

## **Curriculum Vitae**

### **Mascha van 't Wout-Frank**

Department of Psychiatry and Human Behavior, Brown University  
COBRE Center for Neuromodulation, Butler Hospital  
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### **Education (chronological order)**

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September 1996 – September 2001

*Master of Science*, Utrecht University, the Netherlands, Clinical neuropsychology. *Thesis topic*: Reality monitoring in hallucinating and non-hallucinating patients with schizophrenia

March 2002 – June 2006

*Doctor of Philosophy (PhD)* graduate degree, Psychological Laboratory, University Utrecht, in collaboration with the Department of Psychiatry, University Medical Center Utrecht, the Netherlands. *Thesis title*: The nature of emotional abnormalities in schizophrenia: Evidence from patients and high-risk individuals.

*Supervisors*: Prof. Dr. E.H.F. de Haan, MD. Prof. Dr. R.S. Kahn, Prof. Dr. A. Aleman, Prof. Dr. R.P.C. Kessels

### **Post graduate training (chronological order)**

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August 2006 – December 2008

*Postdoctoral Research Fellow* at Neural Decision Science Laboratory, Department of Psychology, University of Arizona, Tucson. Fellowship focused on human decision-making and neuroimaging and was supported by a Rubicon grant from the Netherlands Organization for Scientific Research (NWO).

January 2009 – June 2011

*Postdoctoral Research Associate* at Department of Cognitive, Linguistic and Psychological Sciences and in collaboration with Department of Psychiatry and Human Behavior, Brown University, Providence. Research focus on decision-making in obsessive compulsive disorder.

### **Work experience (chronological order)**

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January 2011 – 2012

*Adjunct faculty* at the Rhode Island School of Design, Providence.

July 2011 – July 2012

*Assistant Professor (Research)* in the Department of Cognitive, Linguistic and Psychological Sciences, Brown University, Providence.

July 2012 – June 2020

*Assistant Professor (Research)* in the Department of Psychiatry and Human Behavior, Warren Alpert Medical School of Brown University, Providence.

July 2020 –

*Associate Professor (Research)* in the Department of Psychiatry and Human Behavior, Warren Alpert Medical School of Brown University, Providence.

### **Grants (completed and current)**

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- Rubicon Award 08/01/06 – 12/31/08  
 Netherlands Organization for Scientific Research (NWO)  
 “Gut feelings, split second decisions and unfairness; the role of emotions in decision-making”  
 Role: PI
- Young Investigator Award 07/15/11 – 01/14/15  
 NARSAD  
 "Effects of Direct Current Stimulation of the vmPFC on Fear Extinction and Recall: Implications for Obsessive Compulsive Disorder"  
 The goal of this project is to examine whether the noninvasive technology of transcranial Direct Current Stimulation (tDCS) can modulate and improve extinction recall which is central to the clinical usefulness of exposure-based behavioral therapies for OCD and related illnesses.  
 Role: PI
- CfNN Seed funding 01/10/13 – 06/30/16  
 VA RR&D Center for Neurorestoration and Neurotechnology (N2864-C)  
 “Pilot Study of transcranial Direct Current Stimulation for PTSD”  
 The goal of this project is to examine whether tDCS can modulate and improve fear extinction learning and subsequent extinction recall in Veterans with warzone-related PTSD. This is central to the clinical usefulness of exposure-based behavioral therapies for PTSD.  
 Role: PI
- CfNN Seed funding 04/01/14 – 03/30/16  
 VA RR&D Center for Neurorestoration and Neurotechnology (N2864-C)  
 “Transcranial Direct Current Stimulation-Augmentation of Virtual Reality Exposure for PTSD: A Feasibility Pilot Study”  
 This pilot study explores preliminary feasibility and efficacy of virtual reality exposure therapy augmented with tDCS.  
 Role: PI
- CfNN Seed funding (PI: Philip) 05/10/14 – 05/11/16  
 VA RR&D Center for Neurorestoration and Neurotechnology (N2864-C)  
 “Pilot Testing of Theta-Burst Neuromodulation for Chronic PTSD”  
 This pilot study explores preliminary feasibility and efficacy Theta-burst Transcranial Magnetic Stimulation (TBS) for treatment of PTSD in Veterans.  
 Role: Co-PI
- SPiRE, I21RX002032-01 (PI: Philip) 04/01/16 – 03/31/18  
 US Dept. of Veterans Affairs, RR&D  
 “Pilot testing of theta-burst neuromodulation for chronic PTSD”  
 This pilot study explores preliminary feasibility and efficacy Theta-burst Transcranial Magnetic Stimulation (TBS) for treatment of PTSD in Veterans.  
 Role: Co-I
- New Frontiers Award (MPI: van 't Wout & Burwell) 05/01/17 – 04/30/19  
 Brown Institute for Brain Science – Norman Prince Neuroscience Institute  
 "Learning not to avoid: a translational approach with implications for anxiety disorders"  
 The goal of this translational project is to evaluate whether inhibition of the dorsolateral prefrontal cortex can improve generalization of extinction of avoidance behaviors.

Role: PI

Merit Award, 1I01RX002450-01A2 (PI: Philip) 04/01/18 – 03/31/23  
 US Dept. of Veterans Affairs, RR&D  
 “Combined Transcranial Direct Current Stimulation and Virtual Reality for PTSD”  
 This Merit Award project involves a randomized, sham-controlled study of transcranial direct current stimulation in combination with virtual-reality based exposure therapy, to determine if this combination may reduce PTSD symptoms and improve quality of life.  
 Role: Co-I

Innovation Voucher (PI: Philip) 03/01/18 – 10/31/19  
 Rhode Island Commerce Corporation  
 “Closed-Loop Noninvasive Brain Stimulation for Posttraumatic Stress Disorder”  
 This early phase project aims to collect psychophysiological data to create an electronic device with an intelligent control algorithm that can apply patient-specific, appropriate tDCS dose for the treatment of fear-related responses in PTSD in an individualized manner.  
 Role: Co-I

STTR, F17B-002-0017 (MPI: Sepe/Philip) 03/01/18 – 12/1/18  
 US Dept. of Defense, Air Force  
 “Closed-Loop Feedback Control for Transcranial Direct Current Stimulation”  
 In collaboration with Electro Standards Laboratories (Cranston, RI), this early phase project aims to collect psychophysiological data to create an electronic device develop closed loop transcranial direct current stimulation for cognitive enhancement.  
 Role: Co-I

COBRE Center for Neuromodulation, 1P20GM130452-04 (PI: Greenberg) 03/01/19-01/31/24  
 NIH, National Institute of General Medical Sciences  
 “Effect of tDCS timing on safety memory in PTSD”  
 This COBRE study will use a well-established fear-conditioning paradigm to systematically test the effects of timing of transcranial direct current stimulation intended to facilitate VMPFC function on extinction memory in individuals with PTSD.  
 Role: Project Leader

CfNN Seed funding 01/12/21 – 01/11/22  
 VA RR&D Center for Neurorestoration and Neurotechnology (N2864-C)  
 “Pilot Testing of Mindfulness-tDCS to Prevent PTSD in First Responders” (21-S-002)  
 The goal of this project is to pilot whether tDCS combined with mindfulness can reduce the likelihood that first responders, with a focus on firefighters, develop worse symptoms of PTSD. This is vital as current preventative interventions for PTSD mostly focus on adapting existing treatments of PTSD as opposed to targeting neural circuits implicated in vulnerability and development of PTSD.  
 Role: PI

U01 Research Project – Cooperative Agreement, 1U01MH123427-01A1 (PI: Philip) 06/01/21-03/31/25  
 NIH, National Institute of Mental Health  
 “Low intensity focused ultrasound: a new paradigm for depression and anxiety”  
 This project aims to use low-intensity focused ultrasound to modulate the amygdala for depression.  
 Role: Co-I

### **Additional education and skills**

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- Programming in E-prime, Psychological Laboratory, Utrecht, 2002.
  - Psychophysiological measures: Skin conductance measurement, Psychological Laboratory, Utrecht, 2003.
  - Repetitive Transcranial Magnetic Stimulation, University Medical Center Utrecht, Utrecht, 2004.
  - Neuropsychological test administration (incl. WAIS; CAMCOG), GGZ Meerkanten, Ermelo, 2000-2002.

