

# Jed A. Meltzer

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**INTERESTS:** I am a cognitive neuroscientist investigating issues in language processing and injury-induced neural plasticity, with the goal of developing rehabilitation programs for brain injury based on the biological mechanisms that underlie successful recovery. I am strongly interested in the applications of signal processing, statistics, and computational linguistics to the investigation of human language and the development of technology based on neuroscience research.

## **EDUCATION:**

Ph.D. in Neuroscience, 2006.  
Yale University, New Haven, CT  
Dissertation Title: Cognitive and Electrophysiological Aspects of Task-Induced Deactivation in Functional MRI.  
Advisor: R. Todd Constable, Ph.D.

B.S. in Neuroscience, B.A. in Linguistics, *Summa Cum Laude*, 1998.  
University of Pittsburgh, Pittsburgh, PA

Special courses:

2003: Summer course in Neuroinformatics, Marine Biological Laboratory, Woods Hole, MA.

2013: Intensive course in Transcranial Magnetic Stimulation, and Transcranial Direct Current Stimulation, Harvard University.

## **RESEARCH AND PROFESSIONAL HISTORY:**

2017-present: Canada Research Chair (Tier 2) in Interventional Cognitive Neuroscience, University of Toronto

2010-present: Neurorehabilitation Scientist, Rotman Research Institute, Baycrest Hospital, Toronto, Ontario, Canada.

2006-2010: Postdoctoral Fellow, laboratory of Dr. Allen Braun, NIH, Bethesda, MD, USA.

2006: Visiting Researcher, laboratory of Dr. Andreas Ioannides, Riken Brain Science Institute, Wako, Japan.

2000-01: Auditory physiology research, rotation in the laboratory of Dr. Joseph Santos-Sacchi, Yale University.

1998-99: Full-time instructor of English Language, part-time student of Korean Language and Literature, Sogang University, Seoul, South Korea.

### **INVITED MEMBERSHIPS**

Academy of Aphasia, 2018-present

### **AWARDS:**

Fellow's Award for Research Excellence, 2009, NIH Intramural Program

American Epilepsy Society Predoctoral Research Fellowship, 2005.

Travel Award, Organization for Human Brain Mapping, 2005.

National Science Foundation Predoctoral Fellowship, 2001.

Howard Hughes Medical Institute Predoctoral Fellowship Honorable Mention, 2001.

Bradler Award for Excellence in Undergraduate Research, Univ. Pittsburgh, 1998.

**LANGUAGES:** Native English, Fluent Esperanto, Proficient Spanish and French, academic knowledge of Russian, Mandarin Chinese, Japanese, Hebrew, Korean, Italian, Portuguese, German, Arabic (Modern Standard), Ojibwe

**SOFTWARE EXPERIENCE:** Frequent programming in Python, MATLAB, and R. Basic familiarity with C/C++, Java, Perl, and LISP. Expert user of neuroimaging software packages such as AFNI, SPM, FSL, Fieldtrip, LORETA, CTF MEG, Neuroscan, EEGLAB.

### **TEACHING:**

Instructor, Interventional Neuroscience: Brain Hacks and Brain Quacks. University of Toronto, Department of Psychology, Graduate Seminar Course (self-designed). Fall 2018.

TA, Brain and Thought, Yale University, 2001.

TA, Neurobiology Laboratory, Yale University, 2002.

TA, Introduction to Statistics, Yale University, 2003, 2004.

TA, Neuroscience, Johns Hopkins University, Center for Talented Youth, 2000.

### **FUNDING**

#### **Active research grants**

Distinguishing excitatory and inhibitory transcallosal interactions. Natural Sciences and Engineering Research Council of Canada (NSERC) Discovery Grant. April 2019-March, 2024. CAD\$140,000. Role: PI.

Brain stimulation in stroke recovery: Linking short-term physiological effects with long-term benefits. Heart and Stroke Foundation of Canada Grant-in-Aid. July 2019-June 2022. CAD\$279,875. Role: PI. Collaborators: Regina Jokel, Bojana Stefanovic.

Bilateral repetitive transcranial magnetic stimulation in acute post-stroke aphasia: Does it stimulate changes in white matter? Canadian Partnership for Stroke Recovery Catalyst Grant, September 2018-March 2020. CAD\$50,000. Role: Co-investigator. PI: Karine Marcotte.

Canada Research Chair (Tier 2) in Interventional Cognitive Neuroscience. April 2017-March 2022, \$500,000 operating funds, \$376,244 equipment from Canada Foundation for Innovation and Ontario Research Fund – “Interventional Cognitive Neuroscience for Acquired Brain Disorders.”

Boosting Cognitive Reserve through Adult Second Language Acquisition with Duolingo. Centre for Aging and Brain Health Innovation, Industry Innovation Partnership Program. June 1, 2018-November 31, 2019. CAD\$50,000. Role: Research Lead. Co-PIs: Bozena Pajak (Industry lead, Duolingo Inc), Burr Settles.

Treatment of Comorbid Depression and Cognitive Impairment in Older Adults with Alzheimer's Disease Using Deep Transcranial Magnetic Stimulation (dTMS). Centre for Aging and Brain Health Innovation, Canada Israel Collaboration Program. January 1, 2018,-June 30, 2019. CAD\$250,000. Role: Co-PI. PI: Linda Mah.

Memory as a dynamic system (DyMnemo): implications for aging, clinical interventions, and technological innovations. Canada Foundation for Innovation, Innovation Fund. April 2017-March 2022, CAD \$4,654,570 equipment funds. Role: Principal User. Project Leader: Jennifer Ryan.

Augmentation of neurorehabilitation training using targeted brain stimulation. Canada Foundation for Innovation Leader's Opportunity Fund (infrastructure/equipment Grant). February 2014 – January 2019, CAD\$277,791. Role: PI. Co-PIs Asaf Gilboa, Sylvain Moreno.

### **Past research grants**

Evaluation of telerehab effectiveness for post-stroke communication disorders. Heart and Stroke Foundation Canadian Partnership for Stroke Recovery, Telerehabilitation Grants

Program (Matching funds provided by Manitoba Patient Access Network). April 2014-December 2015, CAD\$126,886. Role: PI. Co-PI Allison Baird.

Characterizing functional lesions in stroke recovery using MEG and MRI.  
Hakim Award for Innovative Stroke Research, Centre for Stroke Recovery. June 2012-May 2014, CAD\$100,000. Role: PI. Co-PI Jean J. Chen.

Detection of early cortical pathology using MEG and speech analysis.  
New Investigator Research Grant, Alzheimer's Association, Oct 2012-Sept 2014, USD\$97,090. Role: PI.

