

Curriculum Vitae

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Report of Employment and Education

Academic Employments and Titles

2017 – Present	Chair	Technology Innovations for Youth Addiction Recovery and Mental Health	Simon Fraser University
2017 – Present	Assistant Professor	Mechatronic Systems Engineering	Simon Fraser University
2013 – 2016	Assistant Professor	Psychiatry	University of Toronto
2013 – Present	Scientist	Neuroengineering	Centre for Addiction and Mental Health
2012 – 2015	Lecturer	Faculty in Intensive Course in Transcranial Magnetic Stimulation	Harvard Medical School
2014 – Present	Associate Member	Institute of Medical Science Graduate Faculty	University of Toronto
2014 – Present	Electrophysiology Lead	The Canadian Biomarker Integration Network in Depression	Ontario Brain Institute

Education

2006	B.Eng.	Electrical and Biomedical Engineering/Minor in Psychology	McMaster University
2010	Ph.D.	Collaborative Program of Biomedical Engineering and Medical Sciences	University of Toronto

Postdoctoral Training

2011– 2013	Postdoctoral Fellowship	Cognitive Neurology	Harvard Medical School
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Committee Service

2004 – 2006	Executive Board		McMaster University/ Bioengineering at McMaster Society
	2005 – 2006		Vice President
2007 – 2010	Institute of Medical Science Students' Association		University of Toronto
	2007– 2009		Site Director
	2009 – 2010		Graduate Students' Union Representative
2008 – 2010	Mel Silverman Mentorship Award Committee		University of Toronto/Institute of Medical Science
	2010		Chair
2017 – Present	Undergraduate Committee Member		Simon Fraser University, School of Mechatronic Systems Engineering
2017 – Present	Graduate Committee Member		Simon Fraser University, School of Mechatronic Systems Engineering

Editorial Activities

Ad-hoc reviewer for:
Archives of General Psychiatry/JAMA Psychiatry
Biological Psychiatry
Biomedical Signal Processing and Control
BMC Psychiatry
Brain Stimulation
Brain Structure and Function
Current Biology
Clinical Neurophysiology
European Journal of Neuroscience
Experimental Brain Research
Frontiers in Human Neuroscience
Journal of Clinical Neurophysiology
Journal of Psychosomatics
Muscle and Nerve
NeuroImage
PLoS ONE
Psychiatry Research
Schizophrenia Bulletin
Scientific Reports
Selected Topics in Signal Processing

Editorial Member of: Neuroimaging and Stimulation, Frontiers in Psychiatry

Reviewer for: National Institute of Health

Report of Awards and Scholarships

2002	Queen Elizabeth II, Aiming for Top Tuition Scholarship	Ontario Student Assistance Program	High GPA \$3 500 CAN
2002	Honor Entrance Award	McMaster University	High GPA
2003	Queen Elizabeth II, Aiming for Top Tuition Scholarship	Ontario Student Assistance Program	Academic Achievements \$3 500 CAN
2008	Open Fellowship Award	University of Toronto	Academic Achievements \$3 000 CAN
2009	Ontario Graduate Scholarship	Ontario Student Assistance Program	Research Productivity \$15 000 CAN (declined)
2009	University of Toronto Open Fellowship Award	University of Toronto	Research Productivity \$2 500 CAN
2010	Laidlaw Manuscript Competition, First Prize (Clinical)	University of Toronto, Department of Medical Science	Best Clinical Manuscript \$700 CAN
2009	Fredrick Banting and Charles Best Canada Graduate Scholarships	Canadian Institute of Health Research	Doctoral Award \$35 000 CAN
2011 – 2013	Postdoctoral Fellowship Award	Canadian Institute of Health Research	\$150 000 CAN
2014	Winner of CAMH Breakthrough Challenge (Based pm 21,000 votes cast from 10 countries)	Centre for Addiction and Mental Health Foundation	\$10 000 CAN

