

# Kyle Elliott Mathewson, PhD

Department of Psychology - P-455 Biological Sciences Building – University of Alberta – T6G 2E9

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Current as of September 22, 2014

Canadian Citizen & American Permanent Resident

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## POSITIONS

- 2014-current      **Assistant Professor**  
Department of Psychology, Faculty of Science, University of Alberta
- 2011-2014        **Beckman Postdoctoral Fellow**  
Beckman Institute, University of Illinois at Urbana-Champaign
- 2011-2012        **Postdoctoral Fellow**  
Department of Psychology, University of Alberta

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## EDUCATION

- 2007-2011        **Ph.D. in Psychology**  
University of Illinois at Urbana-Champaign  
*Brain and Cognition; Minor in Quantitative Psychology*  
*Defense Date: July 5, 2011*  
*Supervisors: Dr. Gabriele Gratton & Dr. Monica Fabiani*
- 2005-2007        **Honours B.A. in Psychology**  
University of Victoria, British Columbia, Canada  
*Top GPA in Graduating Class, Governor General's Silver Medal*  
*Supervisor: Dr. Clay Holroyd*
- 2003-2005        **B.A. Transfer Program**  
Grant MacEwan University, Edmonton, Alberta, Canada  
*Dean's List*

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## RESEARCH INTERESTS

Cognitive Neuroscience  
Perception, Attention, Awareness  
Neuroimaging, Engineering, Statistics  
Cognitive Control, Executive Function  
Cortical Oscillations  
Learning, Memory, and Decision Making

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## TEACHING INTERESTS

Cognitive Neuroscience  
Cognition and Perception  
Introductory Psychology  
Introductory and Advanced Statistics  
Research/Neuroimaging Methods  
Biopsychology

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## GRANT FUNDING AND SUPPORT

- 2013-2017      co-PI, National Eye Institute (NIH 1 RO1 EY022605)  
*Investigating Frontoparietal and Occipitotemporal Contributions to Awareness*  
Research and stipend support: US\$ 1,500,981, PI: Dr. Diane Beck

- 2013-2014 co-PI, University of Illinois Campus Research Board (13142)  
*Using Steady-State Visual Evoked Potentials to Study Brain Plasticity in Deaf Children*  
Research support: US\$ 29,330, PI: Dr. Matthew Dye
- 2013-2015 Consultant, University of Illinois Division of Nutritional Sciences Vision 20/20  
Research Program  
*Development and Evaluation of Educational App to Support Mobility of Nutritional Learning*  
Research support: US\$ 20,000, PI: Dr. Chapman-Novakofski
- 2012-2013 PI, Beckman Institute Equipment Competition  
*TMS and MR compatible EEG system for the Biomedical Imaging Center*  
Equipment support: US\$ 50,000
- 2011- 2014 Beckman Institute Postdoctoral Fellowship  
*University of Illinois*  
Research and stipend support: US\$ 191,500
- 2009- 2011 Post-graduate Scholarship D  
Natural Sciences and Engineering Research Council of Canada  
*University of Illinois*  
Stipend support: CAN\$ 42,000
- 2008 Cognitive Science / AI Award  
Supports students interdisciplinary CS/AI research  
*Beckman Institute, University of Illinois*  
Research support: US\$ 3,000
- 2007-2009 Canadian Graduate Scholarship M  
Natural Sciences and Engineering Research Council of Canada  
*Declined*
- 2007-2009 Post-graduate Scholarship M  
Natural Sciences and Engineering Research Council of Canada  
*University of Illinois*  
Stipend support: CAN\$ 38,300
- 2007 PI - Psi Chi Undergraduate Research Grant  
*University of Victoria*  
Research support: CAN\$ 1,000
- 2007 Psi Chi Undergraduate Psychology Research Conference Grant  
As Chapter President -Psychology Students of Vancouver Island Poster Session  
*University of Victoria, Canada*  
Support: CAN\$ 1,000