Effects of language experience and education on brain functional connectivity.  
University of Toronto / University of São Paulo Joint Research Program. May 1, 2013-April 30, 2015. CAD\$39,880. Role: PI, jointly with Cheryl Grady, Leticia Mansur, Ricardo Nitrini.

Investigating treatment-induced plasticity after aphasia therapy. Heart and Stroke Foundation Centre for Stroke Recovery Catalyst Grant. April 1, 2013-March 31, 2014, CAD\$49,172. Role: PI, jointly with Elizabeth Rochon and Carol Leonard.

Behavioral and eye movement indices of cognitive and neural integrity in aging.  
CIHR Operating Grant. January 1, 2013-December 31, 2017, CAD\$1,150,000.  
Role: Co-applicant. PI: Jennifer Ryan.

Effects of Noninvasive Brain Stimulation on pathological perilesional activity in stroke.  
Heart and Stroke Foundation Canadian Partnership for Stroke Recovery Catalyst Grant. July 1, 2016 - December 31, 2017, CAD\$50,000. ROLE: PI. Co-investigators: Regina Jokel, Paul Verhoeff

Individually optimized brain stimulation in dementia using MEG. Ontario Brain Institute Neurodegeneration Basic Science Program (Operating Grant). March 2014-February 2018, CAD\$726,655. Role: PI. Co-PIs Faranak Farzan, Regina Jokel, Frank Rudzicz.

### **Training grants / fellowships with laboratory personnel**

Canadian Partnership for Stroke Recovery Trainee Grant. Postdoctoral Fellow: Priyanka Shah-Basak. Title: Functional network properties in post-stroke aphasia and alterations induced by tDCS. Role: PI. CAD\$25,000. July 1, 2017-June 30, 2018.

Mitacs-Accelerate Research Internship. Postdoctoral Fellow: Frank Oppermann, Ph.D. Role: Co-PI, with PI Elizabeth Rochon. Title: Neural Correlates of Aphasia Therapy After Stroke. CAD\$15,000. April 1, 2012-July 31, 2012.

Centre for Stroke Recovery Stimulus Trainee Grant. Graduate Student: Kathleen Fraser. Role: PI, with co-PI Graeme Hirst. Title: Machine Learning Based Analysis of Natural Speech in Stroke and Dementia. CAD\$12,000. April 1, 2012-March 31, 2013.

Centre for Stroke Recovery Non-Catalyst Trainee Grant. Postdoctoral Fellow: Aneta Kielar, Ph.D., and Graduate Student: Ronald Chu. Role: PI, with co-PIs Bernhard Ross and Regina Jokel. Title: MEG-based measures of neuronal pathology in stroke and progressive disease. CAD\$27,971. April 1, 2013-March 31, 2014.

## PUBLICATIONS

† Denotes a trainee working in my laboratory

### Journal articles: 40

Caughlin S, Mehta S, Corriveau H, Eng J, Eskes G, Kairy D, **Meltzer J**, Sakakibara B, Teasell R. Telerehabilitation after stroke: lessons learned from Canadian trials. *Telemedicine and e-Health*, in press.

Kielar A, Shah-Basak PP, Deschamps T, Jokel R, **Meltzer JA**. Slowing is slowing: Delayed neural responses to words are linked to abnormally slow resting state activity in Primary Progressive Aphasia. *Neuropsychologia*, in press.

Rondina II R, Olsen RK, Li L, **Meltzer JA**, Ryan JD. (2019) Age-related changes to oscillatory dynamics during maintenance and retrieval in a relational memory task. *PLoS One*, 14:e0211851.

Hebscher M, **Meltzer JA**, Gilboa A. (2019) A causal role for the precuneus in network-wide theta and gamma oscillatory activity during complex memory retrieval. *Elife*, 8.

Conforto AB, Servinsckins L, Paiva J, Amaro E, Santos DG, Soares P, Pires DS, **Meltzer J**, Plow EB, Freitas PF, Speciali D, Lopes P, Peres MF, Silva GS, Lacerda S, Boasquevisque DS. (2019) Safety of cathodal transcranial direct current stimulation early after ischemic stroke. *Brain Stimulation*, 12:374-376.

†Shah-Basak PP, †Kielar A, Deschamps T, Verhoeff NP, Jokel R, **Meltzer J**. (2019) Abnormal electrophysiological activity in early dementia: relationships with atrophy and cognition. *Human Brain Mapping*, 40(5):1594-1607.

†Chu RKC, **Meltzer JA**. (2019, Feb.) Transcallosal interactions underlying the right visual field advantage in lexical decision, *Human Brain Mapping*, 40(3):818-832.

†Chu RC, **Meltzer JA**, Bitan T. (2018, Dec.) Interhemispheric interactions during sentence comprehension in patients with aphasia. *Cortex*, 109:74-91.

Marcotte K, Laird L, Bitan T, **Meltzer JA**, Graham SJ, Leonard C, Rochon E. (2018) Therapy-induced neuroplasticity in chronic aphasia after phonological component analysis: A matter of intensity. *Frontiers in Neurology*. Published online April 9, 2018.

†Kielar A., Deschamps T., Jokel R., **Meltzer JA.** (2018) Abnormal language-related oscillatory responses in primary progressive aphasia. *NeuroImage: Clinical* 18:560-574.

**Meltzer JA,** Harvey S, Steele R, Baird A. (2018) Computer-based treatment of post-stroke language disorders: A non-inferiority study of telerehabilitation compared to in-person service delivery. *Aphasiology*, 32(3): 290-311. Published online July 20, 2017 DOI: 10.1080/02687038.2017.1355440

**Meltzer JA,** †Kielar A, Panamsky L, Links K., Deschamps T, Leigh RC. (2017, May) Electrophysiological signatures of phonological and semantic maintenance in sentence repetition. *NeuroImage*, 156: 302-314. Published online, May 17, 2017.

Jokel R, **Meltzer J,** J. D.R., L. D.M., J. J.C., E. A.N., C. D.T. (2017, April) Group intervention for individuals with primary progressive aphasia and their spouses, who comes first? *J. Comm. Dis.*, 66: 51-64.

Marcotte K, Graham NL, Fraser KC, **Meltzer JA,** Tang-Wai D, Chow TW, Freedman M, Leonard C, Black SE, Rochon E (2017, March) White matter disruption and connected speech in non-fluent and semantic variants of primary progressive aphasia. *Dementia and Geriatric Cognitive Disorders Extra*, 7(1): 52-73.

Rondina II R, Curtiss K, **Meltzer JA,** Barense M, Ryan JD (2017, April) The organisation of spatial and temporal relations in memory. *Memory*, 25(4): 436-449.

†Kielar A, Deschamps T, Jokel R., **Meltzer JA** (2016, August). Functional reorganization of language networks for semantics and syntax in chronic stroke: Evidence from MEG. *Human Brain Mapping*, 2016 Aug; 37(8):2869-2893.