2017 Best Pitch Award for Virtual Reality in Health Research Stanford Brainstorm Innovation Lab NA

Report of Current Funded Projects

- 2014 – 2018 Individually Optimized Brain Stimulation in Dementia Using MEG
Ontario Brain Institute, Neurodegenerative Disease Research Initiative
Co-PI (PI: Jed Meltzer, \$726 665 CAN)
- 2014 – 2016 Efficacy and Biological Targets of Response to rTMS Therapy in Youth Depression
Slaight Family Centre
PI (\$175 000 CAN)
- 2015 – 2017 Biological Targets of Response to Electroconvulsive Therapy and Magnetic Seizure Therapy in Depression
NARSAD Young Investigator
PI (\$65 000 US)
- 2015 – 2020 Mapping the Human Brain Circuitry and Function through Transcranial Magnetic Stimulation Combined with Electroencephalography
NSERC Discovery Grant
PI (\$145,000 CAN)
- 2016 – 2018 Mapping Neural Mechanisms of Inhibitory Control in Musician and Non-Musician Youth
GRAMMY Foundation Grant Program
PI (\$19,993 US)
- 2016 – 2018 Feasibility of combining rTMS and music-based cognitive training for treating youth depression
Caskey Francis Family Award in Clinical Research
PI (100,000 CAN)
- 2016 – 2019 Cognitive Outcomes and the Response/Remission Efficacy of Convulsive Therapies in Treatment Resistant Depression: The CORRECT-TRD Trial
Brain Canada
Co-PI (PI: Daniel Blumberger, \$1,499,918)
- 2017 – 2022 Confirmatory Safety and Efficacy Trial of Magnetic Seizure Therapy for Depression
NIMH

Co-PI (PI: Zafiris J. Daskalakis, \$7,424,312)

2017 – 2018 Better Nights Better Days SWAPP Program
Kids Brain Health Network
PI (\$50,000)

2017 – 2022 Innovative Technologies for Youth Addiction Recovery and Mental Health
John Volken Foundation
PI (\$250,000)

2018 – 2019 Intelligent Solutions for Atypical Auditory Processing in Children with
Neurodevelopmental Disorders
Kids Brain Health Network
Co-PI (\$50,000)

2018 eBrain Centre: Neurotechnology Innovations in Youth Mental Health and Addiction
CFI-JELF
PI (\$250,000)

2018 – 2023 Neuromodulation Research Program for Youth Addiction and Mental Health
Michael Smith Foundation Health Research – Scholar Award
PI (\$450,000)

Report of Local Teaching and Training of HQP

Laboratory and Other Research Supervisory and Training Responsibilities

Supervisor	Gemma Koor Bachelor's - Completed University of San Diego	2012/06 – 2012/08
Co-Supervisor	Elizabeth McEwen Bachelor's - In Progress Queen's University	2013/06 – 2013/08
Co-Supervisor	Luis Garcia Dominguez Postdoctoral Fellow Physicist University of Toronto	2013/06 – 2014/12
Project Supervisor	Yinming Sun Doctor of Philosophy Institute of Biomaterial and Biomedical Engineering University of Toronto	2013/06 – Present
Co-Supervisor	Arjun Khanna Medical Student - In Progress	2013/09 – Present

Harvard Medical School

Project Supervisor	Anusha Baskaran Doctor of Philosophy Department of Psychology Queen's University	2013/11 – 2015/06
Supervisor	Hsin-Yen Liu Bachelor's - In Progress McMaster University	2014/06 – 2014/09
Project Advisor	Vanessa Chan Master of Science Department of Psychology University of Toronto	2014/06 – 2014/10
Project Advisor	Stefanie Hutka Doctor of Philosophy Department of Psychology University of Toronto	2014/06 – 2014/10
Supervisor	Sravya Atluri Doctor of Philosophy Institute of Biomaterial and Biomedical Engineering University of Toronto	2014/09 – 2016/06
Supervisor	Ye Frank Mei Postdoctoral Fellow Biomedical Engineering University of Toronto	2014/11 – 2016/11
Project Advisor	Daphne Voineskos Master of Science Institute of Medical Science University of Toronto	2014/12 – Present
Project Advisor	Deanna Socha Master of Science Centre for Global eHealth Innovation University of Toronto	2014/12 – Present
Project Advisor	Laura Schulze Doctor of Philosophy University Health Network University of Toronto	2015/01– Present