- Psychiatric screening and diagnostic interviews (CASH; PANSS; MINI; SCID; CAPS), University Medical Center Utrecht; Alpert Brown Medical School, 2005-2018.
- MRI Training, including development of sequences, independent scanner operation, and Brain Voyager for fMRI analyses. University of Arizona, 2007.
- Sheridan Teaching Seminar Certificate I program. Brown University, 2009-2010.
- Application and safety requirements for transcranial Direct Current Stimulation. Alpert Brown Medical School, 2012.
- Virtual Reality-based Exposure Therapy (VRET) for PTSD. Bravemind, Providence VA Medical Center, 2015.
- NeuroElectrics StarStim training and demonstration. Brown University, 2015.
- Transcranial ultrasound training by Philips. Providence VA Medical Center, 2018
- Programming in R. Alpert Brown Medical School, Spring 2019

### **Professional memberships, Service & Synergistic activities**

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2007-10	Member, Cognitive Neuroscience Society
2007-08	Member, Society of Judgment and Decision-making
2007-	Member, Association for Psychological Science
2009-11	Member of the Postdoctoral Advisory Panel, Brown University
2010-13	Member, Society for NeuroEconomics
2011	Ad Hoc reviewer for National Science Foundation (NSF)
2012	Ad Hoc reviewer for French National Research Agency (ANR)
2015-16	Ad Hoc reviewer for Oesterreichische Nationalbank Anniversary Fund
2017-	Member, Society of Biological Psychiatry. Roles within the society: Career Development Roundtable Leader (2021, 2022), Mentor (2021), Program Committee (2022).
2017; 2023	Task Force member in the Group on Women in Medicine and Science (GWIMS), affiliated with the Association of American Medical Colleges to develop resource on "Caretaking in Academic Medicine: From pregnancy through early parenting." Updated January 23, 2023
2017-21	Alternate Member, Brown University Institutional Review Board
2018-	Ad Hoc reviewer Department of Veteran Affairs Rehabilitation Research and Development Service Small Projects in Rehabilitation Research (RR&D SPiRE) Study Section, 08 & 01 RRDS
2019-	Editorial board member "Behavioral Neuroscience"
2021	Ad Hoc reviewer for The Israel Science Foundation
2021-	Associate Member (peer-elected), Psychiatric Research Society
2021-	Member, Brown University Institutional Review Board
2021-	Full Member, Society for Research in Psychopathology
2021	Scientist Reviewer for Department of Defense (DOD) Congressionally Directed Medical Research Programs (CDMRP)
2022	Ad hoc reviewer, United States-Israel Binational Science Foundation
2022	Scientist Reviewer for Department of Defense (DOD) Congressionally Directed Medical Research Programs (CDMRP)
2022-	Member, Brown University Diversity, Equity, Inclusion and Belonging committee
2022	Member Joint Task Force on Child Care at Brown University
2022-	Awards subcommittee member, Society for Research in Psychopathology Equity Diversity Inclusion
2022-	Scientist Reviewer for Department of Defense (DOD) Congressionally Directed Medical Research Programs (CDMRP)

### **Publications (peer-reviewed, chronological order)**

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1. van 't Wout, M., Aleman, A., Kessels, R.P.C., Larøi, F., Kahn, R.S. (2004). Emotional processing in a non-clinical psychosis-prone sample. *Schizophrenia Research*, 68: 271-281.
2. Aleman, A., van 't Wout, M. (2004). Subvocalization in auditory-verbal imagery: just a form of motor imagery? *Cognitive Processing*, 5: 228-231.