†Kielar A, Deschamps T, †Chu R, Jokel R, Khatamian YB, Chen JJ, **Meltzer JA.** (2016, March) Identifying dysfunctional cortex: distinguishing the effects of stroke and aging on resting-state dynamics in MEG and fMRI. *Frontiers in Aging Neuroscience*, 2016 Mar 3; 8:40.

**Meltzer JA,** Rose NS, Panamsky L, Leigh RC, Links KA, Silberberg A, Madani N, Deschamps T. (2016, Feb.) Semantic and phonological contributions to immediate and delayed cued sentence recall. *Memory and Cognition*, 44(2): 307-329

Rondina II R, Olsen R, McQuiggan D, Fatima Z, Li L, Oziel E, **Meltzer JA,** Ryan JD. (2015, Oct.) Age-related changes to oscillatory dynamics in hippocampal and cortical networks. *Neurobiology of Learning and Memory*. Oct;134 Pt A:15-30.

†Fraser KC, **Meltzer JA,** Rudzicz F. (2015, Oct.) Linguistic features identify Alzheimer's disease in narrative speech. *Journal of Alzheimer's Disease*, 2015; 49(2): 407-422.

†Chu R, Braun AR, **Meltzer JA**. (2015, April) MEG-based detection and localization of electrophysiological slowing in perilesional cortex in chronic stroke. *NeuroImage: Clinical*. 8: 157-169.

†Kielar A, Panamsky L, Links K, **Meltzer JA**. (2015, Jan) Localization of electrophysiological responses to semantic and syntactic anomalies in language comprehension with MEG. *NeuroImage*. 105: 507-524.

Mansur L, Ortiz KZ, **Meltzer JA**. (2014) Language assessment and treatment in the last decade. *Dement Neuropsychol*. 8(3): 195.

†Kielar A, **Meltzer JA**, Moreno S, Alain C, Bialystok E. (2014, Jun) Oscillatory responses to semantic and syntactic violations. *J. Cogn. Neurosci*. 26(12): 2840-2862. Published online June 4, 2014.

†Fraser KC, **Meltzer JA**, Graham NL, Leonard C, Hirst G, Black C, Rochon E. (2014, Jun) Automated classification of primary progressive aphasia subtypes from narrative speech transcripts. *Cortex*. 55:43-60. Special issue pending on “Language, Computers, and Cognitive Neuroscience.”

Olsen RK, Rondina R, Riggs L, **Meltzer JA**, Ryan JD. (2013, Nov) Hippocampal and neocortical oscillatory contributions to visuospatial binding and comparison. *J Exp Psychol Gen*. 142(4):1335-1345.

**Meltzer JA**, Wagage S, Ryder J, Solomon B, Braun AR. (2013, Jun) Adaptive significance of right hemisphere activation in aphasic language comprehension. *Neuropsychologia*. 2013 Jun;51(7):1248-1259.

**Meltzer JA**, Braun AR (2013, Jan) P600-like positivity and left anterior negativity responses are elicited by semantic reversibility in nonanomalous sentences. *Journal of Neurolinguistics*. 26(1):129-148.

**Meltzer JA** (2012) Localizing the component processes of lexical access using modern neuroimaging techniques. *The Mental Lexicon*. 7(1): 91-118.

**Meltzer JA**, Braun AR (2011, Feb) An EEG-MEG dissociation between online syntactic comprehension and posthoc reanalysis. *Frontiers in Human Neuroscience* 2011 Feb 4;5:10. PMID: PMC3035013

Picchioni D, Horovitz SG, Fukunaga M, Carr WS, **Meltzer JA**, Balkin TJ, Duyn JH, Braun AR. (2011, Feb) Infraslow EEG oscillations organize large-scale cortical-subcortical interactions during sleep: a combined EEG/fMRI study. *Brain Research* 2011 Feb 16;1374:63-72. PMID: PMC3031777

**Meltzer JA**, McArdle JJ, Schafer RJ, Braun AR (2010, Aug) Neural aspects of sentence comprehension: syntactic complexity, reversibility, and reanalysis. *Cereb Cortex*,

20(8):1853-1864. PMCID: PMC2901020

**Meltzer JA**, Postman-Caucheteux WA, McArdle JJ, Braun AR (2009, Aug) Strategies for longitudinal neuroimaging studies of overt language production. *NeuroImage*, 47(2):745-755. PMCID: PMC2700210

Bender G, Veldhuizen MG, **Meltzer JA**, Gitelman DR, Small DM (2009) Neural correlates of evaluative compared to passive tasting. *European Journal of Neuroscience*, 30(2):327-338. PMCID: PMC2776645

**Meltzer JA**, Fonzo GA, Constable RT (2009, Jan) Transverse patterning dissociates human EEG theta power and hippocampal BOLD activation. *Psychophysiology* 46: 153-162. PMCID: PMC2675275

**Meltzer JA**, Zaveri HP, Goncharova II, Distasio MM, Papademetris X, Spencer SS, Spencer DD, Constable RT (2008, Aug) Effects of working memory load on oscillatory power in human intracranial EEG. *Cereb Cortex* 18: 1843-1855. PMCID: PMC2474453

**Meltzer JA**, Negishi M, Constable RT (2008, Apr) Biphasic hemodynamic responses influence deactivation and may mask activation in block-design fMRI paradigms. *Human Brain Mapping* 29(4):385-399. PMCID: PMC3496427

**Meltzer JA**, Negishi M, Mayes LC, Constable RT (2007, Nov) Individual differences in EEG theta and alpha dynamics during working memory correlate with fMRI responses across subjects. *Clin Neurophysiol* 118(11):2419-2436. PMCID: PMC2080790

Ment LR, Peterson BS, **Meltzer JA**, Vohr B, Allan W, Katz KH, Lacadie C, Schneider KC, Duncan CC, Makuch RW, Constable RT (2006, Sep) A functional magnetic resonance imaging study of the long-term influences of early indomethacin exposure on language processing in the brains of prematurely born children. *Pediatrics* 118(3):961-970. PMCID: PMC2364718

**Meltzer JA**, Constable RT (2005, Jan 15) Activation of human hippocampal formation reflects success in both encoding and cued recall of paired associates. *NeuroImage* 24(2):384-397.

**Meltzer J**, Santos-Sacchi J (2001, Nov 9) Temperature dependence of non-linear capacitance in human embryonic kidney cells transfected with prestin, the outer hair cell motor protein. *Neurosci Lett* 313(3):141-144. PMID: 11682147

## **Book Chapters: 2**

**Meltzer, JA.** Brain imaging and conceptions of the lexicon. In *Methodological and Analytic Frontiers in Lexical Research*. (eds. G. Libben, G. Jarema, C. Westbury) 2012,



John Benjamins, Amsterdam. (Also published as a journal article in *The Mental Lexicon*).

