2019;31(9):1751-88.

74. Basu I*, Robertson MM*, Crocker B, Peled N, Farnes K, Vallejo-Lopez DI, Deng H, Thombs M, Martinez-Rubio C, Cheng JJ, McDonald E, Dougherty DD, Eskandar EN, **Widge AS***, Paulk AC*, Cash SS*. Consistent linear and non-linear responses to invasive electrical brain stimulation across individuals and primate species with implanted electrodes. *Brain Stimulation* 2019;12(4):877–92.

75. Provenza NR, Paulk AC, Peled N, Restrepo I, Cash SS, Dougherty DD, Eskandar EN, Borton DA*, **Widge AS***. Decoding effortful mental states from distributed local field potential recordings in humans. *Journal of Neural Engineering* 2019;16:056015.

76. Zorowitz S, Rockhill A, Ellard KK, Link K, Herrington TM, Pizzagalli DA, **Widge AS**, Deckersbach T, Dougherty DD. The neural basis of decision conflict: a model based analysis. *eNeuro* 2019;ENEURO.0115-19.2019.

77. Ellard KK, Gosai AK, Felicione JM, Peters AT, Shea CV, Sylvia LG, Nierenberg AN, **Widge AS**, Dougherty DD, Deckersbach T. Deficits in frontoparietal activation and anterior insula functional connectivity during regulation of cognitive-affective interference in bipolar disorder. *Bipolar Disorders* 2019;21(3):244–58.

78. **Widge AS**, Miller EK. Next-generation clinical brain stimulation: targeting cognition and networks through neural oscillations. *JAMA Psychiatry* 2019;76(7):671–2.

79. Maeng LY, Murillo M, Mu M, Lo MC, de la Rosa M, O'Brien JM, Freeman DK, **Widge AS**. Behavioral validation of a wireless low-power neurostimulation technology in a conditioned place preference task. *Journal of Neural Engineering*. 2019;16:026022.

80. **Widge AS**, Zorowitz S, Basu I, Paulk AC, Cash SS, Eskandar EN, Deckersbach T, Miller EK, Dougherty DD. Deep brain stimulation of the internal capsule enhances human cognitive control and prefrontal cortex function. *Nature Communications*. 2019;10:1536.

81. Yousefi A, Paulk AC, Basu I, Dougherty DD, Eskandar EN, Eden UT*, **Widge AS***. COMPASS: an open-source, general-purpose software toolkit for computational psychiatry. *Frontiers in Neuroscience* 2019;12:957.

82. **Widge AS**, Bilge MT, Montana R, Chang W, Rodriguez CI, Deckersbach T, Carpenter LL, Kalin NH, Nemeroff CB. Electroencephalographic biomarkers for treatment response prediction in major depressive illness: a meta-analysis. *American Journal of Psychiatry.* 2019;176(1):44–56. [Selected for NEJM JournalWatch Psychiatry; subject of Psychiatric News article; top 5% of all articles scored by Altmetric]

83. Herman AB, **Widge AS**. Dynamic network targeting for closed loop deep brain stimulation. *Neuropsychopharmacology.* 2018;44:219–20.

84. Basu I, Crocker B, Farnes K, Robertson MM, Paulk AC, Vallejo DI, Dougherty DD, Cash SS, Eskandar EN, Kramer MM, **Widge AS**. A neural mass model to predict electrical stimulation evoked responses in human and non-human primate brain. *Journal of Neural Engineering*. 2018;15(6):066012.

85. Bilge MT, Gosai AK, **Widge AS**. Deep brain stimulation in psychiatry: mechanisms, models, and next-generation therapies. *Psychiatric Clinics of North America* 2018;41(3):373–83.

86. Blackwood E, Lo M-C, **Widge AS**. Continuous phase estimation for phase-locked neural stimulation using an autoregressive model for signal prediction. *Proceedings of the 2018 IEEE Engineering in Medicine & Biology Conference*. Honolulu, HI. 4736–4739.

87. Brennan BP, Jacoby RJ, **Widge AS**. A case of severe intractable contamination-based obsessive-compulsive disorder. *JAMA Psychiatry.* 2018;75(10):1088–1089.

88. Dougherty DD, Brennan BP, Stewart SE, Wilhelm S, **Widge AS**, Rauch SL. Neuroscientifically informed formulation and treatment planning for patients with obsessive-compulsive disorder: a review. *JAMA Psychiatry* 2018;75(10):1081–7. [Altmetric score of 50, in top 5% of all scientific articles tracked in 2018]

89. Ganguly E, Gupta R, **Widge A**, Reddy RP, Balasubramanian K, Reddy PS. Increasing full child immunization rates by government using an innovative computerized immunization list in rural India. *INQUIRY*. 2018 Jan 1;(55):0046958017751292. doi: 10.1177/0046958017751292.

90. Guérin B, Serano P, Iacono MI, Herrington TM, **Widge AS**, Dougherty DD, Bonmassar G, Angelone LM, Wald LL. Accurate modeling of deep brain stimulation patients for MRI safety studies*. Physics in Medicine and Biology.* 2018;63(9):095015.

91. Martinez-Rubio C, Paulk AC, McDonald E, **Widge AS***, Eskandar EN*. Multi-modal encoding of novelty, reward, and learning in the primate nucleus basalis of Meynert. *Journal of Neuroscience*. 2018;38(8):1942-1958.

92. Patel SR, Herrington TM, Sheth SA, Mian MK, Bick S, Yang JC, Flaherty AW, Frank MJ, **Widge AS**, Dougherty DD, Eskandar EN. Intermittent subthalamic nucleus deep brain stimulation induces risk-aversive behavior in human subjects. *eLife*. 2018;7:e36460.

93. Vu MAT, Adali T, Ba D, Buzs?ki G, Carlson D, Heller K, Liston C, Rudin C, Sohal VS, **Widge AS**, Mayberg HS, Sapiro G, Dzirasa K. A shared vision for machine learning in neuroscience. *Journal of Neuroscience*. 2018;38(7):1601-1607.

94. **Widge AS**. Cross-species neuromodulation from high-intensity transcranial electrical stimulation. *Trends in Cognitive Sciences.* 2018;22(5):372–4.

95. **Widge AS**, Boggess M, Rockhill AP, Mullen A, Sheopory S, Loonis R, Freeman DK, Miller EK. Altering alpha-frequency brain oscillations with rapid analog feedback-driven neurostimulation. *PLoS ONE*. 2018;13(12):e0207781.

96. **Widge AS**, Malone DA, Jr., Dougherty DD. Closing the loop on deep brain stimulation for treatment-resistant depression. *Frontiers in Neuroscience* 2018;12:175.

97. Zeier Z, Carpenter LL, Kalin NH, Rodriguez CI, McDonald WM, **Widge AS**, Nemeroff CB. Clinical implementation of pharmacogenetic decision support tools for antidepressant drug prescribing. *American Journal of Psychiatry*. 2018;175(9):873-86.

98. Dougherty DD, **Widge AS**. Neurotherapeutic interventions for psychiatric illness. *Harvard Review of Psychiatry.* 2017;25(6):253-255.

99. Freeman DK, O'Brien JM, Kumar P, Daniels B, Irion RA, Shraytah L, Ingersoll BK, Magyar AP, Czarnecki A, Wheeler J, Coppeta JR, Abban MP, Gatzke R, Fried SI, Lee SW, Duwel AE, Bernstein JJ, **Widge AS**, Hernandez-Reynoso A, Kanneganti A, Romero-Ortega MI, Cogan SF. A sub-millimeter, inductively powered neural stimulator. *Frontiers in Neuroscience*. 2017;11. doi: 10.3389/fnins.2017.00659

100. Goering S, Klein E, Dougherty DD, **Widge AS**. Staying in the loop: Relational agency and identity in next generation DBS for psychiatry. *American Journal of Bioethics – Neuroscience*. 2017;8(2):59-70.

101. Gonzalez SD, Williams AJ, Blacker CJ, Voort JLV, Schak KM, Neneroff CB, **Widge AS**, Tohen M. Putative biological predictors of treatment response in bipolar disorders. *Personalized Medicine in Psychiatry*. 2017;1:39–58.

102. LaPlante RA, Tang W, Peled N, Vallejo DI, Borzello M, Dougherty DD, Eskandar EN, **Widge AS**, Cash SS, Stufflebeam SM. The interactive electrode localization utility: software for automatic sorting and labeling of intracranial subdural electrodes. *International Journal of Computer-Assisted Radiology and Surgery*. 2017;12(10):1829-37.

103. Lo MC, **Widge AS**. Closed-loop neuromodulation systems: next-generation treatments for psychiatric illness. *International Review of Psychiatry.* 2017;29(2):191-204.

104. Philip NS, Nelson BG, Frohlich F, Lim KO, **Widge AS**, Carpenter LL. Low-intensity transcranial current stimulation in psychiatry. *American Journal of Psychiatry*. 2017;174(7):628-39.

105. **Widge AS**, Ellard KK, Paulk AC, Basu I, Yousefi A, Zorowitz S, Gilmour A, Afzal A, Deckersbach T, Cash SS, Kramer MA, Eden UT, Dougherty DD*, Eskandar EN*. Treating refractory mental illness with electrical brain stimulation: progress towards a patient-specific transdiagnostic approach. *Experimental Neurology*. 2017;287(4):461-472. [Chosen for cover image of this Special Issue.]

106. Yousefi A, Dougherty DD, Eskandar EN, **Widge AS***, Eden UT*. Estimating dynamic signals from trial data with censored values. *Computational Psychiatry*. 2017;1(1):58–81.