3. van 't Wout, M., Kahn, R.S., Sanfey, A.G., Aleman, A. (2005). rTMS over the right DLPFC affects decision-making strategy. *NeuroReport*, 16: 1849-1852.
4. van 't Wout, M., Aleman, A., Kessels, R.P.C., Kahn, R.S. (2006). Object location memory in schizophrenia: interference of symbolic threatening content. *Cognitive Neuropsychiatry*, 11:272-284.
5. van 't Wout, M., Kahn, R.S., Sanfey, A.G., Aleman, A. (2006). Affective state and decision-making in the Ultimatum Game. *Experimental Brain Research*, 169:564-568.
6. van 't Wout, M., Aleman, A., Bermond, B., Kahn, R.S. (2007). No words for feelings: alexithymia in schizophrenia and first-degree relatives. *Comprehensive Psychiatry*, 48:27-33.
7. van 't Wout, M., Aleman, A., Kessels, R.P.C., Cahn, W., de Haan, E.H.F., Kahn, R.S. (2007). Exploring the nature of facial affect processing deficits in schizophrenia. *Psychiatry Research*, 150:227-235.
8. van 't Wout, M., van Dijke, A., Aleman, A., Kessels, R.P.C., Pijpers, W., Kahn, R.S. (2007). Fearful faces in schizophrenia: the relationship between patient characteristics and facial affect recognition. *Journal of Nervous and Mental Disease*, 195:758-764.
9. Aleman, A., van 't Wout, M. (2008). Repetitive TMS over the right dorsolateral prefrontal cortex disrupts span task performance. *Neuropsychobiology*, 57:44-48.
10. Baas, D., van 't Wout, M., Aleman, A., Kahn, R.S. (2008). Social judgment in clinically stable patients with schizophrenia and healthy relatives: behavioural evidence of social brain dysfunction. *Psychological Medicine*, 38:747-754.
11. van 't Wout, M., Sanfey, A.G. (2008). Friend or Foe: The effect of implicit trustworthiness judgments in social decision-making. *Cognition*, 108:796-803.
12. van 't Wout, M., van Rijn, S., Aleman, A., Jellema, T., Kahn, R.S. (2009). Deficits in implicit attention to social signals in the schizophrenia spectrum: behavioral evidence from a new illusion. *PLoS ONE*, 4(5): e5581. doi: 10.1371/journal.pos.0005581.
13. Jellema, T., Lorteije, J., van Rijn S., van 't Wout, M., De Haan, E. H. F., Van Engeland, H. & Kemner, C. (2009). Involuntary interpretation of social cues is compromised in autism spectrum disorders. *Autism Research*, 2:192–204. DOI: 10.1002/aur.83
14. van der Meer, L., van 't Wout, M., Aleman, A. (2009). Emotion regulation strategies in patients with schizophrenia. *Psychiatry Research*, 170:108-113
15. Chang, L.J., Doll, B., van 't Wout, M., Frank, M.J., Sanfey, A.G. (2010). Seeing is Believing: Trustworthiness as a dynamic belief. *Cognitive Psychology*, 61:87-105.
16. van 't Wout, M., Chang, L., Sanfey, A.G. (2010). The influence of emotion regulation on social interactive decision-making. *Emotion*, 10: 815-821.
17. van 't Wout, M., Sanfey, A.G. (2011). Interactive decision-making in people with schizotypal traits: a game theory approach. *Psychiatry Research*, 185: 92-96.
18. van Rijn, S., Aleman, A., van 't Wout, M., Sprong, M., Ziermans, T., Schothorst, P., van Engeland, H., Swaab, H. (2011). Affective dysfunctions in adolescents at risk for psychosis: Emotion awareness and social functioning. *Psychiatry Research*, 187: 100-105.
19. van 't Wout, M. (2011). Game theory and the brain: neural modulation and lesion studies as a tool to examine interpersonal decision-making. *Nervenheilkunde*, 30: 411-418. DOI: 10.1055/s-0038-1628371
20. Harlé, K.M., Chang, L.J., van 't Wout, M., Sanfey, A.G. (2012). The neural mechanisms of affect infusion in social economic decision-making: a mediating role of the anterior insula. *NeuroImage*, 61: 32-40.
21. Grecucci, A., Giorgetta, C., van 't Wout, M., Bonini, N., Sanfey, A. (2013). Reappraising the Ultimatum: an fMRI study of emotion regulation and decision-making. *Cerebral Cortex*, 23: 399-410.
22. Goldin, G., van 't Wout, M., Sloman, S. A., Evans, D.W., Greenberg, B.D., Rasmussen, S.A. (2013). Risk judgment in Obsessive–Compulsive Disorder: Testing a dual-systems account. *Journal of Obsessive-Compulsive and Related Disorders*, 2: 406-411.
23. van 't Wout, M., Faught, S., Menino, D. (2013). Does interoceptive awareness affect the ability to regulate unfair treatment by others? *Frontiers in Emotion Science*, 4.
24. Mariano, T.Y., van 't Wout, M., Jacobson, B.L., Garnaat, S.L., Kirschner, J.L., Rasmussen, S.A., Greenberg, B.D. (2015). Effects of Transcranial Direct Current Stimulation (tDCS) on Pain Distress Tolerance: A Preliminary Study. *Pain Medicine*, 16: 1580-1588. DOI: 10.1111/pme.12798
25. Mariano, T.Y., van 't Wout, M., Garnaat, S.L., Rasmussen, S.A., Greenberg, B.D. (2016). Transcranial Direct Current Stimulation (tDCS) Targeting Left Dorsolateral Prefrontal Cortex Modulates Task-Induced Acute Pain in Healthy Volunteers. *Pain Medicine*, 17(4), 737-745. DOI: 10.1093/pm/pnv042

26. van 't Wout, M., Mariano, T.Y., Garnaat, S.L., Reddy, M.K., Rasmussen, S.A., Greenberg, B.D. (2016). Can transcranial direct current stimulation augment extinction of conditioned fear? *Brain Stimulation*, 9: 529–536. DOI: 10.1016/j.brs.2016.03.004
27. Van Dijke, A., van 't Wout, M., Ford, J., Aleman, A. (2016). Disorder-specific deficits in facial affect labeling in schizophrenia, and borderline personality disorder. *PLoS ONE*. 11(6): e0154145. DOI: 10.1371/journal.pone.0154145
28. Sorgi, K.M., van 't Wout, M. (2016). The influence of cooperation and defection on social decision-making in depression: A study of the iterated prisoner's dilemma game. *Psychiatry Research*, 246: 512–519. DOI: 10.1016/j.psychres.2016.10.025
29. van 't Wout, M., Longo, S., Reddy, M.K., Philip, N.S., Greenberg, B.D. (2017). Transcranial direct current stimulation may modulate memory in posttraumatic stress disorder. *Brain and Behavior*, 7(5): e00681. DOI: 10.1002/brb3.681
30. van 't Wout, M., Spofford, C.M., Shea, M.T., Sevin, E., Unger, W.S. (2017). Psychophysiological arousal to non-ideographic Virtual Reality Combat scenes distinguishes Veterans with PTSD from those without. *Applied Psychophysiology and Biofeedback*, 42(3): 209-221. DOI: 10.1007/s1048
31. Ridout, S.J., Spofford, C.M., van 't Wout-Frank, M., Philip, N.S., Unger, W.S., Carpenter, L.L., Tyrka, A.R., Shea, M.T. (2017). Heart rate variability responses to a standardized virtual reality exposure in Veterans with PTSD. *Current Treatment Options in Psychiatry*, 4(3): 271-280. DOI: 10.1007/s40501-017-0118-9
32. van 't Wout, M., Silverman, H. (2017). Modulating what is and what could have been: The effect of transcranial direct current stimulation on the evaluation of attained and unattained decision outcomes. *Cognitive, Affective, and Behavioral Neuroscience*, 17(6): 1176–1185. DOI: 10.3758/s1341
33. Philip, N.S., Barredo, J., van 't Wout-Frank, M., Almeida, J., Tyrka, A.R., Price, L.H., Carpenter, L.L. (2018). Network Mechanisms of Clinical Response to Transcranial Magnetic Stimulation in Posttraumatic Stress Disorder and Major Depressive Disorder. *Biological Psychiatry*, 83(3): 263-272. DOI: 10.1016/j.biopsych.2017.07.
34. Abend, R., van 't Wout, M. (2018). Commentary: Augmentation of fear extinction by transcranial direct current stimulation (tDCS). *Frontiers in Behavioral Neuroscience*. DOI: 10.3389/fnbeh.2018.00121
35. Mariano, T.Y., Burgess, F.W., Bowker, M., Kirschner, J. van't Wout-Frank, M., Jones, R.N., Halladay, C.W., Stein, M., Greenberg, B.D. (2018). Transcranial Direct Current Stimulation for Affective Symptoms and Functioning in Chronic Low Back Pain: A Pilot Double-Blinded, Randomized, Placebo-Controlled Trial. *Pain Medicine*, pny188. DOI: 10.1093/pm/pny188.
36. Barredo, J., Aiken, E., van 't Wout-Frank, M., Greenberg, B.D., Carpenter, L.L., Philip, N.S. (2018). Network Functional Architecture and Aberrant Functional Connectivity in Posttraumatic Stress Disorder: A Clinical Application of Network Convergence. *Brain Connectivity*, 8(9):549-557.
37. van 't Wout-Frank, M., Shea, M.T., Larson, V.C., Greenberg, B.G., Philip, N.S. (2019). Combined Transcranial Direct Current Stimulation with Virtual Reality Exposure for Posttraumatic Stress Disorder: Feasibility and Pilot Results. *Brain Stimulation*, 12(1): 41-43. DOI:10.1016/j.brs.2018.09.011
38. Barredo, J., Aiken, E., van 't Wout-Frank, M., Greenberg, B.D., Carpenter, L.L., Philip, N.S. (2019). Neuroimaging Correlates of Suicidality in Decision-Making Circuits in Posttraumatic Stress Disorder. *Frontiers in Psychiatry, Neuroimaging and Stimulation*, 10: 44. DOI: 10.3389/fpsy.2019.00044.
39. Koek, R.J., Roach, J., Athanasiou, N., van 't Wout-Frank, M., Philip, N.S. (2019). Neuromodulatory treatments for post-traumatic stress disorder (PTSD). *Progress in Neuro-Psychopharmacology and Biological Psychiatry*, 92: 148-160. DOI: 10.1016/j.pnpbp.2019.01.004
40. Philip, N.S., Barredo, J., Aiken, E., Larson, V., Jones, R.N., Shea, M.T., Greenberg, B.D., van 't Wout-Frank, M. (2019). Theta Burst Transcranial Magnetic Stimulation for Posttraumatic Stress Disorder. *The American Journal of Psychiatry*, 176(11): 939-948. DOI: 10.1176/appi.ajp.2019.18101160
41. Petrosino, N. J., van't Wout-Frank, M., Aiken, E., Swearingen, H. R., Barredo, J., Zandvakili, A., & Philip, N. S. (2019). One-year clinical outcomes following theta burst stimulation for post-traumatic stress disorder. *Neuropsychopharmacology*, 45(6): 940-946. DOI: 10.1038/s41386-019-0584-4
42. Philip, N.S., Barredo, J., Aiken, E., Larson, V., Jones, R.N., Shea, M.T., Greenberg, B.D., Van't Wout-Frank, M. (2020). Informing Further Research in the Use of Brain Stimulation in Psychiatric Disorders: Response to Syed and Smith. *The American journal of psychiatry*, 177(5): 466-467. DOI: 10.1176/appi.ajp.2019.19101052r