Project Advisor	Felicity Backhaus Master of Science Institute of Medical Science University of Toronto	2015/09 – Present
Project Advisor	Ishraq Siddiqui Doctor of Philosophy Institute of Medical Science University of Toronto	2015/06 – Present
Project Advisor	Hamidreza Saghir Doctor of Philosophy Biomaterial and Biomedical Engineering University of Toronto	2015/10 – Present
Supervisor	Matthew Frehlich Master of Engineering Electrical and Computer Engineering University of Toronto	2015/09 – Present
Supervisor	Paul Dhami Doctor of Philosophy Medical Sciences University of Toronto	2016/09 – Present
Supervisor	Rachel George Undergraduate Co-op Student School of Mechatronic Systems Engineering	2017/04 – Present
Supervisor	Kathryn Cruz Undergraduate Co-op Student School of Interactive Art and Technology	2017/06 – Present
Advisor	Greg Christie Postdoc School of Interactive Art and Technology	2017/04 – Present
Supervisor	Yasaman Vaghei PhD School of Mechatronic Systems Engineering	2017/09 – Present
Supervisor	Andrey Zhdanov Postdoctoral Fellow School of Mechatronic Systems Engineering	2018/04 – Present

Formal Teaching of Peers

2012	Fundamentals of Transcranial Magnetic Stimulation	NeuroEngineering Course ENGN
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		1220, Brown University
2012 – 2015	Faculty in Intensive Course in Transcranial Magnetic Stimulation	Continuing Medical Education Course
	Intensive weeklong minifellowship offered three times per year	Harvard Medical School, Boston, MA, USA
2013 – Present	Faculty in Intensive Course in Transcranial Direct Current Stimulation	Continuing Medical Education Course
	Intensive two day minifellowship offered three times per year	Harvard Medical School, Boston, MA, USA
2014 –2016	Neurophysiology of Schizophrenia	Centre for Addiction and Mental Health, Toronto, ON, Canada
2016	Electrophysiology and Brain Stimulation Technologies in Treatment of Psychiatric Disorders	Course IMS1085, University of Toronto, ON, Canada

Report of Regional, National and International Invited Talks and Interviews

International

2010	Transcranial Magnetic Stimulation Combined with Electroencephalography: Recent Findings and its Application In Discovering Biological Markers for Neuropsychiatric Disorders Beth Israel Deaconess Medical Center, Berenson-Allen Center for Noninvasive Brain Stimulation Boston, MA, USA
2012	Modulation and Assessment of the Cerebello-Cortical Connectivity through Transcranial Magnetic Stimulation (TMS) Combined with EEG American Neurological Association Boston, MA, USA
2013	Transcranial Magnetic Stimulation Combined with EEG Australian Brain Stimulation Conference Melbourne, Australia
2014	Assessing the Electrophysiological Correlates of Cortical Inhibitory Mechanisms through Combination of Electroencephalography with Transcranial Magnetic Stimulation. 19th International Conference on BioMagnetism Halifax, NS, Canada
2014	Electrophysiological Markers of Brain Health in Understanding the Mechanisms of Action of ECT in MDD

American College of Neuropsychopharmacology
Phoenix, AZ, USA

- 2015 TMS in Diagnosis and Treatment of Psychiatric Disorders.
The 15th European Congress on Clinical Neurophysiology
Brno, Czech Republic
- 2016 Modulating the brain network dynamics with non-seizure and seizure inducing
interventions: The search for new antidepressant technology.
Transnational Psychiatry Meeting
Park City, United States
- 2016 Electroencephalography: The Tale of Extracting Signal from Noise.
NeuroTechTO/The International Neurotech Network
Toronto, Canada
- 2017 Electrophysiological Signals in Understanding the Targets of Seizure Therapy in
Depression
Translational Psychiatry Meeting
Park City, Utah
- 2017 Lecture Series on TMS-EEG
National Institute of Health
Washington, DC
- 2017 5th Science Factory TMS-EEG Summer School
Department of Neuroscience and Biomedical Engineering, Aalto University
Finland
- 2017 2nd International Forum of Cognition and Neuromodulation
Shenzhen, China
Keynote
- 2017 Electrophysiological Neuromarkers in Understanding Mechanisms of Action of Different
Antidepressant Modalities and Predicting Clinical Response in Major Depressive Disorder
(Data from CAN-BIND)
American College of Neuropsychopharmacology
Palm Springs, USA
- 2018 Brain Temporal Complexity in Depression
Carolina Neuromodulation Conference
North Carolina, USA
- National**
- 2011 Invited Presentation at the Graduate Seminar Series/Schizophrenia: Basic Science and the
Future of Neuroprosthetic Treatments
Department of Electrical and Computer Engineering & Institute of Biomaterial and
Biomedical Engineering