107. Yousefi A, Kakooee R, Beheshti MT, Dougherty DD, Eskandar EN, **Widge AS***, Eden UT*. Predicting learning dynamics in multiple-choice decision-making tasks using a Variational Bayes technique. *Proceedings of the 2017 IEEE Engineering in Medicine & Biology Conference*. 2017; 3194–3197.

108. Dougherty DD, Chou T, Corse AK, Arulpragasam AR, **Widge AS**, Cusin C, Evans KC, Greenberg BD, Haber SN, Deckersbach T. Acute deep brain stimulation changes in regional cerebral blood flow in obsessive-compulsive disorder. *Journal of Neurosurgery*. 2016;125(5):1087-1093.

109. Kim L, Harer J, Rangamani A, Moran J, Parks PD, **Widge A**, Eskandar E, Dougherty D, Chin SP. Predicting local field potentials with recurrent neural networks. *Proceedings of the 2016 IEEE Engineering in Medicine & Biology Conference*. 2016;808–811.

110. Klein E, Goering S, Gagne J, Shea CV, Franklin R, Zorowitz S, Dougherty DD, **Widge AS**. Brain-computer interface-based control of closed-loop brain stimulation: attitudes and ethical considerations. *Brain-Computer Interfaces*. 2016;3(3):140-148.

111. Lizano P, Popat-Jain A, Scharf JM, Berman NC, **Widge A**, Dougherty DD, Eskandar E. Challenges in managing treatment-refractory obsessive-compulsive disorder and Tourette's syndrome. *Harvard Review of Psychiatry* 2016;24(4):294–301.

112. Makris N, Rathi Y, Mouradian P, Bonmassar G, Papadimitriou G, Ing WI, Yeterian EH, Kubicki M, Eskandar EN, Wald LL, Fan Q, Nummenmaa A, **Widge AS**, Dougherty DD. Variability and anatomical specificity of the orbitofrontothalamic fibers of passage in the ventral capsule/ventral striatum (VC/VS): precision care for patient-specific tractography-guided targeting of deep brain stimulation (DBS) in obsessive compulsive disorder (OCD). *Brain Imaging and Behavior*. 2016;10(4):1054-67

113. Taylor JQ, Kovacik P, Traer J, Zakahi P, Oslowski C, **Widge AS***, Glorioso CA*. Avoiding a lost generation of scientists. *eLife* 2016;5:e17393. doi: 10.7554/eLife.17393 . [This paper was cited by the National Institutes of Health Office of the Director as part of the rationale for changes to their postdoctoral stipend policy.]

114. **Widge AS**, Deckersbach T, Eskandar EN, Dougherty DD. Deep brain stimulation for treatment-resistant psychiatric illnesses: what has gone wrong and what should we do next? *Biological Psychiatry.* 2016;79(4):e9-e10..

115. **Widge AS**, Sahay A. Closing the loop in deep brain stimulation for psychiatric disorders: lessons from motor neural prosthetics. *Neuropsychopharmacology Reviews.* 2016;41(1):379–80.

116. **Widge AS**, Zorowitz S, Link K, Miller EK, Deckersbach T, Eskandar EN, Dougherty DD. Ventral capsule/ventral striatum deep brain stimulation does not consistently diminish occipital cross-frequency coupling. *Biological Psychiatry*. 2016;80(7):e59-e60.

117. Bjune CK, Marinis TF, Brady JM, Moran J, Wheeler J, Sriram TS, Parks PD, **Widge AS**, Dougherty DD, Eskandar EN. Packaging architecture for an implanted system that monitors brain activity and applies therapeutic stimulation. *Journal of Microelectronics and Electronics Packaging*. 2016;13(2):64-70.

118. **Widge AS**, Licon E, Zorowitz S, Corse A, Arulpragasam AR, Camprodon JA, Cusin C, Eskandar EN, Deckersbach T, Dougherty DD. Predictors of hypomania during ventral capsule/ventral striatum deep brain stimulation. *Journal of Neuropsychiatry and Clinical Neuroscience.* 2015; 28(1):38-44.

119. Bjune CK, Marinis TF, Sriram TS, Brady JM, Moran J, Parks PD, **Widge AS**, Dougherty DD, Eskandar EN, editors. Packaging architecture for an implanted system that monitors brain activity and applies therapeutic stimulation. *Proceedings of the IMAPS 48th Annual International Symposium on Microelectronics*. 2015; 2015(1):000548-000554.

120. Franklin R, Zorowitz S, Corse AK, **Widge AS**, Deckersbach T. Lurasidone for the treatment of bipolar depression: an evidence-based review. *Neuropsychiatric Disease and Treatment*. 2015;11:2143-52.

121. Fung LK, Akil M, **Widge A**, Roberts LW, Etkin A. Attitudes towards neuroscience education in psychiatry from a national multi-stakeholder survey. *Academic Psychiatry* 2015; 39(2):139-146.

122. Yousefi A, Paulk AC, Deckersbach T, Dougherty DD, Eskandar EN, **Widge AS***, Eden UT*. Cognitive state prediction using an EM algorithm applied to gamma distributed data. *Proceedings of the 37th Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC 2015)*. 2015;7819-7824.

123. Deng X, Faghih RT, Barbieri R, Paulk AC, Asaad WF, Brown EN, Dougherty DD, **Widge AS**, Eskandar EN, Eden UT. Estimating a dynamic state to relate neural spiking activity to behavioral signals during cognitive tasks. *Proceedings of the 37th Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC 2015)*. 2015;7808-7813.

124. Faghih RT, Stokes PA, Marin MF, Zsido RG, Zorowitz S, Rosenbaum BL, Huijin S, Milad MR, Dougherty DD, Eskandar EN, **Widge AS**, Brown EN, Barbieri R. Characterization of fear conditioning and fear extinction by analysis of electrodermal activity. *Proceedings of the 37th Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC 2015).* 2015; 7814-7818.

125. Bjune CK, Marinis TF, Brady JM, Moran J, Wheeler JJ, Sriram TS, Parks PD, **Widge AS**, Dougherty DD, Eskandar EN. Package architecture and component design for an implanted neural stimulator with closed loop control. *Proceedings of the 37th Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC 2015)*. 2015;7825-7830

126. Hamilton L, McConley M, Angermueller K, Goldberg D, Corba M, Kim L, Moran J, Parks PD, Sang C, **Widge AS**, Dougherty DD, Eskandar EN. Neural signal processing and closed-loop control algorithm design for an implanted neural recording and stimulation system. *Proceedings of the 37th Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC 2015)*. 2015;7831-7836.

127. Wheeler JJ, Baldwin K, Kindle A, Guyon D, Nugent B, Segura C, Rodriguez J, Czarnecki A, Dispirito HJ, Lachapelle J, Parks PD, Moran J, **Widge AS**, Dougherty DD, Eskandar EN. An implantable 64-channel neural interface with reconfigurable recording and stimulation. *Proceedings of the 37th Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC 2015)*. 2015;7837-7840.

128. Fung LK, Akil M, **Widge A**, Roberts LW, Etkin A. Attitudes toward neuroscience education among psychiatry residents and fellows. *Academic Psychiatry.* 2014; 38(2):127-134.

129. **Widge AS**, Avery DH, Zarkowski P. Methodology and the limits of QEEG: reply to Olbrich & Arns. *Brain Stimulation*. 2014;7(1):148-9.

130. **Widge AS**, Dougherty DD, Moritz CT. Affective brain-computer interfaces as enabling technology for responsive psychiatric stimulation. *Brain-Computer Interfaces.* 2014; 1(2):126-136.

131. Benjamin S, **Widge AS**, Shaw K. Neuropsychiatric and neuroscience milestones for general psychiatry trainees. *Academic Psychiatry.* 2014; 38(3):275-282.

132. **Widge AS**, Hunt J, Servis M. Systems-Based Practice and Practice-Based Learning for the general psychiatrist: old competencies, new emphasis. *Academic Psychiatry.* 2014; 38(3):288-293.

133. **Widge AS**, Schultz HE. Opportunities and challenges: residents' perspectives on the next accreditation system in psychiatry. *Academic Psychiatry*. 2014;38(3):303-4.

134. **Widge AS**, Moritz CT. Pre-frontal control of closed-loop limbic neuromodulation by rodents using a brain-computer interface. *Journal of Neural Engineering.* 2014; 11(2):024001.

135. **Widge AS**, Agarwal P, Giroux M, Farris S, Kimmel RJ, Hebb AO. Psychosis from subthalamic nucleus deep brain stimulator lesion effect. *Surgical Neurology International*. 2013;4:7.

136. **Widge AS**, Avery DH, Zarkowski P. Baseline and treatment-emergent EEG biomarkers of antidepressant medication response do not predict response to repetitive transcranial magnetic stimulation. *Brain Stimulation.* 2013;6(6):929-931.

137. **Widge AS**, Habibi BA, Moritz CT. Pilot study of cortical recording with synchronized limbic stimulation. *2013 IEEE Neural Engineering Short Papers*. 0577.

138. **Widge AS**. Advocacy and the aspiring academic psychiatrist. *American Journal of Psychiatry: Residents' Journal*. 2012;7(6):11.

139. **Widge AS**, Tomycz ND, Kanter AS. Sacral preservation in cauda equina syndrome from inferior vena cava thrombosis. *Journal of Neurosurgery: Spine*. 2009 Feb 23;10(3):257–259.

140. **Widge AS**, Matsuoka Y, Kurnikova M. Development and initial testing of an empirical forcefield for simulation of poly(alkylthiophenes). *Journal of Molecular Graphics and Modeling.* 2008;27(1):34-44.