43. van 't Wout-Frank, M., Aiken, E.M., Larson, V.C., Shea, M.T., Greenberg, B.D., Philip, N.S. (2020). A secondary analysis on effects of theta burst transcranial magnetic stimulation to reduce anger in veterans with posttraumatic stress disorder. *Neuromodulation: Technology at the Neural Interface*, 24(5): 870-878. DOI: 10.1111/ner.13256
44. van 't Wout-Frank, M., Philip, N.S. (2021). Simultaneous application of transcranial direct current stimulation during virtual reality exposure. *Journal of Visualized Experiments (JoVE)*; Neurostimulation techniques: Current methods and innovative approaches. DOI: 10.3791/61795
45. Faucher, C. R., Doherty, R. A., Philip, N. S., Harle, A. S. M., Cole, J. J. E., Van't Wout-Frank, M. (2021). Is there a neuroscience-based, mechanistic rationale for transcranial direct current stimulation as an adjunct treatment for posttraumatic stress disorder?. *Behavioral Neuroscience*, 135(6), 702-713. DOI: 10.1037/bne0000487.
46. Bozzay, M.L., Brigido, S., van 't Wout-Frank, M., Aiken, E., Swift, R., Philip, N.S. (2021). Safe use of intermittent theta burst stimulation in veterans with mild alcohol use disorder. *Journal of Affective Disorders*, 293: 314-319. DOI: 10.1016/j.jad.2021.06.039
47. Petrosino, N., Cosmo, C., Berlow, Y., Zandvakili, A., van 't Wout-Frank, M., Philip, N.S. (2021). Transcranial Magnetic Stimulation for Posttraumatic Stress Disorder: A Review of the Literature. *Therapeutic Advances in Psychopharmacology*, 11, 20451253211049921. DOI: 10.1177/20451253211049921.
48. Philip, N.S., Doherty, R.A., Faucher, C., Aiken, E., van 't Wout-Frank, M. (2021). Transcranial Magnetic Stimulation for Posttraumatic Stress Disorder and Major Depression: Comparing Commonly Used Clinical Protocols. *Journal of Traumatic Stress*, 35(1): 101-108 DOI: 10.1002/jts.22686
49. Cosmo, C, Aiken, E.M., van 't Wout-Frank, M., Philip, N.S. (2022). Heart Rate Variability Features as Predictors of Intermittent Theta-Burst Stimulation Response in Posttraumatic Stress Disorder. *Neuromodulation: Technology at the Neural Interface*, 25(4): 588-595. DOI: 10.1111/ner.13529
50. Arulpragasam, A.R., van 't Wout-Frank, M., Barredo, J., Faucher, C.R., Greenberg, B.D., Philip, N.S. (2022). Low intensity focused ultrasound for non-invasive and reversible deep brain neuromodulation: a paradigm shift in psychiatric research. *Frontiers in Psychiatry*, 112. DOI: 10.3389/fpsy.2022.825802

### Book chapters

1. van Rijn, S., van 't Wout, M., Spikman, J. Emotion and Social Cognition. Chapter in 'Clinical Neuropsychology' (Klinische Neuropsychologie) handbook Eds. Kessels, R., Eling, P., Ponds, R., Spikman, J., van Zandvoort, M. Reprint and translation in English, August 2017.
2. van 't Wout M., Leder J. (2018). Ultimatum Game. In: Zeigler-Hill V., Shackelford T. (eds) *Encyclopedia of Personality and Individual Differences*. Springer, Cham, DOI: 10.1007/978-3-319-28099-8\_880-1.
3. Eldaief, M., Mariano, T., van 't Wout-Frank, M. (2021). Neurostimulation therapies in neuropsychiatry. In *Neuropsychiatry and Behavioral Neurology: Principles and Practice*, David Silbersweig, Laura Safar, Kirk Daffner (Eds). McGraw-Hill Education.

### Teaching experience & Mentoring

#### Courses

- CLPS 1480A (formerly PSYCH 1820) 'Cognitive Neuroscience of Emotion', Brown University, Department of Cognitive, Linguistic & Psychological Sciences, Providence (Fall 2009-2011).
- CLPS 1480D 'Topics in Cognitive Neuroscience: Cognitive Neuropsychiatry', Brown University, Department of Cognitive, Linguistic & Psychological Sciences, Providence (Spring 2011).
- 'Mind, brain and behavior: an introduction to Cognitive Neuroscience' at Rhode Island School of Design, Providence (Spring 2011).

#### Guest Lectures

- Master course 'Cognitive Neuropsychiatry', University Utrecht (2005 & 2006).
- Assisted teaching in the undergraduate course 'Experimental Psychology', Utrecht (2005 & 2006).
- Training for psychiatrists: A-opleiding arts-assistenten, DeltaBouman Psychiatric Hospital, Poortugaal NL (Fall 2006).
- 'Decision-making', University of Arizona, Tucson (Spring 2008).
- 'Drugs and Behavior', Rhode Island College, Providence (Fall 2009).