Toronto, ON, Canada

- 2013 Tracking the brain functional health: where we are and we're going
Institute of Biomaterials and Biomedical Engineering Special Seminar, University of
Toronto
Toronto, ON, Canada
- 2014 EEG Biomarkers in Depression
The Canadian Biomarker Integration Network in Depression, Ontario Brain Institute
Toronto, ON, Canada
- 2014 From Technology to Mental Health Treatment and Back
Surrey Innovation Boulevard
Surrey, BC, Canada
- 2014 EEG Recording and Analysis Standardization
The Canadian Biomarker Integration Network in Depression, Ontario Brain Institute
Toronto, ON, Canada
- 2015 Electrophysiology in Diagnosis and Treatment of Neuropsychiatric Illnesses
RCH Department of Psychiatry Grand Rounds
BC, Canada
- 2015 Mapping Human Brain Circuitry with Brain Stimulation Combined with
Electroencephalography
Simon Fraser University, Department of Engineering
Vancouver, Canada
- 2015, 16 EEG Breakout Session
CANBIND-OBI Annual Workshop
Toronto, Canada
- 2017 Report of EEG Platform at CAN-BIND
OBI Annual Conference
Toronto, Canada
- 2018 Neuromodulation in Treatment of Youth Depression
Canadian College of Neuropsychopharmacology (CCP)
Vancouver, Canada

Regional

- 2009 Gamma Oscillations in the Dorsolateral Prefrontal Cortex of Patients with Schizophrenia
Compared with Bipolar Disorder and Healthy Controls
Harvey Stancer Research Day, Department of Psychiatry, University of Toronto
Toronto, ON, Canada.
- 2010 Evidence for Gamma Inhibition Deficits in Dorsolateral Prefrontal Cortex in

Schizophrenia

Laidlaw Manuscript Competition, Institute of Medical Science, University of Toronto
Toronto, ON, Canada

- 2013 Utility of TMS-EEG in Assessing and Tracking the Brain Functional Health in Schizophrenia and Neuropsychiatric Disorders
1s Annual Retreat, Division of Brain & Therapeutics, University of Toronto
Toronto, ON, Canada
- 2013 Assessing, Tracking, and Restoring Brain Health through Brain Stimulation and Electrophysiology
Rotman Research Institute Grand Rounds
Toronto, ON, Canada
- 2014 Neurophysiology of Schizophrenia
Centre for Addiction and Mental Health
Toronto, ON, Canada
- 2014 Electrophysiological Markers of Brain Health in Guiding Diagnosis and Treatment of Neuropsychiatric Illnesses
Centre for Addiction and Mental Health Schizophrenia Grand Rounds
Toronto, ON, Canada
- 2015 Combining State of Art Neuroimaging and Neuromodulation Techniques to Treat Youth Depression. Slight Family Centre Opening
Conference/Education Day and Early Intervention Approaches
Toronto, Ontario
- 2016 Neurotechnology in Diagnosis and Treatment of Neuropsychiatric Illnesses.
Research Imaging Centre
Toronto, Canada
- 2016 Combining State of Art Neurophysiological and Neuromodulation Techniques to Treat Youth Depression.
Department of Psychiatry Meet the Investigator
Sunnybrook Hospital
Toronto, Canada
- 2016 Neuromodulation Technologies, Brain Data Science, and New Frontiers in Diagnosis and Treatment of Youth Depression
Campbell Family Mental Health Research Symposium
Centre for Addiction and Mental Health
Toronto, Canada
- 2016 Neuromodulation Technologies and New Frontiers in Treatment of Youth Depression
Transforming Practice and Policy Through Science: A Joint Conference on Child, Youth and Emerging Adult Mental Health
Centre for Addiction and Mental Health

Toronto, Canada

2018 Technology Tackling Mental Health
Brain Awareness Week
Surrey's Health and Technology District
Surrey, Canada

2018 Neurotechnology in Depression and Addiction
Canada India Networking Initiative (CINI)
Surrey, Canada

Broadcast Interviews

2014/10/07 rTMS and portable EEG technology for treating and monitoring brain health in youth depression, Centre for Addiction and Mental Health, Breakthrough Challenge, CAMH Engage

2017/04/24 Utility of Technologies in Addressing Mental Health and Addiction in Youth
CFAX Radio Station (11:30 am)

2017/05/ 25 CBC Radio Early Edition (6:10 am) on rTMS for Mental Health

2018/06/13 Spice Radio. Mental health research in City of Surrey.