141. **Widge AS**, Jeffries-El M, Cui X, Lagenaur CF, Matsuoka Y. Self-assembled monolayers of polythiophene conductive polymers improve biocompatibility and electrical impedance of neural electrodes. *Biosensors and Bioelectronics.* 2007;22(8):1723-32.

142. **Widge AS**, Matsuoka Y, Kurnikova M. Computational modeling of poly(alkylthiophene) conductive polymer insertion into phospholipid bilayers. *Langmuir*. 2007;23(21):10672-81.

143. **Widge AS**, Goutman S, Levine A, Ravindranath D, Shapiro LT, Walsh W, Watson M, Zimmerman H. Effects of medical education debt on access to health care. *CONTEXT*. 2006;1:22-32. [This paper was cited in a brief before the US Supreme Court related to the employment status of residents/fellows.]

144. **Widge AS**, Matsuoka Y. Conductive polymer 'molecular wires' increase conductance across artificial cell membranes. *Proceedings of the 26th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (IEMBS '04).* 2:4330-43333.

145. **Widge AS**, Jeffries-El M, Lagenaur CF, Weedn VW, Matsuoka Y. Conductive polymer 'molecular wires' for neuro-robotic interfaces. *Proceedings of the 2004 International Conference on Robotics and Automation (ICRA '04)* 5:5058-5063.

146. Bailey-Kellogg C, **Widge AS**, Kelley J, Berardi M, Bushweller J, Donald BR. The NOESY Jigsaw: automated protein secondary structure and main-chain assignment from sparse, unassigned NMR data. *Journal of Computational Biology.* 2000;7(3/4):537-558.

147. Bailey-Kellogg C, **Widge AS**, Kelley J, Berardi M, Bushweller J, Donald BR. The NOESY Jigsaw: automated protein secondary structure and main-chain assignment from sparse, unassigned NMR data. *Proceedings of the Fourth Annual International Conference on Computational Molecular Biology (RECOMB '00).* 1:33-44.

Non-Peer-Reviewed Publications

148. 1.

149. Forum on Neuroscience and Nervous System Disorders, Board on Health Sciences Policy, Health and Medicine Division, National Academies of Sciences, Engineering, and Medicine. Exploring the Adoption of Implantable Brain Stimulation into Standard of Care for Central Nervous System Disorders: Proceedings of a Workshop []. Pool R, Childers E, Norris SMP, editors. Washington, D.C.: National Academies Press; 2024. Available from: https://www.nap.edu/catalog/27657

150. Grzenda A, **Widge AS**. Electroencephalographic biomarkers for predicting antidepressant response: new methods, old questions. *JAMA Psychiatry*. 2020;77(4):347–8.

151. Chakrabarty P, Negi S, Andres RM, Favaro B, Singh B, Hilleary R, Arthur PK, Street IH, Cheung MK, Parsons M, Easun T, Cingl L, Wang L , **Widge AS**, Li R, Zhou K, Pinto PT, Yoho R, Buschke F. Facilitating conservation. *Science*. 2017;356(6335):242-4.

152. **Widge AS**, Dougherty DD. Deep brain stimulation for treatment-refractory mood and obsessive-compulsive disorders. *Current Behavioral Neuroscience Reports*. 2015;2(4):187-97.

153. **Widge AS** (contributor). NextGen VOICES 8. *Science*. 2013;342(6154):36-8.

154. **Widge AS**. Residents Forum. *Psychiatric News*. 2012-2013. A 12-column monthly series.

Articles Submitted for Publication

155. Paulk AC, Farnes K, Yousefi A, Peled N, Crocker B, Vallejo-Lopez D, Belok G, Zorowitz S, Afzal A, Gilmour A, Nossenson N, Ellard KK, Eden UT, Etkin A, Deckersbach T, Dougherty DD, Eskandar EN, **Widge AS***, Cash SS*. Bidirectional modulation of human emotional conflict resolution using intracranial stimulation. Preprint at https://www.biorxiv.org/content/10.1101/825893v1 .

156. Felsenstein O, Peled N, Hahn E, Rockhill AP, Folsom L, Gholipour T, Macadams K, Rozengard N, Paulk AC, Dougherty D, Cash SS, **Widge AS**, Hämäläinen M, Stufflebeam S. Multi-Modal Neuroimaging Analysis and Visualization Tool (MMVT). Preprint at http://arxiv.org/abs/1912.10079 .

157. Kragel JE, Lurie SM, Issa NP, Haider HA, Wu S, Tao J, Warnke P, Schuele SU, Rosenow JM, Zelano C, Disterhoft JF, **Widge AS**, Voss JL. Closed-loop control of theta oscillations enhances human hippocampal network connectivity. Submitted.

158. Reimer AE, Rijn EMD van, Kim J, Mensinger ME, Sachse EM, Wald A, Hoskins E, Singh K, Alpers A, Cooper D, Lo MC, Oliveira AR de, Simandl G, Stephenson N, **Widge AS**. Cross-species modeling and enhancement of cognitive control with striatal brain stimulation [Internet]. bioRxiv; 2024 [cited 2024 Apr 1]. p. 2024.02.16.580680. Available from: https://www.biorxiv.org/content/10.1101/2024.02.16.580680v2

159. Liu J, Younk R, Drahos LM, Nagrale SS, Yadav S, **Widge AS***, Shoaran M*. Neural Decoding and Feature Selection Methods for Closed-Loop Control of Avoidance Behavior. Submitted.

160. McInnes AN*, Olsen ST*, Sullivan CRP, Cooper DC, Wilson S, Sonmez AI, Albott SC, Olson SC, Peterson CB, Rittberg BR, Herman A, Bajzer M, Nahas Z, **Widge AS**. Trajectory Modeling and Response Prediction in Transcranial Magnetic Stimulation for Depression. Submitted. Available from: http://medrxiv.org/lookup/doi/10.1101/2024.05.30.24308258

Educational Videos-Physician Education Material

161. Diagnostic & Statistical Manual of Mental Disorders, 5th Edition (DSM-5). American Psychiatric Association (2013). Internationally recognized and relied upon as the premier handbook of psychiatric diagnostic criteria. As voting member of Board of Trustees, shared responsibility for proofreading and approving all criteria, as well as debating inclusion/placement of controversial diagnoses.

162. The Psychiatry Milestone Project. Accreditation Council for Graduate Medical Education (2013). Benchmark document of expectations for curriculum and progression in all psychiatry training. Foundation for ACGME's Next Accreditation System, implemented in 2013-2014 for all medical specialties. As member of Working Group, developed and edited numerous milestones and assessments.

163. Introduction to the Practice of Medicine (2013-2014). Consultant and content editor for a series of online modules produced by the American Medical Association to enhance residents' professional skills.

Chapters in Books

164. Dastin-van Rijn EM, Mensinger M, Dougherty DD, **Widge AS**. DBS in Psychiatric Disorders. In: Temel Y, Benazzouz A, editors. *Neuroscience of Deep Brain Stimulation*. Elsevier; Submitted.

165. **Widge AS**, Dougherty DD. Managing patients with psychiatric disorders with deep brain stimulation. In: Marks WJ Jr. and Ostrem JL, editors. *Deep Brain Stimulation Management*. 3rd ed. Cambridge, UK: Cambridge University Press; 2022. p. 198–214.

166. Aaronson ST, **Widge AS**. Implantable neurostimulation devices for depression: vagus nerve stimulation and deep brain stimulation. In: McClintock SM, Choi J, editors. *Handbook of Neurocognitive Function in Depression: Scientific Foundations and Clinical Practice*. New York, NY: Guildford Press; 2022. p. 407–19.

167. Dougherty DD, **Widge AS**, Greenberg BD. Deep brain stimulation for highly refractory depression. In: Krames ES, Peckham PH, Rezai AR, editors. *Neuromodulation: Comprehensive Textbook of Principles, Technologies, and Therapies*. 2nd ed: Academic Press; 2018. p. 1057-72.

168. Keen EC, **Widge AS**, Dougherty DD. Functional neurosurgery in severe and treatment-refractory OCD. In: Pittenger C, editor. *Obsessive-Compulsive Disorder: Phenomenology, Pathophysiology, and Treatment*. New York, NY: Oxford University Press; 2017. p. 507-16.

169. **Widge AS**, Moritz CT. Closed-loop stimulation in emotional circuits for neuro-psychiatric disorders. In: El Hady A, editor. *Closed Loop Neuroscience*. San Diego, CA: Elsevier; 2016. p. 229-240.

170. **Widge AS**, Arulprasagam AR, Deckersbach T, Dougherty DD. Emerging Trends in deep brain stimulation for psychiatric disorders. In: Scott R, Kosslyn S, editors. *Emerging Trends in the Social and Behavioral Sciences*: John Wiley and Sons; 2015.

171. **Widge AS**, Dougherty DD. Managing patients with psychiatric disorders with deep brain stimulation. In: Marks WJJ, editor. *Deep Brain Stimulation Management*. 2nd ed. Cambridge, UK: Cambridge University Press; 2015.

172. **Widge AS**, Moritz CT, Matsuoka Y. Direct neural control of anatomically correct robot hands. In: Tan DS, Nijholt A, editors. *(B+H)CI: The Human in Brain-Computer Interfaces and the Brain in Human-Computer Interaction*: Springer; 2010. p. 105-19.