**Meltzer JA**, Constable RT. Long-term memory: Do incremental signals reflect engagement of cognitive processes? In *Brain Energetics and Neuronal Activity: Applications to fMRI and Medicine*. (eds. R.G. Shulman, and D.L. Rothman). 2004, Wiley, Hoboken, NJ.

**Published conference papers (peer reviewed):**

Fraser KC, Hirst G, Graham NL, **Meltzer JA**, Black SE, Rochon E. Comparison of different feature sets for identification of variants in progressive aphasia. In *Proceedings of the 1st Workshop on Computational Linguistics and Clinical Psychology (CLPsych)*, pages 17–26, Baltimore, Maryland, June 27, 2014. Association for Computational Linguistics.

Fraser KC, Hirst G, **Meltzer JA**, Mack JE, Thompson CK. Using statistical parsing to detect agrammatic aphasia. In *Proceedings of the 2014 Workshop on Biomedical Natural Language Processing (BioNLP)*, pages 134–142, Baltimore, Maryland, June 28, 2014. Association for Computational Linguistics.

**Manuscripts submitted:**

†Chu RKC, Joordens S, **Meltzer JA**. Transcallosal transfer of semantic information facilitates bilateral word recognition, *Revision invited, Journal of Experimental Psychology: General*

†François-Nienaber A, †Bellana B, Deschamps T., Farzan F, **Meltzer JA**. Theta-burst stimulation modulates oscillatory neural activity primarily for ipsilateral, not contralateral, finger movements. *Revision invited, Frontiers in Human Neuroscience*

Edwards J; Black S, Boe S, Boyd L, Chaves A, Chen R, Dukelow S, Fung J, Kirton A; **Meltzer J**, Moussavi Z, Neva J, Paquette C, Ploughman M, Pooyania S, Rajji T, Roig M, Tremblay F, Thiel Alex. Canadian Platform for Trials in Non-Invasive Brain Stimulation (CanStim) Consensus Recommendations for Repetitive Transcranial Magnetic Stimulation in Upper Extremity Motor Stroke Rehabilitation Trials. *Submitted*

**Manuscripts in preparation :**

†Oppermann F, †Kielar A, Panamsky L, **Meltzer JA**. Oscillatory brain activity reflects semantic and phonological activation during sentence planning.

†François-Nienaber A., Deschamps T., †Sivaratnam G, †Hebscher M., †Bagherzadeh M., Farzan F, **Meltzer JA**. Effects of motor cortex HD-TDCS on neural reactivity for

voluntary cued finger movements.

†Cotosck K, **Meltzer JA**, Aluisio S, Mansur L, Amaro E. Engagement of semantic and phonological networks during word monitoring in a familiar and unfamiliar language.

## CONFERENCE PRESENTATIONS

### Oral: 21

Hebscher M, Ibrahim C, **Meltzer JA**, Gilboa A. Precuneus stimulation alters the spatiotemporal neural dynamics of autobiographical memory. *Society for Neuroscience*, Oct. 23, 2019. Chicago, IL.

†Kielar A (presenting), Jokel R, **Meltzer JA**. Modulation of Task-Related and Resting-State Oscillatory Responses in Primary Progressive Aphasia. *Academy of Aphasia*. Oct. 21-23, 2018. Montreal, QC.

**Meltzer JA**. Neuromodulatory effects of individualized HD-TDCS on resting-state MEG dynamics in chronic post-stroke aphasia. *World Stroke Congress*. Oct. 17-19, 2018. Montreal, QC.

**Meltzer JA**. Effects of noninvasive brain stimulation on pathological perilesional activity in stroke. *Advances in Stroke Recovery*. June 11-12, 2018, Gatineau, QC

†Chu RKC, **Meltzer JA**, Bitan T (presenting). Inhibitory or excitatory connections between hemispheres? Evidence from sentence comprehension in patients with aphasia. *Academy of Aphasia*. Nov. 5-7, 2017. Baltimore, MD.

**Meltzer JA**. How noninvasive brain stimulation can reverse abnormal electrical activity in post-stroke perilesional cortex. *Canadian Stroke Congress*. Sept. 9-11, 2017, Calgary, AB.

**Meltzer JA**. Evaluation of noninvasive brain stimulation treatments for stroke using MEG. *MEG North America Workshop*. Nov. 1-2, 2016, Bethesda, MD

**Meltzer JA**, Harvey S, Steele R, Baird A. Treatment efficacy of telerehabilitation compared to in person speech therapy for post-stroke aphasia: a noninferiority study. *Advances in Stroke Recovery*. September 14, 2016, Quebec City, QC

**Meltzer JA**. Transcallosal inhibition and stroke recovery: Evidence from magnetoencephalography. *North Sea Laterality*. Aug. 31-Sept. 3, 2016. Groningen, Netherlands.

†Chu RKC (presenting), **Meltzer JA**. MEG-based detection of perilesional dysfunction in chronic aphasia. *American Clinical Magnetoencephalography Society*, Feb. 10-11, 2016. Orlando, FL.

**Meltzer JA.** Neural oscillatory activity as a biomarker for response to dementia interventions. *Ontario Neurodegenerative Disease Research Initiative Annual Meeting*, Oct. 28, 2015, London, ON

**Meltzer JA.** Can we beat dementia? The promise of research. *Ontario Society of Medical Technologists Annual Meeting*. September 20, 2015. Toronto, ON.

**Meltzer JA.** Aphasia Recovery: New technology and neuroplasticity. *Advances in Stroke Recovery*. September 17, 2015, Toronto, ON

**Meltzer JA.** Brain electrical activity in dementia: opportunities for detection and intervention. *Ontario Neurodegenerative Disease Research Initiative Annual Meeting*, November 13, 2014. London, ON

**Meltzer JA.** Electrophysiological slowing as a biomarker of localized cortical dysfunction. *19<sup>th</sup> International Conference on Biomagnetism*, August 26, 2014, Halifax, NS, Canada.

**Meltzer JA,** Chu R, Braun AR. Detection and Quantification of Functional Lesions from Slowing in Resting-State MEG. *Canadian Stroke Congress*, October 2013, Montreal, QC

**Meltzer JA.** Characterizing functional lesions in stroke recovery using MEG and MRI. *Centre for Stroke Recovery Annual Scientific Meeting*, October 2013, Montreal, QC

**Meltzer JA.** Assessment of neural function and dysfunction using magnetoencephalography. *University of Sao-Paulo / University of Toronto Joint Neuroscience Conference*, December, 2012, Sao Paulo, Brazil

**Meltzer JA.** Pathways to language recovery in aphasia. *Centre for Stroke Recovery Annual Scientific Meeting*, May 2012, Ottawa, ON.