Text Interviews

2015/11/17 Fahad's uplifting journey
Globe and Mail Magazine (Pages 12-13)

2015/05/26 Taking research outside the laboratory to study the brains of youth depression
Globe and Mail Metro

2017/06/07 Metro Vancouver. SFU professor tests virtual reality to help addiction recovery. URL: <http://www.metronews.ca/news/vancouver/2017/06/07/sfu-professor-tests-virtual-reality-help-addiction-recovery.html>

2017/06/08 CBC. Can virtual reality help drug addicts recover? Researchers from SFU aim to find out URL: <http://www.cbc.ca/news/canada/british-columbia/can-virtual-reality-help-drug-addicts-recover-researchers-from-sfu-aim-to-find-out-1.4148328>

Report of Publications

Peer reviewed publications in print or other media

1. Daskalakis ZJ, **Farzan F**, Barr MS, Maller J, Chen R, Fitzgerald PB. Long-interval cortical inhibition from the dorsolateral prefrontal cortex: a TMS-EEG study. **Neuropsychopharmacology**. 2008 Nov;33(12):2860-9.

2. Daskalakis ZJ, **Farzan F**, Barr MS, Rusjan PM, Favalli G, Levinson AJ, Fitzgerald PB. Evaluating the relationship between long interval cortical inhibition, working memory and gamma band activity in the dorsolateral prefrontal cortex. **Clinical EEG & Neuroscience**. 2008 Jul;39(3):150-5.
3. Fitzgerald PB, Daskalakis ZJ, Hoy K, **Farzan F**, Maller JJ. Cortical inhibition in motor and non-motor regions: A combined TMS-EEG study. **Clinical EEG & Neuroscience**. 2008 Jul; 39(3):112-7.
4. Barr MS, Fitzgerald PB, **Farzan F**, George TP, Daskalakis ZJ. Transcranial magnetic stimulation to understand the pathophysiology and treatment of substance use disorders. **Current Drug Abuse Reviews**. 2008 Nov;1(3): 328
5. **Farzan F**, Barr MS, Wong W, Chen R, Fitzgerald PB, Daskalakis ZJ. Suppression of gamma oscillations in the dorsolateral prefrontal cortex following long interval cortical inhibition: a TMS-EEG Study. **Neuropsychopharmacology**. 2009 May;34(6):1543-51.
6. Barr MS, **Farzan F**, Rusjan P, Chen R, Fitzgerald PB, Daskalakis ZJ. Potentiation of gamma oscillatory activity through repetitive transcranial magnetic stimulation (rTMS) of the dorsolateral prefrontal cortex. **Neuropsychopharmacology**. 2009 Oct; 34(11):2359-67.
7. Fitzgerald PB, Maller JJ, Hoy K, **Farzan F**, Daskalakis ZJ. GABA and cortical inhibition in motor and non-motor regions using combined TMS-EEG: a time analysis. **Clinical Neurophysiology**. 2009 Sep;120(9):1706-10.
8. Rusjan PM, Barr MS, **Farzan F**, Arenovich T, Fitzgerald PB, Daskalakis ZJ. Optimal TMS coil placement for targeting the DLPFC using novel MRI-Guided neuronavigation. **Human Brain Mapping**. 2010 Nov;31(11):1643-52.
9. **Farzan F**, Barr MS, Levinson AL, Chen R, Wong W, Fitzgerald PB, Daskalakis ZJ. Evidence for gamma inhibition deficits in the dorsolateral prefrontal cortex of patients with schizophrenia. **Brain**. 2010 May;133(Pt 5):1505-14.
10. **Farzan F**, Barr MS, Levinson AJ, Chen R, Wong W, Fitzgerald PB, Daskalakis ZJ. J Neurophysiol. Reliability of long interval cortical inhibition in healthy human subjects: A TMS-EEG Study. **Journal of Neurophysiology**. 2010 Sep;104(3):1339-46.
11. Barr MS, **Farzan F**, Tran LC, Chen R, Fitzgerald PB, Daskalakis ZJ. Evidence for excessive frontal evoked gamma oscillatory activity in schizophrenia during working memory. **Schizophrenia Research**. 2010 Aug;121(1-3):146-52.
12. Voineskos AN*, **Farzan F***, Barr MS, Lobaugh NJ, Mulsant BH, Chen R, Fitzgerald PB, Daskalakis ZJ. The role of the corpus callosum in TMS-induced interhemispheric signal propagation. **Biological Psychiatry**. 2010 Nov1; 68(9):825-31. * shared first authorship.
13. Hoppenbrouwers SS*, **Farzan F***, Barr MS, Voineskos AN, Schutter DJLG, Fitzgerald PB, Daskalakis ZJ. Personality goes a long a way: an interhemispheric connectivity study. **Frontiers in Psychiatry**. 2010 Nov 22;1:140. * shared first authorship.
14. Sun Y, **Farzan F**, Bar MS, Kirihara K, Fitzgerald PB, Light GA, Daskalakis ZJ. Gamma oscillations in schizophrenia: mechanism and clinical significance. **Brain Research**. 2011 Sep;1413:98.