Software Development

173. Open Ephys Plugins. My laboratory has contributed multiple closed-loop high-efficiency signal processing components to the Open Ephys architecture, including
    a. Real-time continuous phase estimator: https://github.com/tne-lab/phase-calculator
    b. Real-time coherence visualization: https://github.com/tne-lab/coherence-viewer
    c. Adaptive and randomized thresholding: https://github.com/tne-lab/crossing-detector
    d. Real time ICA decomposition and cleaning of LFP data: https://github.com/tne-lab/ica-plugin
    e. Lab Streaming Layer data ingestion: https://github.com/tne-lab/LSL-inlet
    f. Neuralynx data ingestion: https://github.com/tne-lab/neuralynx-plugin
174. Peled N. The Multi-Modality Visualization Tool (MMVT) for neuro-imaging, non-invasive physiology, and physiology data. https://github.com/pelednoam/mmvt
175. Yousefi A. COMPASS: A Matlab state space modeling toolbox for discrete & continuous observation processes and censored & missing data points. https://github.com/Eden-Kramer-Lab/COMPASS

Patents

Name	Number	Date	Status
Adaptive Real TIme STate Space (ARTISTS) controller for electrical neuromodulation for treatment of neurological disorders	UMN 2022-227	2022	PCT filed
Method for identifying belief states from physiologic signals	UMN 2022-217	2022	Not yet filed
Systems and methods for energy-efficient measurement of neurophysiological oscillations	UMN 2021-147	2021	PCT filed
Methods and apparatus for restoration of brain network activity	UMN 2021-136	2021	PCT filed
Systems and methods for control of pain and pain-related brain signals	UMN 2021-100	2021	Provisional filed
System for restoring and enhancing memory	UMN 2020-173	2020	Not yet filed
Systems and methods for measuring and altering brain activity related to flexible behavior	US20240017069A1	2020	Pending
Systems and methods for controlling synchrony in a plurality of brain regions	US16/762,563	2017	Granted (2022)
Systems, methods, and media for detecting and facilitating an effortful mental task by providing real-time deep brain stimulation	PCT/US18/29268	2017	Granted (2023)
Systems and methods for treating mental and neurological disorders involving abnormally high brain connectivity	US16/468,134	2016	Granted (2022)
Systems and methods for controlling brain activity	US11013919B2	2016	Granted (2021)

System and methods for monitoring and improving cognitive flexibility	US20180192936A1	2015	Granted (2022)
Method for cross-diagnostic identification and treatment of neurologic features underpinning mental and emotional disorders	US10758174B2	2013	Granted (2020)
Hybrid system for treating mental and emotional disorders with responsive brain simulation	US10413235B2	2013	Granted (2019)

Presentations

Invited Oral Presentations at International Professional Meetings, Conferences, etc.

1. **Widge AS.** Precision Psychiatric Neuromodulation: Lessons from DBS and Beyond. Focused Ultrasound PULSES Symposium. Toronto, Canada, June 2024.

2. **Widge AS.** DBS programming for psychiatric disorders. National Academies Neuroscience Forum Workshop on Deep Brain Stimulation, Washington, DC, October 2023.

3. **Widge AS.** Engineering Brain Circuits of Cognitive Flexibility. Transcontinental Computational Psychiatry Workshop, virtual lecture, 2023.

4. **Widge AS.** Convergent and Divergent Circuits of Response in DBS for OCD. World Society of Stereotaxic and Functional Neurosurgery, Incheon, South Korea, 2022.

5. **Widge AS.** Dynamic Network Targeting in Closed-Loop Deep Brain Stimulation. International Neuromodulation Society 2022 World Congress, Barcelona, Spain, 2022.

6. **Widge AS.** Closed Loop Approaches to Psychiatric DBS: From Diagnoses to Cognitive Domains. International Neuromodulation Society 2022 World Congress, Barcelona, Spain, 2022.

7. **Widge AS**. Engineering Brain Circuits to Treat Psychiatric Disorders. Clinical Neuroscience Grand Rounds; University of Calgary, Calgary, AL, Canada, 2019.

8. **Widge AS**. Rethinking Deep Brain Stimulation for Mental Illness. New Frontiers of Neuromodulation; Brussels, Belgium, 2018.

Invited Oral Presentations at National Professional Meetings, Conferences, etc.

1. **Widge AS**. Engineering Cognitive Control to Treat Psychiatric Disorders. Computational Properties of Prefrontal Cortex Conference. Bethesda, MD, May 2024.

2. **Widge AS**. Towards Closed Loop DBS Programming in OCD. American Society for Stereotactic and Functional Neurosurgery Workshop on Psychiatric Neurosurgery. Atlanta GA, May 2024.

3. **Widge AS**. Controlling Brain Networks With Oscillation-Locked Neurostimulation. Gordon Research Conference on Neuroelectronic Interfaces. Galveston, TX, March 2024.

4. **Widge AS**. Engineering Brain Circuits to Treat Mental Disorders. Massachusetts General Hospital Neuroscience Grand Rounds. Boston, MA, March 2024.

5. **Widge AS.** Engineering Brain Circuits to Treat Mental Disorders. Inaugural lecture, UCLA Translational Neurotechnology Training Program. Los Angeles, CA, January 2024.

6. **Widge AS.** Closing the Loop in Psychiatric Brain Stimulation: Physiology, Psychometrics, and Plasticity. NPPR Editors' Plenary. American College of Neuropsychopharmacology Annual Meeting. Tampa, FL, 2023.

7. **Widge AS.** Engineering Brain Circuits to Treat Mental Disorders. Sheppard Pratt Hospital Grand Rounds, November 2023.

8. **Widge AS**. Engineering Brain Circuits to Treat Mental Disorders. University of Washington Biomedical Engineering Seminar, May 2023.

9. **Widge AS**. Engineering Brain Circuits to Treat Mental Disorders. New York University Psychiatry Grand Rounds, May 2023.

10. **Widge AS**. Direct Electrical/Magnetic Brain Stimulation for Mood Disorders. Anxiety & Depression Association of America. Washington, DC, April 2023.

11. **Widge AS**. Translational Brain Circuit Engineering to Treat Mood & Anxiety Disorders. Anxiety & Depression Association of America. Washington, DC, April 2023.

12. **Widge AS**. Engineering Brain Circuits to Treat Mental Disorders. University of Texas - Southwestern Psychiatry Grand Rounds, February 2023.

13. **Widge AS**. Engineering Brain Circuits to Treat Mental Disorders. University of Colorado Psychiatry Grand Rounds, October 2022.

14. **Widge AS**. Engineering Brain Circuits to Treat Mental Disorders. University of Texas – Houston Psychiatry Grand Rounds, September 2022.

15. **Widge AS**. Engineering Brain Circuits to Treat Mental Disorders. University of California at Davis Neural Engineering Seminar. 2022.

16. **Widge AS.** Deep Brain Stimulation for Mood and Anxiety Disorders. Pennsylvania State University Center for Neuroengineering seminar. 2021. (Virtual lecture due to COVID.)

17. **Widge AS.** Engineering Brain Circuits to Treat Mental Disorders. University of Pennsylvania Center for Neuromodulation in Depression and Stress seminar. 2021. (Virtual lecture due to COVID.)

18. **Widge AS**. What Non-Invasive Brain Stimulation Can Learn From Invasive Stimulation. International Network of tES-fMRI 5th Webinar. 2021. (Virtual seminar due to COVID.)

19. **Widge AS.** Engineering Brain Circuits to Treat Mental Disorders. Grand Rounds; University of Illinois – Chicago, Department of Psychiatry; Chicago, IL, 2020. (Virtual lecture due to COVID.)

20. **Widge AS.** Engineering Brain Circuits to Treat Mental Disorders. Grand Rounds; University of Buffalo Department of Psychiatry; Buffalo, NY, 2020. (Virtual lecture due to COVID.)

21. **Widge AS**. Deep Brain Stimulation of the Internal Capsule Enhances Cognitive Control and PFC Function. North American Neuromodulation Society; Las Vegas, NV, 2020.

22. **Widge AS**. Engineering Brain Circuits to Treat Mental Disorders. Psychology Colloquium; Boston University, Boston, MA, 2019.

23. **Widge AS.** Phase-Locked and Coherence-Directed Neurostimulation for Psychiatric Illness. UC Davis Neuroscience Symposium; University of California, Davis, CA, 2019.

24. **Widge AS.** Deep Brain Stimulation for Mental Disorders: Emerging Technologies and Ethical Questions. Portland Neuro-Ethics Symposium; Oregon Health Sciences University, Portland, OR, 2019.

25. **Widge AS**. Deep Brain Stimulation for Mood and Anxiety Disorders. Psychiatry Grand Rounds; Oregon Health Sciences University, Portland, OR, 2019.

26. **Widge AS**. Engineering Brain Circuits to Treat Psychiatric Disorders. Translational Cognitive Neuroscience Seminar; Northwestern University, Evanston, IL, 2018.

27. **Widge AS**. Enhancing Top-Down Cognitive Control Across Species and Contexts with Striatal Brain Stimulation. North American Neuromodulation Society Summer Meeting; New York City, NY, 2018.

28. **Widge AS**. Decoding Networks of Emotion and Cognition for Closed-loop Invasive Brain Stimulation. North American Neuromodulation Society Summer Meeting; New York, NY, 2018.

29. **Widge AS**. Deep Brain Stimulation for Mood and Anxiety Disorders. Psychiatry Grand Rounds; Case Western Reserve University, Cleveland, OH, 2018.

30. **Widge AS**. Neuroethical Implications of Closed-Loop Deep Brain Stimulation. National Academies; Washington, D.C., 2018.

31. **Widge AS**. Big Data in Mental Health (Symposium Discussant). American Psychiatric Association Annual Meeting; New York City, NY, 2018.

32. **Widge AS**. Closed-Loop Deep Brain Stimulation for Mental Disorders. Biological Sciences Training Program Seminar; Yale University School of Medicine, New Haven, CT, 2017.