- Psychiatry Residents Integrative Case Conference/ Psychiatry Seminar "Neuroscience: Fear circuitry" for PGY 1's & PGY2's, Butler Hospital (August 2014, 2016-2021)
- CLPS 1494 "Affective Neuroscience (Dr. Shenhav), Brown University, Providence (Fall 2017)
- NeuroEngineering 1220 (Dr. Hochberg), Brown University, Providence (Spring 2018, 2019, 2021)

#### *Student supervision, mentoring, and evaluation*

- Master-thesis supervisor, Utrecht University and Delta Bouman Psychiatry Hospital, Poortugaal (2005-2011).
- Bachelor-thesis supervisor, Utrecht University (2005).
- Honors-thesis supervisor, Brown University (2010-2016; 2018-19) – several mentees received poster awards and the Harold Schlosberg Award for outstanding honors thesis.
- Independent Study supervisor for Directed Research in Cognitive, Linguistic and Psychological Sciences, Brown University (2010-2016, 2022)
- Summer UTRA supervision, CfNN & Brown University (Summer 2015; 2019; 2021)
- External Examiner, Doctor of Philosophy degree for Daina Crafa, Thesis title: "Adapting differently to changing contexts: flexible yet atypical neural and behavioral responses to dynamic social contexts in Schizophrenia". McGill University, Canada (August 2017)
- Dissertation Committee member, Doctor of Philosophy degree for Ryan Miller, Thesis title: "Intrinsic Change or Mere Compliance? The Influence of Descriptive Norms on Moral Conformity". Brown University, USA (September 2017)

#### **Ad-hoc reviewer Journals (alphabetic order)**

Acta Neuropsychiatrica; Ammons Scientific; Archives of General Psychiatry; Austin Journal of Cerebrovascular Disease & Stroke; Behavioral Neuroscience; Behavioural Brain Research; Biological Psychiatry; Biological Psychiatry: CNI; Biological Psychology; Biomedicine; BMC Psychiatry; Brain Sciences; Brain Sciences, section Neurotechnology and Neuroimaging; Brain Stimulation; British Journal of Psychiatry; Clinical Psychological Science; Cognition; Cognitive, Affective, and Behavioral Neuroscience; Cognition and Emotion; Cortex; Depression and Anxiety; Emotion; European Archives of Psychiatry and Clinical Neuroscience; European Journal of Neurology; European Journal of Social Psychology; European Psychiatry; Evolution & Human Behavior; Expert Review of Neurotherapeutics; Frontiers in Behavioral Neuroscience; Frontiers in Human Neuroscience; Human Psychopharmacology: Clinical and Experimental; IEEE Transactions on Affective Computing; International Journal of Clinical and Health Psychology; International Journal of Psychology; International Journal of Psychophysiology; Journal of Cognitive Neuroscience; Journal of Cognitive Psychology; Journal of Economic Psychology; Journal of European Neurology; Journal of Experiment Psychology: General; Journal of Nervous and Mental Disease; Journal of Neurology; Journal of Neuropsychology; Journal of Neuroscience; Journal of Psychiatric Research; Mental Health and Physical Activity; Neurobiology of Learning and Memory; NeuroImage; Neuromodulation: Technology at the Neural Interface; Neuropsychologia; Neuroscience; PLoS ONE; Progress in Neuro-psychopharmacology & Biological Psychiatry; Psychiatry Research; Psychological Medicine; Psychological Science; Psychological Reports; Psychophysiology; Reviews in the Neurosciences; Schizophrenia Bulletin; Schizophrenia Research; Social Cognition; Social Cognitive and Affective Neuroscience; Social Neuroscience; Symmetry; The Clinical Neuropsychologist; The Spanish Journal of Psychology; Translational Neuroscience.

#### **Oral presentations**

- 'Deficits in emotional processing in schizophrenia'. 2004. Nederlandse Vereniging Neuropsychologie Voorjaarsconferentie (Dutch Organisation for Neuropsychology).
- van 't Wout (2005). 'Emotions in decision-making'. 2005. Nederlandse Vereniging voor Psychonomie (Dutch Organisation for Psychonomics).
- 'Social cognition in schizophrenia and high-risk groups for schizophrenia (Genetics and Neuropsychology)'. 2006. DeltaBouman Psychiatric Hospital.
- 'The role of perceived trustworthiness in decision-making'. January 2007. Emotion and cognition workshop Rovereto, Italy.



- 'Gut feelings, split second decisions and unfairness; the role of emotions in decision-making'. January 2007. PhD Colloquium University Milano, Italy.
- 'Emotions and goal-maintenance in decision-making'. 2007. Travel award speaker: Social and Cognitive Neuroscience meeting, Austin.
- 'Emotions and goal-maintenance in decision-making'. 2008. Colloquium Leuven University, Belgium.
- 'Friend or Foe: The influence of implicit trust judgments on cooperation in social interactive decision-making'. October, 2009 Conference on Trust, Advice and Reputation, Toulouse France.
- 'The human emotions & The emotional human'. October, 2010. Samsung Workshop, Rhode Island School of Design.
- 'Effects of transcranial Direct Current Stimulation over the prefrontal cortex on fear extinction and recall: Implications for anxiety disorders'. October 2013. Department of Cognitive, Linguistic & Psychological Sciences, Brown University.
- 'Enhancing fear extinction with transcranial direct current stimulation: implications for PTSD. February 2015. Brown Bag Presentation Center of Innovation in Long Term Services and Support. PVMAC, Providence.
- 'Regulation decision-making after unfair treatment by others; behavioral and neural responses and the influence of interoception. January 2015. Workshop on 'Cognitive Control and Social Decision Making. Toulouse, France.
- 'Enhancing fear extinction with transcranial Direct Current Stimulation: implications for PTSD'. Donders Centre for Cognitive Neuroimaging. May 2015. Nijmegen, the Netherlands.
- 'Enhancing fear extinction with transcranial Direct Current Stimulation: implications for PTSD'. June 2015. Donders Institute for Brain, Cognition and Behaviour. Nijmegen, the Netherlands.
- Brain Week Rhode Island "PTSD: Trauma to Treatment". March 15, 2017.
- Mental Health Colloquium "Enhancing safety memories with non-invasive brain stimulation techniques for PTSD treatment". Providence VA Medical Center, April 19, 2017.
- Michael S. Goodman '74 Memorial Seminar Series "Enhancing safety memories with non-invasive brain stimulation techniques for PTSD treatment". Cognitive, Linguistic and Psychological Sciences, Brown University, November 17, 2017.
- Social Brown Bag "Changing emotions in social and non-social contexts with implications for psychiatry". Cognitive, Linguistic and Psychological Sciences, Brown University, March 8, 2019.
- Brain Week Rhode Island "Exploring Fear and Social Connection Through the Sciences". March 12, 2019.
- Recent Advances in Neuroscience: This Stuff Is Really Cool (TSIRC). "The Truth About Cats and Dogs". 74<sup>th</sup> Annual Meeting of the Society of Biological Psychiatry, Chicago, May 15, 2019.  
<https://www.nncionline.org/course/dr-mascha-vant-wout-frank-the-truth-about-cats-and-dogs/>
- Rhode Island NIH IDEa Symposium "Effect of transcranial direct current stimulation timing on safety memory in posttraumatic stress disorder". June 7, 2019.
- 2020 Annual meeting Psychiatry Research Society "Learning not to avoid: Effects of transcranial direct current stimulation on corrective learning". March 11, 2020. *\*Unable to attend due to COVID-19 travel restrictions.*
- Brain Week Rhode Island "Overcoming Fear and Trauma: A Community Conversation". March 19, 2020. *\*Canceled due to COVID-19.*
- CfNN Virtual Symposium "Learning not to avoid: effects of transcranial direct current stimulation on reversal learning". April 7, 2020.
- 75<sup>th</sup> Annual meeting Society of Biological Psychiatry "Exploring the One-Year Clinical Outcomes following Theta Burst Stimulation for Posttraumatic Stress Disorder" as part of the symposium "Neuromodulation Targeting Negative Affect Disorder Mechanisms: From Experimental Probe to Brain-Based Clinical Intervention". May 2, 2020. *\*Canceled due to COVID-19.*
- Rhode Island NIH IDEa Symposium "Learning not to avoid: effects of transcranial direct current stimulation on reversal learning". June 12, 2020.
- 4th European Conference of Brain Stimulation in Psychiatry Bridging the gap: from theory to practice "tDCS-augmented virtual reality exposure for PTSD: possibility for individualized treatment". November 13, 2020.