15. Barr MS, **Farzan F**, Wing VC, George TP, Fitzgerald PB, Daskalakis ZJ (2011). Repetitive Transcranial Magnetic Stimulation and Addiction. **International Review of Psychiatry**. 2011 Oct; 23(5).
16. Barr MS, **Farzan F**, Tran LC, Fitzgerald PB, Daskalakis ZJ. A Randomized Controlled trial of bilateral prefrontal cortex repetitive transcranial magnetic stimulation in the treatment of negative symptoms in schizophrenia. **Brain Stimulation**. 2012 Jul;5(3):337-46.
17. Barr MS, **Farzan F**, Arenovich T, Chen R, Fitzgerald PB, Daskalakis ZJ. The effect of repetitive transcranial magnetic stimulation on gamma oscillatory activity in schizophrenia **PLoS ONE**. 2011;6(7):e22627.
18. Radhu N, Daskalakis ZJ, Guglietti CL, **Farzan F**, Arpin-Cribbie CA, Fitzgerald PB, Ritvo P. Cognitive behavioral therapy-related increases in cortical inhibition in problematic perfectionists. **Brain Stimulation**. 2012 Jan; 5(1):44-54.
19. Daskalakis ZJ, **Farzan F**, Radhu N, Fitzgerald PB. Combined transcranial magnetic stimulation and electroencephalography: its past, present and future. **Brain Research**. 2012 Jun;1463:93-107.
20. Barr MS, **Farzan F**, Davis KD, Fitzgerald PB, Daskalakis ZJ. Measuring GABAergic inhibitory activity with TMS-EEG and its potential clinical Application for chronic pain. **Journal of Neuroimmune Pharmacology**. 2012 Jun.
21. **Farzan F**, Barr MS, Sun Y, Fitzgerald PB, Daskalakis ZJ. Transcranial Magnetic Stimulation on the Generation and Inhibition of Gamma Oscillations in Schizophrenia. **Annals of the New York Academy of Sciences**. 2012 Aug;1265(1):25.
22. Barr MS, **Farzan F**, Rajji TK, Voineskos AN, Blumberger DM, Arenovich T, Fitzgerald PB, Daskalakis ZJ. Can Repetitive Magnetic Stimulation Improve Cognition in Schizophrenia? Pilot Data from a Randomized Control Trial. **Biological Psychiatry**. 2013 Mar 15; 73(6):510-7.
23. Frantseva M, Cui RJ, **Farzan F**, Chinta L, Perez Velazquez JL, Daskalakis ZJ. Disrupted cortical conductivity in schizophrenia: A TMS-EEG study. **Cerebral Cortex**. 2014 Jan; 24(1):211-21.
24. **Farzan F**, Wu Y, Manor B, Anastasio EM, Lough M, Novak V, Greenstein PE, Pascual-Leone A. Cerebellar TMS in treatment of a patient with cerebellar ataxia: Evidence from clinical, biomechanics and neurophysiological assessments. **Cerebellum**. 2013 Oct;12(5):707-12.
25. Freitas C, **Farzan F**, Pascual-Leone A. Assessing brain plasticity across the lifespan: Why, how, and what is the ultimate goal? **Frontiers Neuroscience**. 2013;7:42.
26. **Farzan F**, Barr MS, Hoppenbrouwers SS, Fitzgerald PB, Chen R, Pascual-Leone A, Daskalakis ZJ. The EEG correlates of the TMS-induced EMG silent period in humans. **NeuroImage**. 2013 Dec; 83:120-34.
27. Garcia Dominguez L , Radhu N, **Farzan F**, Daskalakis ZJ, Characterizing Long Interval Cortical Inhibition over the Time-Frequency Domain., **PLoS ONE**, 9(3): e92354.
28. Morrison JA, **Farzan F**, Fremouw T, Sayegh R, Covey E, Faure PA. Organization and Trade-off of Spectro-Temporal Tuning Properties of Duration-Tuned Neurons in the Mammalian Inferior