33. **Widge AS**. Closed-Loop Deep Brain Stimulation for Mental Disorders. Psychiatry Research Seninar; Columbia University Medical Center, New York City, NY, 2017.

34. **Widge AS**. Closed-Loop Deep Brain Stimulation for Mental Disorders: Progress Towards a Circuit-Directed Treatment. Biomedical Engineering Seminar; Carnegie Mellon University, Pittsburgh, PA, 2017.

35. **Widge AS**. Deep Brain Stimulation for Mood & Anxiety Disorders. Psychiatry Research Seminar; University of Minnesota, Minneapolis, MN, 2017.

36. **Widge AS**. Deep Brain Stimulation for Mood and Anxiety Disorders. Grand Rounds; University Hospital Cleveland Medical Center, 2017.

37. **Widge AS**. Deep Brain Stimulation for Psychiatric Disorders. Colorado Neurological Institute DBS Symposium; Beaver Creek, CO, 2017.

38. **Widge AS**. Closing the Loop for Psychiatric Brain Stimulation. Neural Engineering Seminar; Mayo Clinic, Rochester, MN, 2016.

39. **Widge AS**. Engineering Cognition with Deep Brain Stimulation. Kluver-Block Memorial Symposium; University of Chicago, Chicago IL, 2016.

40. **Widge AS**. Deep Brain Stimulation for Psychiatric Disorders. Colorado Neurological Institute DBS Symposium; Beaver Creek, CO, 2016.

41. **Widge AS**. Closed Loop and Responsive Neurostimulation. Colorado Neurological Institute DBS Symposium; Beaver Creek, CO, 2016.

42. **Widge AS**. Mapping the Limbic Circuit with Functional Imaging. Colorado Neurological Institute DBS Symposium; Beaver Creek, CO, 2016.

43. **Widge AS**. Closing the Loop for Psychiatric Brain Stimulation. Kavli Brain Seminar; University of Washington Center for Sensorimotor Neural Engineering, 2015.

44. **Widge AS**. Deep Brain Stimulation for Mood and Anxiety Disorders: Present and Future. Department of Psychiatry Grand Rounds; University of Washington, Seattle, WA, 2015.

45. **Widge AS**. Emotion, Cognition, and Oscillations. NIH Non-Invasive Brain Stimulation Workshop; Chicago, IL, 2015.

46. **Widge AS**. Closing the Loop for Psychiatric Brain Stimulation. Department of Neurology Grand Rounds; University of Florida, Gainesville, FL, 2015.

47. **Widge AS**. Closing the Loop for Psychiatric Brain Stimulation. Stanford University Department of Neurological Surgery; Palo Alto, CA, 2015.

48. **Widge AS**. Closing the Loop for Psychiatric Brain Stimulation. DFG-NSF Collaborative Neuroscience Workshop; Arlington, VA, 2014.

49. **Widge AS**. Patient-Controlled Psychiatric Brain Stimulation. Psychiatric Neuroscience Seminar; Dartmouth-Hitchcock Medical Center, Hanover, NH, 2014.

50. **Widge AS**. Patient-Controlled Psychiatric Brain Stimulation. Neurotherapeutics Research Seminar; Massachusetts General Hospital, Boston, MA, 2012.

51. **Widge AS**. Patient-Controlled Psychiatric Brain Stimulation. Brain Stimulation Laboratory seminar; Medical University of South Carolina, Charleston, SC, 2012.

52. **Widge AS**. Neural Interfaces: Current State of the Art. Dartmouth Polytrauma Conference; Hanover, NH, 2006.

Invited Oral Presentations at Local Professional Meetings, Conferences, etc.

1. **Widge AS.** Controlling Oscillatory Brain Networks With Targeted Neuromodulation. University of Minnesota Non-Invasive Brain Stimulation (NIBS) Conference; Minneapolis, MN, 2022.

2. **Widge AS**. Engineering Brain Circuits to Treat Mental Disorders. University of Minnesota Administrative Grand Rounds; Minneapolis, MN, 2019.

3. **Widge AS**. Deep Brain Stimulation to Modify Circuits of Compulsive, Habitual Behavior. Minnesota Neuromodulation Symposium; Minneapolis, MN, 2019.

4. **Widge AS**. Engineering Brain Networks to Treat Mental Illness. Design of Medical Devices Conference; Minneapolis, MN, 2019.

5. **Widge AS**. Reward Systems, Addiction Biology, and Next-Generation Treatments. Northlands Toxicology Society Annual Meeting; Eagan, MN, 2018.

6. **Widge AS**. Engineering Brain Circuits to Treat Mental Illness. Graduate Program in Neuroscience Colloquium; University of Minnesota, Minneapolis, MN, 2018.

7. **Widge AS**. Engineering Brain Circuits to Treat Mental Illness. Biomedical Engineering Seminar; University of Minnesota, Minneapolis, MN, 2018.

8. **Widge AS**. Deep Brain Stimulation for Moood and Anxiety Disorders. Clinical Education Seminar, AllCare Wellness Institute, Bedford, MA, 2018.

9. **Widge AS**. Digital Diagnostics: Leveraging Technology to Enhance Mental Health Assessment (Panel chair/discussant). Technology in Psychiatry Summit; McLean Hospital, Belmont, CA, 2017.

10. **Widge AS**. Closing the Loop in Psychiatric Deep Brain Stimulation. Medical Electronic Devices Realization Workshop; Massachusetts Intitute of Technology, Cambridge, MA, 2017.

11. **Widge AS**. Enhancing Mental Flexibility with Deep Brain Stimulation. IEEE Brain Data Competition Workshop; Charles River Analytics, Cambridge MA, 2017.

12. **Widge AS**. Deep Brain Stimulation for Mood & Anxiety Disorders. Brainmap Seminar; Martinos Center for Human Brain Imaging, Boston, MA, 2016.

13. **Widge AS**. Deep Brain Stimulation for Mood & Anxiety Disorders. Psychiatric Neuroscience Seminar; Brigham & Women's Hospital, Boston, MA, 2016.

14. **Widge AS**. Neurosurgical Interventions for Treatment-Resistant Mood and Anxiety Disorders. Psychiatry Grand Rounds; Beth Israel Deaconess Medical Center, Boston, MA, 2016.

15. **Widge AS**. TRANSFORM DBS: Rethinking Brain Stimulation for Mental Illness. PTSD Innovation Seminar; MGH Center for Anxiety & Traumatic Stress Disorders, Boston, MA, 2016.

16. **Widge AS**. Neurosurgical Interventions for Treatment-Resistant Mood and Anxiety Disorders. Psychiatry Grand Rounds; St. Elizabeth's Medical Center, Boston, MA, 2016.

17. **Widge AS**. Deep Brain Stimulation for Psychiatric Disorders, NEURONS Evening Seminar; Northeastern University, Boston, MA, 2015.

18. **Widge AS**. Deep Brain Stimulation and Surgical Interventions for Treatment-Resistant Mood and Anxiety Disorders. Grand Rounds; Bournewood Hospital, Boston MA, 2015.

19. **Widge AS**. Neurosurgical Interventions for Treatment-Resistant Mood and Anxiety Disorders. Psychiatry Grand Rounds; Boston Medical Center, Boston, MA, 2015.

20. **Widge AS**. Deep Brain Stimulation for Major Depression. Patient & Family Research Day; Massachusetts General Hospital, Boston, MA, 2015.

21. **Widge AS**. TRANSFORM DBS: Psychiatric Brain Stimulation and Neurocircuitry. CyberMedRx Conference, Microsoft; Cambridge, MA, 2015.

22. **Widge AS**. Neurosurgical Interventions for Obsessive-Compulsive Disorder. McLean Hospital OCD Massachusetts Lecture Series; Belmont, MA, 2015.

23. **Widge AS**. TRANSFORM DBS: Developing Next-Generation Psychiatric Brain Stimulation. PTSD Innovation Seminar, Red Sox/MGH Home Base Program; Boston, MA, 2015.

24. **Widge AS**. Closing the Loop in Psychiatric Brain Stimulation. Affective & Translational Neuroscience Seminar; McLean Hospital, Belmont, MA, 2014.

25. **Widge AS**. Electro-Magnetic Brain Stimulation for Psychiatric Illness: Progress, Challenges, and Opportunities. Medical Electronic Device Realization Seminar; Massacusetts Institite of Technology, Cambridge, MA, 2014.

26. **Widge AS**. Neurotherapeutic Interventions for Psychiatric Diseases. Charles F Johnson Memorial Lecture; Lawrence Memorial Hospital, Medford MA, 2014.

27. **Widge AS**. The Neuroscience of Learning, Motivation, and Consumption. Brain Rewards and Climate Change: The Neurobiology of Simplification; Harvard Center for the Environment, Cambridge, MA, 2014.

28. **Widge AS**. TRANSFORM DBS: Developing Next-Generation Psychiatric Brain Stimulation. Magnetoencephalography Research Group Seminar; Charlestown, MA, 2014.

29. **Widge AS**. TRANSFORM DBS: Developing Next-Generation Psychiatric Brain Stimulation. Center for Brain/Mind Medicine Seminar; Brigham & Women's Hospital, Boston, MA, 2014.

30. **Widge AS**. Patient-Controlled Psychiatric Brain Stimulation. Grand Rounds; Department of Psychiatry, Harborview Medical Center, Seattle, WA, 2012.

Peer-reviewed Oral Presentations at International Professional Meetings, Conferences, etc.

1. **Widge AS**. Model-Based Approaches to Controlling Brain Networks (Symposium Speaker). International Brain Stimulation Conference; Vancouver, BC, Canada, 2019.