- 36<sup>th</sup> Annual meeting International Society for Traumatic Stress Studies “Towards Individualized Transcranial Direct Current Stimulation for Posttraumatic Stress Disorder” as part of the symposium on Novel Brain-Based Interventions for PTSD and Their Potential Mechanisms of Action. November 13, 2020.
- Anxiety & Depression Association of America 2021 Virtual Conference. Co-chair symposium “Novel Brain-Based Interventions for PTSD and Their Potential Mechanisms of Action”. March 18, 2021.
- 59<sup>th</sup> Annual meeting of the Psychiatry Research Society “Disrupting Contextual Avoidance Learning to Promote Generalization Using Transcranial Direct Current Stimulation”. March 11, 2021.
- Annual meeting Society of Biological Psychiatry 2021 Virtual Meeting. Co-chair symposium “Mechanisms of Neurostimulation in Psychiatry: Applications Beyond Depression”. May 1, 2021.
- Virtual Northeast Regional IDeA Conference “The internal sunshine of the neuromodulated mind: Can electrical stimulation improve the inhibition of fear?”. August 16, 2021.
- Society for Research in Psychopathology 2021 Annual Meeting paper presentation “From What If, to if Only: Choice and Regret in Obsessive-Compulsive Disorder”. September 24, 2021.
- 60<sup>th</sup> Annual meeting Psychiatry Research Society “Augmenting virtual reality exposure for warzone-related PTSD using tDCS: Examining the role of emotional arousal and electrical field distributions”. March 12, 2022.
- Invited speaker Somatic Treatments Community of Practice call “Can electrical stimulation improve the inhibition of fear?”. VA White River Junction Healthcare System. December 14, 2022.
- 5<sup>th</sup> International Brain Stimulation Conference “Utilizing tDCS to Augment the Formation of Safety Signals for Fear Inhibition in Posttraumatic Stress Disorder”. February 20, 2023.

### **Interviews, media, and outreach**

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- Interviewed for ‘VA Research Currents’ from the Office of Research & Development, titled “Brain stimulation technique shows promise in reducing fear in Veterans with PTSD” <https://www.research.va.gov/currents/1117-Brain-stimulation-technique-shows-promise-in-reducing-fear-in-PTSD.cfm> (November 9, 2017)
- Interview Providence Business News “First study of hybrid low-current stimulation virtual reality PTSD treatment seeks subjects (April 13, 2018)
- VA Office of Research and Development, Research on the Hill event. Objective: showcase VA Research and demonstrate how it translates into tangible healthcare benefit for Veterans to Congressional delegation(s), Congressional staffers, VA/VHA Senior Leaders, Academia, The Media (national and local), Veterans Service Organizations, Veterans, and the public at large. Capitol Hill, Washington DC (June 20, 2019)
- Outreach through the Brain and Behavior Research Foundation posted article “Non-Invasive Brain Stimulation Continued to Help Veterans with PTSD a Year After Treatment” (August 5, 2020)

### **Conference presentations (published only)**

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- Jellema, T., Lorteije, J.A.M., van Rijn, S., van 't Wout, M. et al. (2004). Failure to automate the semantic processing of social cues in autism. *Perception*, 33:101-101 Suppl.
- van Rijn S., van Honk, J., Aleman, A., van 't Wout, M., Kahn, R.S. (2003). Orbitofrontal Cortex Functioning in Schizotypy: Relationship Between SPQ Ratings and Punishment Learning. *Schizophrenia Research*, 60: 161.
- van 't Wout, M., Aleman, A., Kahn, R.S. (2003). Schizotypy and Alexithymia in Hallucination-Prone Individuals. *Schizophrenia Research*, 60: 160.
- van Rijn, S., Aleman A., van 't Wout M., et al. (2004). Schizotypy and social skills: Performance versus distress. *Schizophrenia Research*, 67: 224-224 Suppl. S.
- van 't Wout, M., Aleman, A., Kessels, R.P.C., et al. (2004). Facial affect recognition in schizophrenia: Specific deficits and relationship with symptoms *Schizophrenia Research*, 67: 260-260 Suppl. S.
- Aleman A., van 't Wout M., Kahn R.S. (2005). Emotional working memory in schizophrenia. *Schizophrenia Bulletin*, 31(2): 316.
- van 't Wout, M., Aleman, A., Bermond, B., et al. (2005). Specific impairments in the perception, regulation, and psychophysiology of emotion processing in schizophrenia. *Schizophrenia Bulletin*, 31(2): 347.