**Meltzer JA,** McArdle JJ, Braun AR. Dissociating between syntactic specialization and working memory in Broca's area. *Society for Neuroscience*, November 2008, Washington, DC.

**Meltzer JA,** Negishi M, Constable RT. Correspondence of EEG theta and alpha dynamics with negative BOLD in a working memory task. *Society for Neuroscience*, October, 2006, Atlanta, GA.

### **Posters: 53**

Edwards J, Black S, Boe S, Boyd L, Chaves AR, Chen R, Dukelow S, Fung J, Kirton A, **Meltzer J,** Moussavi Z, Paquette C, Ploughman M, Pooyania S, Rajii T, Roig M, Tremblay F, Thiel A. Canadian Platform for Trials in Non-Invasive Brain Stimulation (CanStim) Consensus Recommendations for Repetitive Transcranial Magnetic

Stimulation in Upper Extremity Motor Stroke Rehabilitation Trials. *Canadian Stroke Congress*. Oct. 3-5, 2019. Ottawa, ON.

Brisebois A, Brambati S, Rochon E, de Beaumont L, Desautels A, Descoteaux M, Higgins J, **Meltzer JA**, Courson M, Marcotte K. Bilateral repetitive transcranial magnetic stimulation in acute post-stroke aphasia: Does it stimulate changes in white matter? *Canadian Stroke Congress*. Oct. 3-5, 2019. Ottawa, ON.

†Shah-Basak PP, Sivaratnam G, Teti S, Francois-Nienaber A, Deschamps T, Meltzer JA. (2018) Neuromodulatory effects of individualized tDCS on MEG dynamics in chronic post-stroke aphasia. *Academy of Aphasia*, Quebec City, QC, October 21-23, 2018.

†Shah-Basak PP, Deschamps T, Francois-Nienaber A, Teti S, Jokel R, Meltzer JA. Spontaneous oscillatory activity in response to intensive tDCS and anomia therapy in primary progressive aphasia: A case series. *Academy of Aphasia*, Quebec City, QC, October 21-23, 2018.

†Shah-Basak PP, Sivaratnam G, Teti S, Francois-Nienaber A, Deschamps T, Meltzer JA. (2018) Neuromodulatory effects of individualized tDCS on MEG dynamics in chronic post-stroke aphasia. *Society for the Neurobiology of Language*, Quebec City, QC, August 16-18, 2018.

Meltzer JA, †Chu R (2018). Asymmetrical connectivity underlying the right visual field advantage in lateralized lexical decision. *Society for the Neurobiology of Language*, Quebec City, QC, August 16-18, 2018.

Shah-Basak PP, Sivaratnam G, Teti S, Francois-Nienaber A, Deschamps T, Kielar A, Meltzer JA. (2018) Frequency-dependent functional connectivity underlying language reorganization in chronic post-stroke aphasia. *Advances in Stroke Recovery*, June 11-12, 2018, Gatineau, QC

Hebscher M, Meltzer JA, Gilboa A. (2018) A causal role for the precuneus in autobiographical memory through network-wide theta/gamma oscillations. *International Conference on Learning and Memory*, April 18-22, 2018, Irvine, CA.

Kielar A., Deschamps T., Jokel R., Meltzer JA. (2017) Oscillatory Abnormalities in Primary Progressive Aphasia. *Society for the Neurobiology of Language*, November 8-10, 2017, Baltimore, MD.

Korcovelos EA, Fraser KC, Meltzer JA, Hirst G, Rudzicz F. (2017). Studying neurodegeneration with automated linguistic analysis of speech data. *Alzheimer's Association International Conference*, July 16-20, 2017, London, UK.

Francois-Nienaber A, Deschamps T, Farzan F, Meltzer JA. (2017). Effects of high-definition TDCS on oscillatory activity. *27th Annual Rotman Research Institute Conference*, March 21-22, 2017, Toronto, ON

Deschamps T., Kielar A., Jokel R., Meltzer JA. (2017) Resting state MEG biomarkers of cognitive status across healthy aging and two forms of dementia. 27th Annual Rotman Research Institute Conference, March 21-22, 2017, Toronto, ON

Meltzer JA, Francois-Nienaber A, Bellana B, Hebscher M, Deschamps T, Farzan F. (2016) Theta burst stimulation primarily modulates motor cortex engagement for ipsilateral, not contralateral, finger movements. Society for Neuroscience, Nov. 12-16, 2016, San Diego, CA

Meltzer JA, Francois-Nienaber A, Bellana B, Hebscher M, Deschamps T, Farzan F. (2016) Theta burst stimulation primarily modulates motor cortex engagement for ipsilateral, not contralateral, finger movements. MEG North America Workshop, Nov 1-2. Bethesda, MD.

Meltzer JA, Kielar A, Chu R, Deschamps T (2016). Spontaneous MEG: a biomarker for cortical health in aging, stroke, dementia, and ordinary cognitive decline. 26th Annual Rotman Research Institute Conference, March 21-22, 2016, Toronto, ON

Harvey S, Baird A, Meltzer JA (2015). Evaluation of telerehab effectiveness for post-stroke communication disorders. *Canadian Stroke Congress*, Sept. 17-19, 2015, Toronto, ON.

Kielar A, Jokel R, Chu RKC, Deschamps T, Panamsky L, Chen JJ, Khatamian YB, Meltzer JA (2015). Distinguishing the effects of stroke and healthy aging with resting state MEG and fMRI. *Canadian Stroke Congress*, Sept. 17-19, 2015, Toronto, ON.

Chu R, Bitan T, Braun A, Meltzer JA (2015) The role of right to left hemisphere connectivity in sentence processing in post-stroke aphasia. Cognitive Neuroscience Society 22nd Annual Meeting, March 28-31, 2015, San Francisco, USA.

Chu R, Bitan T, Braun A, Meltzer JA (2015) The role of right to left hemisphere connectivity in sentence processing in post-stroke aphasia. 25th Annual Rotman Research Institute Conference, March 9-11, 2015, Toronto, ON

Kielar A, Jokel R, Chu RKC, Deschamps T, Panamsky L, Chen JJ, Khatamian YB, Meltzer, JA (2015). Altered neural dynamics in stroke and aging: sensitivity of resting state MEG vs fMRI. 25th Annual Rotman Research Institute Conference, March 9-11, 2015, Toronto, ON

Meltzer JA, Kielar A, D'Angelo MC, Ryan JD, Barense MD (2015). Electrophysiological abnormalities in older adults at risk for dementia: language lateralization and resting state changes. 25th Annual Rotman Research Institute Conference, March 9-11, 2015, Toronto, ON

Kielar A, Deschamps T, Chu R, Panamsky L, Khatamian YB, Chen JJ, Meltzer JA

(2014). Stroke induced reorganization of the neural networks for sentence comprehension, and relationship to perilesional dysfunction revealed by MEG and ASL. 52nd Meeting of the Academy of Aphasia, Miami, FL, USA, October 5-7, 2014.