2. **Widge AS**. Closed-Loop Deep Brain Stimulation to Enhance Cognitive Control (Symposium Speaker). International Brain Stimulation Conference; Vancouver, BC, Canada, 2019.

3. **Widge AS**. Closed-Loop Control of Cognitive Flexibility (Symposium Speaker). Winter Conference on Brain Research; Whistler, BC, Canada, 2018.

2. **Widge AS**. Designing a Next-Generation Deep Brain Stimulation Implant (Symposium Speaker). Winter Conference in Brain Research; Whistler, BC, Canada, 2018.

4. **Widge AS**. Closing the Loop for Deep Brain Stimulation (Symposium Speaker). Society for Biological Psychiatry Annual Meeting; Toronto, ON, Canada, 2015.

5. **Widge AS**. Neural Engineering and Neuro-Psychiatric Disorders: Integrated Algorithmic and Hardware Design of a Closed-Loop Brain Stimulation System (Symposium co-chair). IEEE Engineering in Medicine & Biology Conference; Milan, Italy, 2015.

Peer-reviewed Oral Presentations at National Professional Meetings, Conferences, etc.

1. **Widge AS.** Understanding Brain-Behavior Relationships Across Controlled and Natural Settings. American College of Neuropsychopharmacology Annual Meeting. Tampa, FL, 2023.

2. **Widge AS.** Controlling the When: Precision Oscillation-Locked Neurostimulation. American College of Neuropsychopharmacology Annual Meeting. Tampa, FL, 2023.

3. Vanover K (chair), **Widge AS** (co-chair), Fenton A, Graham D, Moghaddam B, Ressler K, Spencer S, Strakowski S, Young J, Schmid M. Fostering Translational Research and Academic / Industry Collaboration to Accelerate Development of New Mental Health Treatments. American College of Neuropsychopharmacology Annual Meeting. Phoenix, AZ, 2022.

4. **Widge AS.** Closed Loop Approaches to Psychiatric DBS: From Diagnoses to Cognitive Domains (Symposium Speaker and Chair). Neural Interfaces Conference/North American Neuromodulation Society Conference, 2021. [Virtual meeting due to COVID.]

5. **Widge AS.** Controlling Oscillatory Brain Networks to Treat Psychiatric Illness (Symposium Speaker). Psychiatric Research Society; Park City, UT, 2021.

6. **Widge AS**. Cross-Species and Closed-Loop Enhancement of Cognitive Control (Symposium Speaker and Panel Chair). American College of Neuropsychopharmacology Annual Meeting, 2020. [Virtual meeting due to COVID.]

7. **Widge AS.** Controlling Brain Networks Through Oscillatory Synchrony (Symposium Speaker). Society for Biological Psychiatry Annual Meeting; Philadelphia, PA, 2020. [Accepted; meeting cancelled by COVID].

8. **Widge AS**. Transdiagnostic Mechanisms and Targets of Brain Stimulation: Case Studies in Inflexibility (Symposium Speaker). Psychiatric Research Society; Park City, UT, 2020.

9. Etkin AE, Sohal VS, **Widge AS**. Communicating Through Brains (Symposium Speaker and Chair). American Psychiatric Association Annual Meeting; San Francisco, CA, 2019.

10. **Widge AS**. Recording and Disrupting Cortical-Striatal Hyperconnectivity in OCD (Symposium Speaker and Chair). Society for Biological Psychiatry Annual Meeting; Chicago, IL, 2019.

11. **Widge AS**. Striatal Deep Brain Stimulation for Mood and Anxiety Disorders (Symposium Speaker). International Society for Affective Disorders; Houston, TX, 2018.

12. **Widge AS**. Electroencephalographic Biomarkers of Treatment Response in Depression (Symposium Speaker). American Psychiatric Association Annual Meeting; New York, NY, 2018.

13. **Widge AS**. Hacking the Mind: Autonomy and Privacy Concerns from Psychiatric Brain-Computer Interfaces (Symposium Speaker). American Society for Bioethics and Humanities Meeting; Kansas City, KS, 2017.

14. **Widge AS**. Modulating Cognitive Control Networks with Deep Brain Stimulation (Symposium Speaker). Society for Biological Psychiatry Annual Meeting; San Diego, CA, 2017.

15. **Widge AS**. Closed Loop Deep Brain Stimulation for Depression: Diagnostics, Devices, and Algorithms (Symposium Speaker). Neural Interfaces Conference; Baltimore, MD, 2016.

16. **Widge AS**. TRANSFORM DBS: Neural Modeling and Network Decoding (Symposium Speaker). Anxiety & Depression Association of America Annual Meeting; Philadelphia, PA, 2016.

17. **Widge AS, Dougherty DD.** Neurosurgical Interventions for Intractable OCD (Symposium Speaker). Anxiety & Depression Association of America Annual Meeting; Chicago, IL, 2014.

18. **Widge AS**. Health Care Trends Worth Watching (Symposium Speaker). American Medical Association Interim Meeting; Dallas, TX, 2014.

19. **Widge AS**. Changes in Psychiatric Education: The Psychiatry Milestones and the Next Accreditation System of the ACGME (Symposium Speaker). American Psychiatric Association Annual Meeting; San Francisco, CA, 2013.

20. **Widge AS**. DSM-5 for the Member-in-Training (Symposium Speaker). American Psychiatric Association Annual Meeting; San Francisco, CA, 2013.

21. **Widge AS**. The Path to Lifetime Achievement: The Role of the APA in Career Success Stories (Panelist). American Psychiatric Association Annual Meeting; San Francisco, CA, 2013.

Poster Abstract Presentations at Professional Meetings, Conferences, etc. (Prior 3 Years Only)

1. Woods VM, Whear JH, Lund AN, Nagrale SS, Shin U, Shoaran M, **Widge AS.** Real-Time Phase-Locked Stimulation Systems for Network-Based Conditions. 2022 Society for Neuroscience Annual Meeting; 2022 Nov 12; San Diego, CA.

2. Dastin-van Rijn EM, Alpers A, Sachse E, Wald A, Reimer A, Song E, Widge AS. Rodents solve an extradimensional set-shifting task by forgetful, adaptive reinforcement learning. 2022 Society for Neuroscience Annual Meeting; 2022 Nov 12; San Diego, CA

3. Iacobucci FA, Cooper DC, Dastin-van Rjin EM, **Widge AS**. DBS disrupts reinforcement-based decision making in rats. 2022 Society for Neuroscience Annual Meeting; 2022 Nov 12; San Diego, CA.

4. Drahos K, Younk RL, Yadav S, Nagrale S, **Widge AS**. State dependence of connectivity alterations from closed loop phase locked stimulation. 2022 Society for Neuroscience Annual Meeting; 2022 Nov 12; San Diego, CA.
5. Song, E, Alpers, A, Warner, K, Rijn, ED, Singh, K, Sachse, E, Hoskins, E, & **Widge, AS**. Neurophysiology of the prefrontal-striatal circuitry during extradimensional Set-shifting in rats. 2022 Society for Neuroscience Annual Meeting; 2022 Nov 12; San Diego, CA.

6. McInnes, AN, Albott, CS, Camsari, GB, Cooper, DC, Herman, AB, Nahas, Z, Olsen, ST, Sullivan, CRP, Wilson, SR, **Widge, AS**. Inefficient decision-making processes predict non-response to TMS for depression. 2022 Society for Neuroscience Annual Meeting; 2022 Nov 12; San Diego, CA.

7. Nelson JN, **Widge AS**, Netoff TI. Online Estimation of Impulse Response Functions for Desynchronization of Pathological Neural Rhythms. 2022 Society for Neuroscience Annual Meeting; 2022 Nov 12; San Diego, CA

8. Singh K, Hoskins E, Dastin-van Rjin E, Reimer AE, **Widge AS**. Effects of Striatal DBS on the Trial-Irrelevant Activity in the Extradimensional Set Shifting Task. 2022 Society for Neuroscience Annual Meeting; 2022 Nov 12; San Diego, CA.

9. Younk, R.; **Widge, AS**. Quantifying defensive behavior and threat response through integrated headstage accelerometry. 2022 Society for Neuroscience Annual Meeting; 2022 Nov 12; San Diego, CA.

10. Titus DJ, Li C, Drahos K, Olson SJ, Nagrale SS, **Widge AS**. Pre-frontal Cortex and Amygdala Interactions during approach and avoidance task. 2022 Society for Neuroscience Annual Meeting; 2022 Nov 12; San Diego, CA.

11. Younk R, Titus DJ, Nagrale S, Drahos K, Lo M-C, **Widge A**. Alteration of state dependent brain connectivity using a closed loop stimulation method in a fear regulation circuit. 2021 Society for Neuroscience Annual Meeting; 2021 Nov 10; Chicago, IL.

12. Weiss C, Song E, Oh MM, Lurie SM, Schatza MJ, Galvez A, **Widge AS**, Voss JL, Disterhoft JF. Rats learn multiple sets of visual discriminations during paired associate learning. 2021 Society for Neuroscience Annual Meeting; 2021 Nov 10; Chicago, IL.

13. Wald AJ, Reimer AE, Alpers A, Cooper DC, Hoskins E, Singh K, Warner K, **Widge AS**. Behavioral effects of mid-striatum deep brain stimulation reflect cognitive flexibility, not impulsivity. 2021 Society for Neuroscience Annual Meeting; 2021 Nov 10; Chicago, IL.

14. Song E, Alpers A, Warner K, Schatza MJ, Weiss C, Wirtshafter HS, Disterhoft JF, Voss JL, **Widge AS**. Effects of closed-loop phase-locked stimulation on cortico-hippocampal connectivity in rats. 2021 Society for Neuroscience Annual Meeting; 2021 Nov 10; Chicago, IL.