- van 't Wout, M., Mariano, T.Y., Reddy, M.K., Rasmussen, S.A., Greenberg, B.D. (2015). Modulating extinction of conditioned fear by transcranial direct current stimulation. *Biological Psychiatry*, 77(9): 372S.
- Mariano, T.Y., van 't Wout M., Garnaat, S.L., Rasmussen, S.A., Greenberg, B.D. (2015). Modulating tolerability of acute painful stimuli with transcranial direct current stimulation (tDCS) targeting the dorsolateral prefrontal cortex. *Biological Psychiatry*, 77(9): 372S.
- Philip, N.S., Albright, S.E., Barredo, J., Frank M., Ridout, S.J., Ridout, K.K., Almeida, J., Tyrka, A.R., Price, L.H., Carpenter, L.L. (2016). Repetitive Transcranial Magnetic Stimulation Corrects Network Pathology in Patients with Comorbid Posttraumatic Stress Disorder and Major Depressive Disorder. *Biological Psychiatry*, 79(9): 397S-397S.
- van 't Wout, M., Longo, S., Reddy, M.K., Philip, N.S., Greenberg, B.D (2016). Transcranial Direct Current Stimulation During Extinction Consolidation Enhances Extinction Recall in Veterans With Posttraumatic Stress Disorder. *Biological Psychiatry*, 79(9): 185S-185S.
- Almeida, J., Spofford, C., van't Wout, M., Unger, W., Philip, N., Carpenter, L., & Shea, M. T. (2016). Heart Rate Variability Responses to a Standardized Virtual Reality Exposure in Veterans With PTSD. *Neuropsychopharmacology*, 41: S460-S461.
- van 't Wout, M., Reddy, M. K., Philip, N. S., & Greenberg, B. D. (2017). Proceedings# 4. Augmenting Safety Learning and Memory with transcranial Direct Current Stimulation: Effects of Stimulation Timing on Extinction and Recall. *Brain Stimulation*, 10(4): e50.
- Ridout, S.J., Spofford, C.M., van 't Wout, M., Unger, W.S., Philip, N.S., Shea, M.T. (2017). 670. Heart Rate Variability Responses to a Standardized Virtual Reality Exposure in Veterans with PTSD. *Biological Psychiatry*, 81(10), S271
- Philip, N.S., Barredo, J., van 't Wout, M., Almeida, J., Tyrka, A.R., Price, L.H., Carpenter, L.L. (2017). 101-Network Mechanisms of Clinical Response to Transcranial Magnetic Stimulation in Posttraumatic Stress and Major Depressive Disorders. *Biological Psychiatry*, 81(10): S42-S43.
- van 't Wout, M., Reddy, M., Greenberg, D., Philip, N. (2017). 636. Combining Transcranial Direct Current Stimulation with Virtual Reality Exposure for PTSD. *Biological Psychiatry*, 81(10): S258.
- Mariano, T., Burgess, F., Bowker, M., Kirschner, J., van't Wout-Frank, M., Halladay, C., Jones, R., Stein, M., Greenberg, B. (2018). T187. Transcranial Direct Current Stimulation (tDCS) for the Affective Symptoms of Chronic Low Back Pain (CLBP): A Double-Blinded, Randomized, Placebo-Controlled Trial. *Biological Psychiatry*, 83(9): S200-S201.
- van 't Wout-Frank, M., Aiken, E.M., Larson, V.L., Shea, M.T., Greenberg, B.D., Philip, N.S. (2019). TBS-modulated anger in Veterans with PTSD. *Biological Psychiatry*, 85(10): S217
- Philip, N.S., Barredo, J., Aiken, E., Larson, V., Jones, R., Shea, M.T., Greenberg, B.D., van't Wout-Frank, M. (2019). 68. Intermittent Theta Burst Stimulation for Posttraumatic Stress Disorder. *Biological Psychiatry*, 85(10): S28.
- van 't Wout-Frank, M., Aiken, E.M., Larson, V.L., Shea, M.T., Greenberg, B.D., Philip, N.S. (2019). F12. TBS-Modulated Anger in Veterans With PTSD. *Biological Psychiatry*, 85(10): S217.
- van 't Wout, M., Faucher, C., Garnaat, S., Philip, N., & Burwell, R. (2019). Learning Not to Avoid: Effects of Transcranial Direct Current Stimulation on Reversal Learning. *Neuropsychopharmacology*, 44 S1: 87-88.
- Petrosino, N.J., van 't Wout-Frank, M., Aiken, E., Swearingen, H.R., Barredo, J., Zandvakili, A., Philip, N.S. (2019). One-Year Clinical Outcomes Following Theta Burst Stimulation for PTSD. *Neuropsychopharmacology*, 44 S1: 230–384.
- Aiken, E., Petrosino, N., van't Wout-Frank, M., Swearingen, H., Barredo, J., Zandvakili, A., Philip, N. (2020). One-Year Clinical Outcomes Following Theta Burst Stimulation for Posttraumatic Stress Disorder. *Biological Psychiatry*, 87(9): S128.
- van't Wout-Frank, M., Petrosino, N., Aiken, E., Swearingen, H., Barredo, J., Zandvakili, A. and Philip, N., 2020. Exploring the One-Year Clinical Outcomes Following Theta Burst Stimulation for Posttraumatic Stress Disorder. *Biological Psychiatry*, 87(9): S78.
- Garnaat, S., Burwell, R. and van't Wout-Frank, M., 2020. Testing the Impact of Neuromodulation on Contextual Reversal Learning and Generalization. *Biological Psychiatry*, 87(9): S77.
- Barredo, J., van't Wout-Frank, M., Swearingen, H. and Philip, N., 2020. Transcranial Magnetic Stimulation for PTSD and Suicidality—New Insights Into Clinical Mechanisms. *Biological Psychiatry*, 87(9): S92-S93.

- Cosmo, C., Aiken, E., van 't Wout, M., Philip, N.S. (2020). Autonomic Features in Posttraumatic Stress Disorder: "Les Prophéties" for Theta-Burst Stimulation Response? *Neuropsychopharmacology*, 45 S1: 74-75.
- van 't Wout, M., Harle, A., Sorensen, D., Philip, N.S. (2020). Individualizing Transcranial Direct Current Stimulation for Clinical Trials on Posttraumatic Stress Disorder. *Neuropsychopharmacology*, 45 S1: 283-283.
- Cosmo, C., Aiken, E., van't Wout-Frank, M., & Philip, N. (2021). Ultra-Short HRV Features as Predictors of Intermittent Theta-Burst Stimulation Response in Posttraumatic Stress Disorder. *Biological Psychiatry*, 89(9), S105. DOI: 10.1016/j.biopsych.2021.02.271
- Brigido, S., Bozzay, M., van't Wout-Frank, M., Aiken, E., Swift, R., & Philip, N. (2021). Safe Use of Intermittent Theta Burst Stimulation in Veterans with Alcohol Use Disorder. *Biological Psychiatry*, 89(9), S290. DOI: 10.1016/j.biopsych.2021.02.722.
- Arulpragasam, A.R., Faucher, van 't Wout-Frank, M., Mernoff, S.T., Correia, S., Van Patten, R., Greenberg, B.D., Philip, N.S. (2022). First-in-Human Use of Low Intensity Focused Ultrasound in Depressed Patients: Safety and Tolerability. *Biological Psychiatry*, 91(9), S236-S237. DOI: 10.1016/j.biopsych.2022.02.605
- van 't Wout, M., Brigido, S., Harle, A., Aiken, E., Philip, N.S. (2022). Stimulating the ventromedial prefrontal cortex in the context of virtual reality exposure for PTSD: Examining the role of emotional arousal and electrical field distributions. *Biological Psychiatry*, 91(9), S360. DOI: 10.1016/j.biopsych.2022.02.904

#### **Additional poster presentations**

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- van 't Wout M., Mariano, T.Y, Reddy, M.K., Rasmussen, S.A., Greenberg, B.D. (2015). Enhancing extinction of conditioned fear by transcranial Direct Current Stimulation. 2nd Annual Mind Brain Research Day. Brown University.
- Silverman, H., van 't Wout M. Modulating feelings of regret with transcranial direct current stimulation. Summer Research Symposium. Brown University, August 2015
- Dunlap, C., van 't Wout, M., Philip, N.S., Greenberg, B.D. (2016). Transcranial direct current stimulation-augmentation of virtual reality exposure for PTSD: a focus on methods. Annual Mind Brain Research Day. Brown University
- van 't Wout, M., Philip, N.S., Rasmussen, S.A., Greenberg, B.D. (2016). Augmenting safety learning and memory with transcranial direct current stimulation: effects of stimulation timing on extinction and recall. Annual Mind Brain Research Day. Brown University
- Albright, S.E., Barredo, J., Frank, M., Ridout, S., Ridout, K., Almeida, J., Tyrka, A.R., Price, L.H., Carpenter, L.L., Philip, N.S. (2016). Repetitive Transcranial Magnetic Stimulation Corrects Network Pathology in Posttraumatic Stress Disorder and Major Depressive Disorder. Annual Mind Brain Research Day. Brown University
- van 't Wout, M., Longo, S., Reddy, M.K., Philip, N.S., Greenberg, B.D. (2016). Transcranial direct current stimulation may modulate extinction memory in Veterans with posttraumatic stress disorder. Research week PVAMC
- Spofford, C., van 't Wout-Frank, M., Unger, W., Sevin, E., Shea, M.T. (2016). Skin conductance reactivity to standardized virtual reality combat scenes in Veterans with PTSD. Research week PVAMC
- Dunlap, C., van 't Wout, M., Philip, N.S., Greenberg, B.D. (2016). Transcranial direct current stimulation-augmentation of virtual reality exposure for PTSD: a focus on methods. Research week PVAMC
- Albright, S.E., Barredo, J., Frank, M., Ridout, S., Ridout, K., Almeida, J., Tyrka, A.R., Price, L.H., Carpenter, L.L., Philip, N.S. (2016). Repetitive Transcranial Magnetic Stimulation Corrects Network Pathology in Posttraumatic Stress Disorder and Major Depressive Disorder. Research week PVAMC
- Philip, N.S., Barredo, J., van 't Wout-Frank, M., Almeida, J., Tyrka, A.R., Price, L.H., Carpenter, L.L. (2016). Network Mechanisms of 5Hz Transcranial Magnetic Stimulation in Patients with Posttraumatic Stress and Major Depressive Disorders. American College of Neuropsychopharmacology.
- Barredo, J., Carpenter, L.L., van 't Wout-Frank, M., Aiken, E., Dunlap, C., Greenberg, B.D., Philip, N.S. (2017). The influence of early life stress and PTSD on systems-level functional network organization: A novel application of convergence analysis. Annual Mind Brain Research Day. Brown University