Chu R, Kielar A, Deschamps T, Khatamian Y, Chen JJ, Braun AR, Meltzer JA (2014). Characterization of pathological perilesional activity in stroke using multiscale entropy. 19<sup>th</sup> International Conference on Biomagnetism, August 24-28, 2014. Halifax, NS, Canada.

Meltzer JA, Kielar A, Rose NS, Panamsky L, Leigh RC, Links KA (2014). MEG activity for phonological and semantic resources in verbal short-term memory. 19<sup>th</sup> International Conference on Biomagnetism, Halifax, NS, Canada.

Kielar A, Deschamps T, Chu R, Panamsky L, Khatamian YB, Chen JJ, Meltzer JA (2014). Functional reorganization of the neural networks for language after stroke and relationship to perilesional dysfunction revealed by MEG. Advances in Stroke Recovery Meeting, Ottawa, Ontario, June 9-10th, 2014.

Kielar A, Meltzer JA, Moreno S, Alain C, Bialystok E (2014). Oscillatory responses to sentence embedded semantic and syntactic violations: Effect of bilingualism. 8th Annual Canadian Association for Neuroscience Meeting, Montreal, Quebec, May 25-28th, 2014.

Meltzer JA, Kielar A, Rose NS, Panamsky L, Leigh RC, Links KA (2014). Phonological and semantic contributions to short-term and long-term verbal recall. *Rotman 24th Annual Neuroscience Conference: Memory and the Brain in Health and Disease*, March, 2014, Toronto, ON, Canada.

Oppermann F, Kielar A, Panamsky L, Meltzer J (2014). Oscillatory brain activity in the alpha and beta band reflect semantic and phonological activation during speech planning. Poster presented at the 8th International Workshop on Language Production. Geneva, Switzerland.

Oppermann F, Kielar A, Panamsky L, Meltzer J (2014). Desynchronisation of oscillatory brain activity reflects semantic and phonological processing in a language task [Abstract]. In A. Schuetz, K. Drewing, & K.R. Gegenfurtner (Eds.), Abstracts of the 56. Conference of Experimental Psychologists (p. 195). Lengerich: Pabst.

Oppermann F, Kielar A, Panamsky L, Meltzer JA (2013). Alpha and beta power decrease as a neural correlate of semantic and phonological processing in a language task. 54th Annual Meeting of the Psychonomic Society, November 14th-17th, 2013, Toronto, ON

Rochon E, Marcotte K, Laird L, Simic T, Grady C, **Meltzer J**, Leonard C. Extending PCA Aphasia Treatment to an Individual with Bilateral Lesions: A Pilot Study. Canadian Stroke Congress, Oct. 2013, Montreal QC.

†Wen MC, Gilboa A, **Meltzer J**, Lee SH, Liu HL. White matter integrity, chronic illness

and executive function in mild late-life depression. *International Society of Vascular Behavioural and Cognitive Disorders*, June, 2013, Toronto, ON.

†Kielar A., Panamsky L., **Meltzer J.** Brain networks for semantic and syntactic processing: Converging evidence from MEG and DTI. 7th Annual Canadian Neuroscience Meeting, Toronto, Ontario, Canada, May 2013.

†Kielar A, Panamsky L, **Meltzer, J.** Localization of neural networks for semantic and syntactic processing using MEG. 20th Annual Cognitive Neuroscience Meeting, San Francisco, CA, USA, April 15th, 2013.

†Chu R, **Meltzer J.** Noninvasive characterization of perilesional electrical activity. *Rotman 23rd Annual Neuroscience Conference: Brain Plasticity and Rehabilitation*, March, 2013, Toronto, ON.

†Kielar A, Panamsky L, **Meltzer J.** Mapping brain networks for semantic and syntactic processing using MEG in healthy and damaged brains. *Rotman 23rd Annual Neuroscience Conference: Brain Plasticity and Rehabilitation*, March, 2013., Toronto, ON

Bhatt O, **Meltzer J**, Ross B, Chen JJ. Stability of Resting-State Brain Activity Fluctuations Across Time: Evidence from fMRI and MEG. *International Society for Magnetic Resonance in Medicine*, April, 2013, Salt Lake City, UT

Marcotte K, Graham NL, Black SE, Tang-Wai DF, Chow TW, Freedman M, **Meltzer JA**, Leonard C, Rochon E. White matter disruption and language processing in fluent and nonfluent variants of primary progressive aphasia. *Neurobiology of Language*, October 2012, San Sebastian, Spain

†Kielar A, Panamsky L, Links K, **Meltzer JA.** Mapping of neural generators of electrophysiological responses to semantic and syntactic anomalies using MEG. *International Conference on Biomagnetism*, August 2012, Paris.

**Meltzer JA**, Braun AR. Statistical mapping of pathological slow activity in resting-state MEG data. *International Conference on Biomagnetism*, August 2012, Paris.

**Meltzer JA.** Detection of focal cortical dysfunction from resting-state MEG data. *Rotman 22nd Annual Neuroscience Conference: Mild Cognitive Impairment*, March 2012, Toronto, ON.

**Meltzer JA**, Braun AR. Adaptive significance of right hemisphere activation in aphasic language comprehension. *Society for Neuroscience*, 2010.

**Meltzer JA**, Braun AR. A dissociation of laterality for language production and comprehension in a subcortical aphasic patient, assessed with MEG and fMRI. *Academy of Aphasia*, October, 2009, Boston, MA.

**Meltzer JA**, Braun AR. Tracking sentence comprehension in real time using beamforming analysis of beta desynchronization. *Human Brain Mapping*, June, 2009, San Francisco, CA.

Arora J, Nallakkandi R, Relwani R, **Meltzer J**, Sherwin R, Constable R. Effects of Hypoglycemia on Working Memory: A functional MRI study. *Human Brain Mapping*, 2006.

**Meltzer JA** Negishi M, Constable RT. The contribution of the BOLD poststimulus undershoot to block-design subtraction outcomes in cognitive fMRI. *Proc. Intl. Soc. Mag. Reson. Med*, 2006

**Meltzer JA**, Negishi M, Constable RT. EEG Theta Rhythm and FMRI deactivations in Mapping of Human Memory. *American Epilepsy Society*, 2005.

**Meltzer JA**, Negishi M, Fonzo G, Constable RT. Theta power correlates with widespread task-induced deactivations and enhanced post-stimulus hemodynamic undershoots in simultaneous EEG-fMRI. *Society for Neuroscience*, 2005.