15. Schatza M, Blackwood EB, Nagrale S, **Widge A**. Toolkit for Oscillatory Real-time Tracking and Estimation (TORTE). 2021 Society for Neuroscience Annual Meeting; 2021 Nov 10; Chicago, IL.

16. Ross A, Farnes K, Paulk AC, **Widge AS**, Cash SS, Torres-Reveron JE, Basu I. Neural mass model based study of frontal-temporal theta oscillations in human subjects during the performance of a cognitive control task. 2021 Society for Neuroscience Annual Meeting; 2021 Nov 9; Chicago, IL.

17. Olson SJ, Patel V, Wald AJ, Nagrale SS, Titus DJ, **Widge AS**. Establishing an avoidance task to study pre-frontal cortex and amygdala interactions. 2021 Society for Neuroscience Annual Meeting; 2021 Nov 10; Chicago, IL.

18. Olsen ST, Sullivan CRP, Cooper DC, Wilson S, Sonmez AI, Albott CS, Olson SC, Nahas Z, Peterson CB, Rittberg BR, Herman AB, **Widge AS**. Neurocognitive biomarkers of TMS response: Modeling the trajectories of change in cognitive control in response to TMS for depression. 2021 Society for Neuroscience Annual Meeting; 2021 Nov 11; Chicago, IL.

19. Lurie SM, Kragel JE, Song E, Schatza MJ, Schuele SU, Disterhoft JF, **Widge AS**, Voss JL. Hippocampal potentials evoked by network-targeted stimulation vary by theta phase. 2021 Society for Neuroscience Annual Meeting; 2021 Nov 10; Chicago, IL.

20. Kragel JE, Lurie SM, Schatza MJ, Blackwood EB, Chung EA, Zelano C, Scheule SU, Disterhoft JF, **Widge AS**, Voss JL. Theta synchronized stimulation increases hippocampal excitability in humans. 2021 Society for Neuroscience Annual Meeting; 2021 Nov 10; Chicago, IL.

21. Cooper DC, Reimer AE, **Widge AS**. Frequency-dependent behavioral effects of mid-striatum deep brain stimulation on cognitive flexibility. 2021 Society for Neuroscience Annual Meeting; 2021 Nov 10; Chicago, IL.

22. Alpers A, Song E, Warner K, Weiss C, Disterhoft JF, Voss JL, **Widge AS**. Functional connectivity between the temporal association cortical area 2 and the hippocampus in rats. 2021 Society for Neuroscience Annual Meeting; 2021 Nov 10; Chicago, IL.

TEACHING AND CURRICULUM DEVELOPMENT

University of Minnesota

Course/Lecture List

MSTP Longitudinal Clinical Experience (Clinical teaching of MD/PhD students, 4 hours weekly)	2021-2023
Psychiatry Clerkship (Clinical teaching of medical students, 1-5 hours weekly	2019-2021
Deep Brain Stimulation for Mental Disorders (Addictions Neuroscience, 1.5 hours in-class)	2022-2023
Deep Brain Stimulation for Psychiatric Illness (Neuroscience & Society, 1.5 hours in-class)	2019-2023
Deep Brain Stimulation for Mood & Anxiety Disorders (Neural Engineering, 1.5 hours in-class)	2019-2023
Neuroethics and Deep Brain Stimulation (Law & Neuroscience, 1 hour in-class)	2019

Massachusetts Institute of Technology

Course/Lecture List

Neurotechnology in Action (9.123, 1 hour lecture plus lab instruction)	2018
Systems Neuroscience (9.011, 3 hours lecture plus office hours)	2015

Massachusetts General Hospital

Course/Lecture List

Deep Brain Stimulation and Vagus Nerve Stimulation (1 hour lecture)	2015-2018

Dartmouth College

Course/Lecture List

"Neural Interfaces: Bridging Mind and Machine". 1 hour undergraduate lecture, annually 2002-2021 with 3-4 skips.

ADVISING AND MENTORING

University of Minnesota

Undergraduate Student Activities

Undergraduate research projects (UROPS, directed research, lab participation, etc.)

Amber Lund (directed research)	2022 – 2024
Ammar Dameh (directed research)	2021 – 2023
Amanda Ichel (directed research)	2021 – 2024
Heather Breidenbach (directed research)	2021 – 2024
Karson Scherer (directed research)	2021 – 2023
Praveer Arora (directed research)	2021 – 2023
rae McCollum (directed research)	2021 – 2023
Shammy Jha (directed research)	2021 – 2023
Tina Li (directed research)	2021 – 2024
Vrunsi Patel (directed research)	2021 – 2023
Shreya Yadav (directed research)	2021 – 2023
Jessica Valiarovski (directed research, UROP)	2021 – 2022
Eric Hoskins (directed research, then paid lab staff)	2021 – 2024
Kartik Singh (directed research)	2021 – 2023
Kenzie Drahos (directed research, then paid staff)	2021 – 2022
Kasey Warner (directed research)	2020 – 2021
Nicholas Anderson (directed research)	2020 – 2021
Anya Prasad (directed research)	2020 – 2021
Amanda Averbeck (research volunteer)	2019 – 2020
Dawson Cooper (directed research, lab staff member)	2019 – 2022
Noah Hjelle (research volunteer)	2019 – 2020
Christian Ishag (research volunteer)	2019 – 2020
Sonia Olson (directed research)	2019 – 2021
Natali Sorajja (research volunteer)	2019 – 2020
Nathaniel Stephenson (directed research)	2019 – 2021

Graduate Student Activities

Doctoral Students Advised

Nic Glewwe, Neuroscience (co-advised Nicola Grissom)	2023-present
Spencer Eiting, BME (co-advised Tay Netoff)	2022-present
Sumedh Nagrale, BME	2022-present
Joseph Nelson, BME (co-advised Tay Netoff)	2021-2023
Evan Dastin-van Rijn, BME	2021-present
Elizabeth Sachse, Neuroscience	2021-present

Doctoral Committees Served on

Kate Dembny, BME	2023-present
Karianne Sretavan Wong, Neuroscience (chair)	2023-present
Blair Vail, Neuroscience	2022-present
Adrine Kocharian, Neuroscience	2021-present
Sydney Hillan, Biomedical Engineering (Mayo)	2020-present
Scott Stanslaski, Biomedical Engineering	2019-present

Post-doctoral fellows supervised

Jeremy Chaikind, MD (clinical fellow)	2023 – 2024
Nicholas Arnoudse, MD (clinical fellow)	2022 – 2023
Leah Davis (significant medical complications)	2022 – 2023
Koushik Bakshi (returned to India to care for family)	2022 – 2023
Aaron McInnes	2021 – present
Camille Merhi, MD (clinical fellow)	2021 – 2022
Virginia Woods (staff scientist; took industry role)	2021 – 2023
Saydra Wilson, MD (clinical fellow/researcher; hired as faculty)	2020 – 2021
Eric Song (staff scientist; left for junior faculty position in Florida)	2020 – 2024
David Titus Adaikkalasamy (staff scientist; left to next staff scientist role)	2020 – 2024
Sarah Olsen (left academia for full-time parenting)	2019 – 2023
Flavio da Silva (next step: industry)	2018 – 2020
Adriano Reimer (next step: junior faculty, Brazil)	2017 – 2021
Meng-Chen "Jean" Lo (next step: clinical education, nursing)	2015 – 2019

Research Assistants Supervised

Michelle Buccini	2023 – present
Victoria Pipia	2023 – present
Benito Garcia	2023 – present
Serena Miller	2023 – present
Catherine Boisjolie	2022 – 2023
Jazlin Suraya Putri Talor (next step: ECE masters program)	2022 – 2023
Megan Mensinger (next step: MD-PhD program)	2022 – 2024
Francesca Iaccobucci (next step: Doctoral student, U of Minnesota)	2022 – 2023
Paisley Buchanan	2022 – present
Jonathan Whear (next step: medical school, U of Minnesota)	2021 – 2022
Dawson Cooper (next step: medical school, U of Minnesota)	2021 – 2022
Abigail Alpers (next step: Doctoral student, U of Rochester)	2020 – 2022
Sumedh Nagrale (next step: BME PhD, U of Minnesota)	2019 – 2022
Christi Sullivan	2019 – present
Aaron Wald (next step: independent data scientist)	2019 – 2022
Mark Schatza (next step: Chief scientist, Inspire Medical)	2018 – 2021
Gregory Simandl (next step: Doctoral student, Marquette University)	2018 – 2019
Rebecca Younk (next step: Doctoral student, U of Minnesota)	2018 – 2022
Ethan Blackwood (next step: Doctoral student, U of Pennsylvania)	2018 – 2019

Visiting Scholars Hosted

Mahsa Shoaran, Cornell University	March 2019

Massachusetts General Hospital
Graduate Student Activities

Master's Student Advisees

Nicole Provenza, "Decoding task states from distributed local field potential recordings"	2015 – 2017

Professional Student Activities

Ernesto Licon, medical student (summer research supervisor)	2014

Post-doctoral fellows supervised

M. Taha Bilge (next step: Industry)	2017 – 2019
Ali Yousefi (next step: Assistant Professor, Worcester Polytechnic Institute)	2015 – 2019
Ishita Basu (next step: Assistant Professor, University of Cincinnati)	2015 – 2020
Lisa Maeng (next step: Assistant Professor, U of Massachusetts - Boston)	2015 – 2018