- van 't Wout, M., Silverman, H.E. (2017). Modulating “what might have been”: The effect of transcranial direct current stimulation on feelings of regret and relief. Annual Mind Brain Research Day. Brown University
- Larson, V.C., van 't Wout-Frank, M., Philip, N.S., Greenberg, B.D. (2017). Transcranial Direct Current Stimulation-Augmentation of Virtual Reality Exposure for PTSD: Preliminary Results. Annual Mind Brain Research Day. Brown University *\*Poster Award Winner*.
- Larson, V.C., van 't Wout-Frank, M., Philip, N.S., Greenberg, B.D. (2017). Transcranial Direct Current Stimulation-Augmentation of Virtual Reality Exposure for PTSD: Preliminary Results. Research Week PVAMC.
- van 't Wout, M., Silverman, H.E. (2017). Modulating “what might have been”: The effect of transcranial direct current stimulation on feelings of regret and relief. Research Week PVAMC.
- Philip, N.S., Barredo, J., van 't Wout-Frank, M., Greenberg, B.G., Carpenter, L.L. (2017). Therapeutic Transcranial Magnetic Stimulation Improves Cortical Information Flow in Posttraumatic Stress Disorder. American College of Neuropsychopharmacology
- Ridout, S.J., Spofford, C.M., van 't Wout, M., Unger, W.S., Philip, N.S., Carpenter, L.L., Shea, M.T. (2017). Heart rate variability responses to a standardized virtual reality exposure in Veterans with PTSD. American College of Neuropsychopharmacology.
- Mariano, T.Y., Burgess, F., Bowker, M., Kirschner, J., van 't Wout-Frank, M., Halladay, C.W., Jones, R.N., Stein, M., Greenberg, B.D. (2018). A Double-Blinded RCT of Transcranial Direct Current Stimulation (tDCS) for the Affective Symptoms of Chronic Low Back Pain (CLBP). International Society for CNS Clinical Trials and Methodology.
- Long, N.M., Larson, V.C., Garnaat, L.S., Burwell, R., Jacobson, T., Philip, N.S., van't Wout-Frank, M. (2018). Learning not to avoid: preliminary data on the effects of transcranial direct current stimulation on learning and generalization to novel contexts. Annual Mind Brain Research Day, Brown University. *\*Poster Award Winner*
- Mariano, T., Burgess, F.W., Bowker, M., Kirschner, J., van't Wout-Frank, M. Jones, R., Halladay, C.W., Stein, M., Greenberg, B.D. (2018). A Double-Blinded Placebo-Controlled RCT of Repeated Transcranial Direct Current Stimulation for the Affective Symptoms of Chronic Low Back Pain. Annual Mind Brain Research Day, Brown University.
- Long, N.M., Larson, V.C., Garnaat, L.S., Burwell, R., Jacobson, T., Philip, N.S., van't Wout-Frank, M. (2018). Learning not to avoid: preliminary data on the effects of transcranial direct current stimulation on learning and generalization to novel contexts. VA Research Day, Providence VA Medical Center.
- van 't Wout-Frank, M., Garnaat, S.L., Long, N.M., Larson, V.C, Philip, N.S., Jacobson, T., Burwell, R. (2018) Learning not to avoid: preliminary data on the effects of transcranial direct current stimulation on learning and generalization to novel contexts. Carolina Neurostimulation Conference, North Carolina.
- Mariano, T.Y., Burgess, F.W., Bowker, M., Kirschner, J., van't Wout-Frank, M., Jones, R.N., Halladay, C.W., Stein, M., Greenberg, B.D. (2018). A Double-Blinded, Placebo-Controlled RCT of Repeated Daily Sessions of Transcranial Direct Current Stimulation (tDCS) for the Affective Symptoms of Chronic Low Back Pain (CLBP). American Society of Clinical Psychopharmacology Annual Meeting.
- Philip NS, Barredo J, Aiken EA, Larson V, Jones RN, Shea MT, Greenberg BD, and van't Wout-Frank M. (2018). Theta Burst Stimulation for Posttraumatic Stress Disorder. American College of Neuropsychopharmacology.
- Faucher, C., Garnaat, S.L., Burwell, R., van 't Wout-Frank. (2019). Effects of transcranial Direct Current Stimulation on Avoidance Based Reversal Learning. Annual Mind Brain Research Day, Brown University. *\*Poster Award winner*
- Larson, V.L., van 't Wout-Frank, M., Aiken, E., Shea, T.M., Greenberg, B.D., Philip, N.S. (2019). Theta-burst transcranial magnetic stimulation reduces anger in Veterans with PTSD. Annual Mind Brain Research Day, Brown University.
- Faucher, C., Garnaat, S.L., Burwell, R., van 't Wout-Frank. (2019). Effects of transcranial Direct Current Stimulation on Avoidance Based Reversal Learning. VA Research Week, Providence VA Medical Center.
- Larson, V.L., van 't Wout-Frank, M., Aiken, E., Shea, T.M., Greenberg, B.D., Philip, N.S. (2019). Theta-burst transcranial magnetic stimulation reduces anger in Veterans with PTSD. VA Research Week, Providence VA Medical Center.

- Arulpragasam, A.R., Faucher, C.R., Aiken, E.M., van 't Wout-Frank, M., Barredo, J., Greenberg, B.D., Philip, N.S. (2022). Cerebral Blood Flow Changes in Amygdala Following Low Intensity Focused Ultrasound in Depressed Patients: First-in-Human Outcomes. 2022 Annual Meeting Society of Biological Psychiatry.
- van 't Wout-Frank, M., Brigido, S.K., Harle, A.S.M., Aikenm E.M., Philip, N.S. (2022). Stimulating the ventromedial prefrontal cortex in the context of virtual reality exposure for PTSD: Examining the role of emotional arousal and electrical field distributions. Emerging Areas of Science: 2022 IDeA Symposium.