**Meltzer JA**, Negishi M, Constable RT. BOLD correlates of alpha and theta power fluctuations in a mental task during simultaneous EEG and fMRI. *Human Brain Mapping*, 2005.

Constable RT, Scouten A, **Meltzer J**, Papademetris X. Spatial resolution, signal-to-noise ratios, and smoothing in multi-subject fMRI. *Human Brain Mapping*, 2004.

**Meltzer JA**, Zaveri HP, Spencer SS, Spencer DD, Constable RT. Individual variability in spectral correlates of working memory load in scalp and intracranial recordings. *Human Brain Mapping*, 2004.

**Meltzer JA**, Constable RT. Activation of human hippocampal formation reflects success in both encoding and cued recall of paired associates. *Human Brain Mapping*, 2003.

**Meltzer JA**, Olson IR, Constable RT. Medial temporal lobe activation correlates with encoding success for associative memory of novel information. *Society for Neuroscience*, 2001.

**Meltzer J**, Santos-Sacchi J, Folkinshteyn D, Temperature dependence of prestin's nonlinear capacitance. *Society for Neuroscience*, 2001.

**REVIEWER SERVICE**



Alberta Innovates  
Alzheimer's Association  
Annals of Neurology  
Aphasiology  
BMC Neuroscience  
Brain  
Brain Imaging and Behavior  
Brain and Language  
Brain Research  
Brain Topography  
Cerebral Cortex  
Cerebrovascular Diseases  
Clinical Neurophysiology  
Cortex  
Dementia and Neuropsychology  
European Journal of Neuroscience  
Experimental Brain Research  
Frontiers in Aging Neuroscience  
Frontiers in Human Neuroscience  
Frontiers in Neuroscience  
Frontiers in Psychology  
Human Brain Mapping  
Journal of Alzheimer's Disease  
Journal of Cognitive Neuroscience  
Journal of Family Medicine  
Journal of Gerontology: Psychological Sciences  
Journal of Intercultural Ethnopharmacology  
Journal of Neuroscience  
Journal of the Neurological Sciences  
Journal of Pediatric Neurology  
Journal of Rehab Medicine  
Language and Cognitive Processes  
Netherlands Organisation for Scientific Research  
Medical Science Monitor  
Neurobiology of Aging  
NeuroImage  
Neuropsychologia  
Neuroradiology  
Neuroscience  
PLOS One

### **Editorial Service**

Review Editor, Frontiers in Neuroscience, May 2015-Present  
Review Editor, Frontiers in Psychology, May 2015-Present

**Invited Research Presentations:**

Aphasia Institute Webinar Series, March, 2019  
University of Toronto Ebbinghaus Empire Psychology Talks, February, 2019  
Halton-Peel Community Aphasia Programs, October, 2018  
York University Neuroscience Program, October, 2018  
Baycrest Behavioural Neurology Rounds, November, 2017  
National Institutes of Health, Bethesda, MD, October, 2017  
Krembil Neuroscience Institute, Toronto Western Hospital, April, 2017  
Sunnybrook Research Institute, March, 2017  
Baycrest Hospital, Toronto, Neurology Rounds, March, 2017  
March of Dimes Aphasia Program, February, 2017  
University of Toronto Research Ethics Board Retreat, December, 2016  
Bayview High School Bioethics Club, November, 2016  
Baycrest Lightning rounds for visiting students of Peking Univ., July, 2016  
University of Toronto Psycholinguistics Seminar, April, 2016  
Baycrest Hospital, Toronto, Neurology Rounds, March, 2016  
In with Forward (community organization) – Aging and the Brain. March, 2016  
Aphasia Institute, January, 2016  
March of Dimes, November, 2015  
Ontario Society of Medical Technologists Annual Meeting. September, 2015  
University of Toronto Psychology Retreat, May, 2015  
Rotman Research Institute, February, 2015  
Baycrest Hospital, Toronto, Neurology Rounds, February, 2015  
Sunnybrook Health Sciences Centre, Toronto, October, 2014  
Quantified Self Toronto, October, 2014  
Dalhousie University, Halifax, NB, February, 2014  
Centre for Addiction and Mental Health, January, 2014  
University of Sao Paulo, Brazil, November, 2013  
Baycrest Hospital, Toronto, Neurology Rounds, October, 2013  
Alzheimer's Society, York Region, March, 2013  
York-Durham Aphasia Centre, January, 2013  
Toronto Western Neuroimaging Rounds, October, 2012  
Northwestern University, Evanston, IN, June, 2012  
Baycrest Hospital, Toronto, Psychiatry Rounds, February, 2012  
Hospital for Sick Children, Toronto, October, 2011  
Baycrest Hospital, Toronto, Neurology Rounds, October, 2011  
Rotman Research Institute, Toronto, September, 2011  
University of Toronto, Ebbinghaus Symposium, September, 2011  
Dalhousie University, Halifax, NB, July, 2010  
Rotman Institute, Toronto, ON, June, 2010  
McGovern Institute at MIT, May, 2010  
University of Washington, Seattle, WA, March, 2010  
University of Maryland, College Park, MD, November, 2008  
Moss Rehab Institute, Philadelphia, PA, October, 2008  
Washington Speech and Hearing Discussion Group, Bethesda, MD, May, 2007

**Guest course lectures:**

*Imaging in Neurorehabilitation*, University of Toronto, 2011

*Neuroimaging for Speech-Language Pathology*, University of Toronto, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018.

*Aphasia and Recovery*, Translational Neuroscience, University of Maryland, 2010

*Neuroimaging in Aphasia*, Speech and Language Pathology Seminar, University of Maryland, 2009

*Philosophy of Neuroscience*, Principles of Neuroscience, Yale University, 2005.

*Networks and Language*, Systems Neuroscience, Harvard University, 2002.

**Media appearances:**

Television interview: CTV National News, “Electric stimulation 'a promising advancement' for reversing memory loss.” April 20, 2019

<https://www.ctvnews.ca/health/electric-stimulation-a-promising-advancement-for-reversing-memory-loss-1.4388758>

Newspaper column: Toronto Star, “Can brain stimulation be used to treat neurodegenerative disorders?” July 30, 2018

Radio Interview: Zoomer Radio, “Alzheimer’s Disease – Latest Research and Treatments.” Jan. 29, 2015

Magazine interview: Owl Magazine, “Extreme Brains.” Dec. 18, 2012.

Television interview: Global TV, 16x9 The Bigger Picture, “Word Play.” May 7, 2012.

**Trainee Supervision****Postdoctoral Fellows**

Priyanka Shah-Basak, Ph.D. Jan. 2017-Present. (Scientific Associate) Role: Primary Supervisor.