- Colliculus. **Journal of Neurophysiology**. 2014 May; 111(10):2047-60.
29. Rajji TK, Sun Y, Zomorodi-Moghaddam R, **Farzan F**, Blumberger DM, Mulsant BH, Fitzgerald PB, Daskalakis ZJ. PAS-Induced Potentiation of Cortical Evoked Activity in the Dorsolateral Prefrontal Cortex. **Neuropsychopharmacology**. 2013 Nov;38(12):2545-52.
 30. **Farzan F**, Boutros NN, Blumberger DM, Daskalakis ZJ. What Does the Electroencephalogram Tell Us About the Mechanisms of Action of ECT in Major Depressive Disorders? **Journal of ECT**. 2014 Jun; 30(2):98-106.
 31. Rogasch NC, Thomson RH, **Farzan F**, Fitzgibbon BM, Bailey NW, Hernandez-Pavon JC, Daskalakis ZJ, Fitzgerald PB. Removing artifacts from TMS-EEG recordings using independent component analysis: Importance for assessing prefrontal and motor cortex network properties. **NeuroImage**. 2014 Jul 25;101C:425-439.
 32. Sun Y, **Farzan F**, Garcia Dominquez L, Barr MS, Giacobbe P, Lozano AM, Wong W, Daskalakis ZJ. A Novel Method for Removal of Deep Brain Stimulation Artifact from Electroencephalography. **Journal of Neuroscience Methods**. 2014 Nov 30; 237:33-40.
 33. Halko MA, **Farzan F**, Eldaief MC, Schmahmann JD, Pascual-Leone A. Intermittent theta-burst stimulation of the lateral cerebellum increases functional connectivity of the default network. **Journal of Neuroscience**. 2014 Sep 3; 34(36):12049-56.
 34. Radhu N, Garcia Dominguez L, **Farzan F**, Richter MA, Sernalul M, Chen R, Fitzgerald PB, Daskalakis ZJ. Evidence for Inhibitory Deficits in the Prefrontal Cortex in Schizophrenia. **Brain**. 2015 Feb; 138(Pt 2):483-97.
 35. Vernet M, Brem AK, **Farzan F**, Pascual-Leone A. Synchronous and opposite roles of the parietal and prefrontal cortices in bistable perception: a double-coil TMS-EEG study. **Cortex**. 2015 Mar; 64:78-88.
 36. Moreno S, **Farzan F**. Music Training and Inhibitory Control: a Multidimensional Model. **Annals of the New York Academy of Sciences**. 2015 Mar; 1337:147-52.
 37. Khanna A, Pascual-Leone A, **Farzan F**. Reliability of Resting-State Microstate Features in Electroencephalography. **PLOS ONE**. 2014 Dec 5;9(12):e114163.
 38. Khanna A, Pascual-Leone A, Michel CM, **Farzan F**. Microstates in resting-state EEG: Current status and future directions. **Neuroscience and Biobehavioral Reviews**. 2014 Dec 17.
 39. Kaster TS, de Jesus DR, Radhu N, **Farzan F**, Blumberger DM, Rajji TK, Fitzgerald PB, Daskalakis ZJ. Clozapine potentiation of GABA mediated cortical inhibition in treatment resistant schizophrenia. **Schizophrenia Research**. 2015 Jul; 165(2-3):157-62.
 40. Lam RW, Milev R, Rotzinger S, Andreatza AC, Blier P, Brenner C, Daskalakis ZJ, Dharsee M, Downar J, Evans KR, **Farzan F**, Foster JA, Frey BN; Geraci J, Giacobbe P, Feilotter HE, Hall GB, Harkness KL, Hassel S, Ismail Z, Leri F, Iotti M, MacQueen G, McAndrews MP, Minuzzi L, Müller DJ, Parikh SV, Placenza FM, Quilty LC, Ravindran AV, Salomons TV; Soares CN, Strother SC, Turecki G, Vaccarino AL, Vila-Rodriguez F, Kennedy SH. Discovering biomarkers for antidepressant response: Protocol from the Canadian Biomarker Integration Network in Depression (CAN-BIND)