Research assistant supervision and training

Emily Hahn (next step: Northwestern Neuroscience PhD)	2017 – 2019
Aishwarya Gosai (next step: U of Southern California clinical psychology PhD)	2016 – 2019
Alexander Rockhill (next step: PhD student, University of Oregon)	2017 – 2019
Andrew Mullen (next step: MD/PhD program, University of Washington)	2015 – 2018
Matthew Boggess (next step: Stanford Data Science masters)	2016 – 2018
Samuel Zorowitz (next step: Princeton Neuroscience PhD, NSF Graduate Fellow)	2014 – 2017
Amanda Arulpragasam (next step: Emory Psychology PhD, NSF Graduate Fellow)	2013 – 2015
Andrew Corse (next step: medical school, University of Vermont)	2013 – 2015

CLINICAL SERVICE

Clinical Service Responsibilities

Interventional Psychiatry (DBS, TMS, VNS)	University of Minnesota Minneapolis, MN	1 half day/wk	12/2018 - present
On-Call Psychiatry	Walden Behavioral Care Waltham, MA	6 hours/month	11/2017 – 01/2018
On-Call Psychiatry	Lowell Treatment Center Lowell, MA	2 hours/month	02/2014 – 11/2017
On-Call Psychiatry	Bournewood Hospital Brookline, MA	2 hours/month	01/2014 – 02/2014
Psychiatry (focus on interventional, DBS)	Massachusetts General Hospital Charlestown, MA	0.25 days/wk	04/2014 – 08/2018

PROFESSIONAL SERVICE AND PUBLIC OUTREACH

Service to the Discipline/Profession/Interdisciplinary Area(s)

Editorships/Journal Reviewer Experience

Special Issue Editor
NeuroImage (2020)

Ad Hoc Reviewer
Academic Medicine (2020-2023)
Academic Psychiatry (2014-2016,2023)
American Journal of Psychiatry (2019-2022)
Biological Psychiatry (2018-2022)
Biological Psychiatry: Cognitive Neuroscience & Neuro-Imaging (2016,2020-2023)
Brain-Computer Interfaces (2014-2016,2019)
Brain Sciences (2016)
Brain Stimulation (2016-2023)
Depression & Anxiety (2016)
Experimental Neurology (2015; “Recognized Reviewer”)
Frontiers in Neuroscience (2015-2021)

IEEE Transactions on Neural Systems & Rehabilitation Engineering (2021)
JAMA Psychiatry (2018-2020)
Journal of Affective Disorders (2014)
Journal of Biomedical Materials Research (2015)
Journal of Clinical Psychiatry (2019)
Journal of Graduate Medical Education (2014; "GME Focus" summarizer)
Journal of Neural Engineering (2016-2023)
Journal of Neurophysiology (2015-2019)
Journal of Neuroscience (2014)
Journal of Neuroscience Methods (2023)
Journal of Psychiatric Research (2015)
Lancet Psychiatry (2019)
Molecular Psychiatry (2021)
Nature Communications (2022-2023)
Nature Medicine (2019-2020)
Neural Computation (2016)
NeuroCase (2016)
Neuron (2018-2019)
Neuropsychopharmacology (2017, 2019-2021,2023)
Personalized Medicine in Psychiatry (2016-2019)
PLOS One (2017-2019)
Science Advances (2018)
Science Translational Medicine (2021)
Scientific Reports (2015,2023)
Translational Psychiatry (2017-2019,2023)

Review panels for external funding agencies, foundations, etc.

National Institutes of Health	NSD-C Review Panel (ad hoc)	2021-2023
DOD Congressionally Directed Medical Research Program	Eating Disorders & Nutrition Review Panel	2020
National Institutes of Health	BNVT Study Section (ad hoc)	2019-2020
National Institutes of Health	NPAS Study Section (ad hoc)	2019-2020
National Institutes of Health	ETTN Special Emphasis Panels (ad hoc)	2019-2023
European Science Foundation	Reviewer, early-career fellowships	2019
Chilean National Commission for Science and Technology	Scientific Reviewer	2018-2019
National Institutes of Health	Special Emphasis Panel ZNS1 SRB-M, F32/K22 Awards (ad hoc x4)	2017-2019
American Society for Engineering Education	National Defense Science & Engineering Graduate Fellowship Review Committee	2017-2018
National Science Foundation	Graduate Research Fellowship Program Review Committee (panelist member)	2014-2019
Romanian National Council for Scientific Research	Junior Investigator Grant Reviews Committee (ad hoc)	2012
University of Washington Housestaff Association	Research Grants Review Committee	2011-2012
American Medical Association Foundation	Scholarship/award committee (ad hoc)	2006-2007

Program review experience

Michigan State University / PennState University	Scientific advisory board for NIH-funded neuro-ethics grant	2018-2022

Organization of conferences, workshops, panels, symposia

American College of Neuropsychopharmacology Annual Meeting	Symposium: "Fostering Translational Research and Academic / Industry Collaboration to Accelerate Development of New Mental Health Treatments" (co-chair and speaker)	2022
Minnesota Neuromodulation Symposium	Conference co-chair and panel chair	2022
Neural Interfaces Conference	Symposium: "Advanced Intracranial Electrophysiology for Studying Neuropsychiatric Disorders" (cchair and speaker)	2021
American College of Neuropsychopharmacology	Annual Meeting Symposium: "Translational Models of Deep Brain Stimulation: New Approaches to Circuits of Reward, Motivation, Habit, and Impulse" (chair and speaker)	2020
Society of Biological Psychiatry	Annual Meeting Program Committee (review of proposed panels, posters, plenaries)	2020-2024
American College of Neuropsychopharmacology	Annual Meeting Symposium: "Modeling and Dissection of Decision-Making Deficits Across Mood, Anxiety, Substance, and Psychotic Disorders" (co-chair)	2019
Society for Neuroscience	Annual Meeting Minisymposium: "Timing is Everything: Temporally Irregular Brain Stimulation" (chair and speaker)	2019
Society of Biological Psychiatry	Annual Meeting Symposium: "Modeling, Dissecting, and Controlling Circuits of Perseverative Behavior" (chair and speaker)	2019
Minnesota Neuromodulation Symposium	Program Committee (identifying and inviting speakers)	2018-2019, 2021
Society of Biological Psychiatry	Annual Meeting Program Committee (review of proposed panels, posters, plenaries)	2015-2018

Committee memberships

American College of Neuropsychopharmacology	Liaison Committee (interactions with industry and Federal government) Co-chair in 2022; chair in 2023	2019-present
American Psychiatric Association	Working Group on Clinical Decision Support Systems	2016-2017
American Psychiatric Association	Council on Research	2015-present
American Psychiatric Association	Task Force on Biomarkers and Novel Treatments	2015-present

Accreditation Commission for Graduate Medical Education	Psychiatry Milestones Working Group	2012-2014
Accreditation Commission for Graduate Medical Education	Psychiatry Residency Review Committee	2011-2013
Association of American Medical Colleges	Electronic Residency Application System Advisory Committee	2001-2003

Public Advocacy

Service on advocacy and lobbying related committees:

Minnesota Medical Association	Ethics Committee	2021-present
Massachusetts Medical Society	Legislative Committee	2015-2018
Washington State Psychiatric Association	Executive Council	2010-2013
Pennsylvania Medical Society	Patient Advocacy Executive Council	2007-2009
American Medical Association	Board of Directors, American Medical Political Action Committee	2002-2004
Pennsylvania Medical Society	Board of Directors, Pennsylvania Medical Political Action Committee	2001-2003
National Association of Graduate-Professional Students	Legislative Director	2002-2004

Service to the University/Medical School/Department

University of Minnesota

University Service

McKnight Land-Grant Professorships Review Committee	2021-2023

Department/Unit Service

Medical Scientist Training Program Steering Committee	2021-present
Interviewing for Graduate Program in Neuroscience	2020-present
Interviewing for Biomedical Engineering graduate program	2020-present
MnDRIVE Neuromodulation Fellowships Review Committee	2020-present
Psychiatry & Behavioral Sciences Grand Rounds Committee	2019-present
Psychiatry & Behavioral Sciences Awards Committee	2019-present
Medical Discovery Team – Addictions Insights Committee	2018-present

Massachusetts General Hospital/Harvard Medical School

Department/Unit Services

Psychiatric Neurosurgery Committee	2014-2018

University of Washington

Department/Unit Service

Graduate Medical Education Committee	2012-2013
Psychiatry Residency Education Steering Committee	2009-2013

Community Outreach Activities

Dana Foundation/Secret Science Club: Brain Stimulation & Mental Health	2022
Re-Engineering Brain Networks of Mental Illness (TEDxMinneapolis)	2021
Engineering Brain Circuits to Treat Mental Illness (UMN Headliners outreach presentation)	2021
Minnesota Department of Health Advisory Commission on Medical Cannabis for Anxiety	2021
Board Member, OCD Twin Cities (patient outreach, advisory service)	2020-present
What's On Your Mind: Addiction (outreach presentation for U of MN Foundation)	2020
Engineering Brain Circuits to Treat Mental Disorders (patient education at NAMI Research Dinner)	2020
Depression in Parkinson Disease (patient education talk, Coon Rapids, MN)	2020
"Ask the Experts" panel on Obsessive-Compulsive and Anxiety Disorders, St. Paul, MN	2019
Staffing of MnDRIVE outreach booth at Minnesota State Fair	2018-2019
Depression in Parkinson Disease (patient education talk for Udall Center)	2019
Constant Craving: Neuroscience of Addictions (UMN Learning Life course)	2019
Novel Treatments for Obsessive-Compulsive Disorder (patient education seminar)	2019
Propel Pittsburgh Commission (mayoral appointment; city planning group)	2007-2009