Topic: Abnormal resting state activity in stroke and dementia, physiological effects of brain stimulation on pathological activity.

Aneta Kielar, Ph.D. Sept. 2011-Aug. 2016. Role: Primary Supervisor.

Current Position: Assistant Professor, University of Arizona, Dept. of Speech, Language, and Hearing Sciences.

Topic: Oscillatory neural activity related to language processing in healthy volunteers and patients with post-stroke and progressive aphasia.

Frank Oppermann, Ph.D. May 2012 – May 2013. Role: Primary Supervisor for short-term visiting fellowship (4 months + 2 months over the year). Current Position: Project Manager, Federal Ministry of Science and Education, Bonn, Germany.

Topic: Oscillatory neural activity involved in speech planning.

## **Doctoral Students**

Ronald Chu. February 2014-December 2017. Role: Supervisor. Ph.D. program in Psychology, University of Toronto. Ph.D. Defense scheduled Dec. 2017. Thesis: From right to left: Interhemispheric interactions while seeing words and hearing sentences. Next position: Data Scientist, Compass Digital Labs, Toronto, ON.

Katie Fraser, Ph.D.. Sept. 2011-2016. Role: Joint supervisor with Dr. Graeme Hirst. Ph.D. program in Computer Science, University of Toronto. Ph.D. Completed. Thesis: Automatic Speech Processing for the Detection of Dementia. Present position: Research Officer, National Research Council of Canada, Ottawa, ON.

Michael Bone, March 2016-Dec. 2016. Role: Outside project supervisor. Ph.D. program in Psychology, University of Toronto. Topic: Decoding of retinotopic location of visual stimulation from MEG responses.

Melissa Hebscher, January 2015-January 2016. Role: Outside project supervisor. Ph.D. program in Psychology, University of Toronto. Topic: MEG evaluation of neural effects of high-definition TDCS.

Buddhika Bellana, May 2014-January 2015. Role: Outside project supervisor. Ph.D. program in Psychology, University of Toronto. Topic: MEG evaluation of neural effects of theta burst TMS.

Kelly Cotosck, Dec. 2013-present. Role: Collaborator, outside committee member, host for scientific visit in 2016. Ph.D. in Psychology, University of Sao Paulo. Topic: Changes in language network organization related to age and literacy.

## **Master's Students**

Tiana Hsi Wei. September 2018-Present. Role: Supervisor. M.A. program in Psychology, University of Toronto.

Jessica Arsenault, MA. Oct. 2011-Aug. 2012. Role: Co-supervisor with Dr. Bradley Buchsbaum. M.A. Program in Psychology, University of Toronto. Thesis: Implicit and explicit effects of context on episodic auditory-verbal memory: A hybrid repetition-learning recognition paradigm. Current position: Scientific Officer, Heart and Stroke Foundation of Canada.

## **Undergraduate Students (paid, excluding volunteers)**

Abbie Lai, May 2018-Aug 2018. Role: Primary supervisor for summer program. Current position: Undergraduate student.

Maryam Yossofzai, May 2018-Aug 2018. Role: Primary supervisor for summer program.  
Current position: Undergraduate student.

Sabrina Armstrong, May 2017-Aug 2017. Role: Primary supervisor for summer program.  
Current position: Neuroscience Research Assistant.

Gayatri Sivaratnam, May 2016-Aug 2016, May 2017-Aug 2017. Role: Primary supervisor for summer program. Current position: Applying to Medical School.

Alex Francois-Nienaber, May 2015-Aug 2015. Role: Primary supervisor for summer program. Current position: Applying to Graduate school.

Alexandra Silberberg, May 2014-Aug 2014. Role: Primary supervisor for summer program. Current position: Medical School Student.

Rosie Leigh, B.A. May 2011-Aug. 2011. Role: Primary supervisor for summer program.  
Current position: Dentist

### **Undergraduate Students (course research)**

Catherine Li, Sept. 2015-May 2016. Role: Primary supervisor for course research in “Human Biology,” University of Toronto.

### **ACADEMIC SERVICE**

Baycrest Site Leader, Canadian Partnership for Stroke Recovery. June 2016-Present

Science Officer, Centre for Aging and Brain Health Innovation, January 2018-Present

Chair, Final Oral Exam, Jun Ku Chung, Dept. Nutritional Sciences, Univ. Toronto, April 2014

Search Committee for VP Research, Baycrest, April 2016-Aug 2016

Co-chair, Organizing Committee, Rotman Research Institute Annual Research Conference, *Brain Plasticity and Neurorehabilitation*. 2013.

Co-chair, Organizing Committee, Rotman Research Institute Annual Research Conference, *Traumatic Brain Injury and Concussion*. 2017.

Research Ethics Board, University of Toronto Health Sciences, 2013-present.

Research Ethics Board, Determinants of Community Health, University of Toronto Medical School, 2014.

Leader, Research Workshop “Word Nerd 101 - Methodological considerations for linguistic stimuli in psychology and neuroscience experiments.” Baycrest, October 2018.

Leader, Research Workshop on Magnetoencephalography, Baycrest, March 2013, April 2013, Jan 2016

Leader, Research Workshop on Transcranial Magnetic Stimulation, April, 2015

Search Committee, Psycholinguistics professorship, University of Toronto – Scarborough, Dept. of Psychology and Centre for French and Linguistics, Feb-May 2016

Chair, Final Oral Exam, Andre Dias, Dept. Nutritional Sciences, Univ. Toronto, April 2014

Judge, Undergraduate Science Case Competition, University of Western Ontario, November, 2014

### **Commercial partnerships**

Winterlight Labs (AI software company), Toronto, ON. Board of Advisors. Consulting on the development of technology to detect and quantify cognitive impairment based on automated analysis of natural speech. June 2016-present. Publications: Fraser et al., 2014, Cortex; Fraser et al., 2015, J. Alzheimer’s Disease.

Interaxon, Inc. (portable EEG company), Toronto, ON. Consulting on the use of portable EEG technology for monitoring brain health in seniors at risk of dementia. May 2017-present. Pilot project in progress with the Ontario Neurodegenerative Disease Research Initiative (ONDRI), Ontario Brain Institute.

Brainsway Inc. (TMS hardware manufacturer), Jerusalem, Israel. Co-principal investigator on clinical trial and biomarker study of deep TMS in the treatment of dementia with concomitant depression. Grant awarded from CABHI, January 2018.

Duolingo Inc. (Language learning software company). Principal investigator on study of the cognitive benefits of second language acquisition in older adults. Grant awarded from CABHI, January 2018.

Lingraphica Inc. (Aphasia rehabilitation software company). Principal investigator on completed telerehabilitation grant from the Canadian Partnership for Stroke Recovery. Publication: Meltzer et al., 2017, Aphasiology.