- and clinical characteristics of the first patient cohort. **BMC Psychiatry**. Accepted. 2016
41. Lett TA, Kennedy JL, Radhu N, Dominguez LG, Chakravarty MM, Nazeri A, **Farzan F**, Walter H, Heinz A, Mulsant BH, Daskalakis ZJ, Voineskos AN. Prefrontal White Matter Structure Mediates the Influence of GAD1 on Working Memory. **Neuropsychopharmacology**. 2016 Jan 29.
 42. Sun Y, **Farzan F**, Mulsant BH, Rajji TK, Fitzgerald PB, Barr MS, Downar J, Wong W, Blumberger DM, Daskalakis ZJ. Indicators for Remission of Suicidal Ideation Following Magnetic Seizure Therapy in Patients with Treatment-Resistant Depression. **JAMA Psychiatry**. 2016 Mar 16
 43. **Farzan F**, Pascual-Leone A, Schmahmann JD, Halko M. Enhancing the Temporal Complexity of Distributed Brain Networks with Patterned Cerebellar Stimulation. **Scientific Reports**. 2016 Mar 24; 6:23599.
 44. Noda Y, Cash RF, Zomorodi R, Garcia Dominguez L, **Farzan F**, Rajji TK, Barr MS, Chen R, Daskalakis ZJ, Blumberger DM. A combined TMS-EEG study of short-latency afferent inhibition in the motor and dorsolateral prefrontal cortex. **Journal of Neurophysiology**. 2016 May 25:jn.00260.2016. doi: 10.1152/jn.00260.2016
 45. Frehlich M, Dominguez LG, Atluri S, Radhu N, Sun Y, Daskalakis ZJ, **Farzan F**. Unbiased cluster estimation of electrophysiological brain response. **Journal of Neuroscience Methods**. 2016 Sep 15;271:43-9. doi: 10.1016/j.jneumeth.2016.06.020. Epub 2016 Jun 23
 46. Bhandari A, Radhu N, **Farzan F**, Mulsant BH, Rajji TK, Daskalakis ZJ, Blumberger DM. A meta-analysis of the effects of aging on motor cortex neurophysiology assessed by transcranial magnetic stimulation. **Clinical Neurophysiology** 2016 Aug;127(8):2834-45. doi: 10.1016/j.clinph.2016.05.363. Epub 2016 Jun 8.
 47. Cash RF, Noda Y, Zomorodi R, Radhu N, **Farzan F**, Rajji TK, Fitzgerald PB, Chen R, Daskalakis ZJ, Blumberger DM. Characterization of Glutamatergic and GABAA-Mediated Neurotransmission in Motor and Dorsolateral Prefrontal Cortex Using Paired-Pulse TMS-EEG. **Neuropsychopharmacology**. 2016 Aug 17. doi: 10.1038/npp.2016.133.
 48. Farzan F, Vernet M, Shafi MD, Rotenberg A, Daskalakis ZJ, Pascual-Leone A. Characterizing and Modulating Brain Circuitry through Transcranial Magnetic Stimulation Combined with Electroencephalography. *Front. Neural Circuits*, 22 September 2016. <http://dx.doi.org/10.3389/fncir.2016.00073>.
 49. Atluri S, Frehlich M, Mei Y, Garcia Dominguez L, Rogasch N, Wong W, Daskalakis ZJ, **Farzan F**. TMSEEG: A MATLAB-Based Graphical User Interface for Processing Electrophysiological Signals during Transcranial Magnetic Stimulation. **Frontiers in Neural Circuits**. 10: 78.doi:10.3389/fncir.2016. 000 78.
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Patents

Title: METHODS OF USING BRAIN TEMPORAL DYNAMICS

Co-Inventor(s)	Country	Date Filed	Date Issued	Patent #
Faranak Farzan	USA	Dec 5, 2017	NA	15/832