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**PUBLICATIONS**

- Gaspar, J., Street, W., Windsor, M., Carbonari, R., Kaczmarek, H., Kramer, A.F., & **Mathewson, K.E.** (*in press*). Ameliorating the distracting effects of cell phone driving. *Psychological Science*.
- Jang, K.I., Han, S.Y., Xu, S., **Mathewson, K.E.**, Zhang, Y., Jeong, J.W., Kim, G.T., Webb, R.C., Lee, J.W., Dawidczyk, T., Kim, R.H., Song, Y.M., Yeo, W.H., Kim, S., Cheng, H., Rhee, S.I., Chung, J., Kim, B., Chung, H.U., Lee, D., Yang, Y., Cho, M., Gaspar, J.G., Carbonari, R., Fabiani, M., Gratton, G., Huang, Y., & Rogers, J.A. (2014). Rugged and breathable forms of stretchable electronics with adherent, composite substrates for transcutaneous monitoring. *Nature Communications*, 5:4779.
- Xu, S. \*, Zhang, Y. \*, Jia, L. \*, **Mathewson, K.E. \***, Jang, K.I., Kim, J.H., Fu, H., Huang, X., Chava, P., Wang, R., Bhole, S., Wang, L., Na, Y.J., Guan, Y., Flavin, M., Han, Z., Huang, Y., & Rogers, J.A. (2014). Soft microfluidic assemblies of sensors, circuits and radios for the skin. *Science*. 344(6179), 70-74. (**\*co-first author**).
- Mathewson, K.E.**, Beck, D.M., Ro, T., Maclin, E.L., Low, K.A., Fabiani, M., & Gratton, G. (2014). Dynamics of alpha control: Preparatory suppression of posterior alpha oscillations by frontal modulators revealed with combined EEG and event-related optical signal (EROS). *Journal of Cognitive Neuroscience*, 26(10), 2400-2415.
- Mathewson, K.E.**, Basak, C., Maclin, E.L., Low, K.A., Boot, W.R., Kramer, A.F., Fabiani, M., & Gratton, G. (2012). Different slopes for different folks: Alpha and Beta EEG power predict subsequent video game learning rate and secondary task improvement. *Psychophysiology*, 49, 1558-1570.
- Mathewson, K.E.**, Prudhomme, C., Fabiani, M., Beck, D., Lleras, A., & Gratton, G. (2012). Making waves in the stream of consciousness: Entraining oscillations in visual awareness and ongoing EEG alpha with rhythmic visual stimulation. *Journal of Cognitive Neuroscience*, 24(12), 2321-2333.
- Zhu, L., **Mathewson, K.E.**, & Hsu, M. (2012). Dissociable Neural Representations of Reinforcement and Belief Prediction Errors Underlie Strategic Learning. *Proceedings of the National Academy of Sciences of the United States of America*, 109(5), 1419-1424.
- Mathewson, K.E.**, Lleras, A., Beck, D.M., Fabiani, M., Ro, T., & Gratton, G. (2011). Pulsed out of awareness: EEG Alpha oscillations represent a pulsed inhibition of ongoing cortical processing. *Frontiers in Perception Science*, 2(99).
- Jensen, M., & **Mathewson, K.E.** (2011). Simultaneous perception of both interpretations of ambiguous figures. *Perception*, 40(8), 1009-1011.
- Maclin, E., **Mathewson, K.E.**, Low, K.A., Boot, W.R., Kramer, A.F., Fabiani, M., & Gratton, G. (2011). Learning to Multitask: Electrophysiological indices of attention during video game training. *Psychophysiology*, 48(9), 1173-1183.
- Mathewson, K.E.**, Fabiani, M., Gratton, G., Beck, D.M., & Lleras, A. (2010). Rescuing stimuli from invisibility: Inducing a momentary release from visual masking with pre-target entrainment. *Cognition*, 186-191.

- Mathewson, K.E.**, Fabiani, M., Gratton, G., Beck, D. M., & Lleras, A. (2010) Making waves in the stream of consciousness: Eliciting predictable oscillations in visual awareness with pretarget entrainment at 12 Hz. Appearing in: Brooks, J., Belopolsky, A., Matsukura, M. & Palomares, M. (2010). Object Perception, Attention, and Memory (OPAM) 2009 Conference Report 17th Annual Meeting, Boston, MA, USA. *Visual Cognition*, 18(1), 137-141.
- Mathewson, K.E.**, Gratton, G., Fabiani, M., Beck, D., & Ro, T. (2009). To See or Not to See: Pre-stimulus Alpha Phase Predicts Visual Awareness. *Journal of Neuroscience*, 29(9), 2725-2732.
- Reviewed in the Journal Club of the Journal of Neuroscience: Wyart, V., & Sergent, C. (2009). The Phase of Ongoing EEG Oscillations Uncovers the Fine Temporal Structure of Conscious Perception. *Journal of Neuroscience*, 29(41) 12839-12841
- Reviewed as a General Commentary in Frontiers in Human Neuroscience: Hoogenboom, N., & Romei, V. (2010). Probing different time-scales of oscillatory fluctuations in visual awareness: from behavior to phase. *Frontiers in Human Neuroscience*, 4, 178.

Manuscripts in progress

- Mathewson, K.E.**, Fried, I., Staba, R.J., & Dickson, C. (in preparation). *Hippocampal slow oscillations in human intracranial recording.*
- Mathewson, K.E.**, Owens, G., Maclin, E., Low, K., Fabiani, M., & Gratton, G. (in preparation). *A graph colouring solution for the assignment of temporal multiplexing locations in diffuse optical imaging.*
- Mathewson, K.E.**, Krigolson, O.E., & Holroyd, C.B. (in revision). *The role of the anterior cingulate cortex in motor sequence acquisition: The error-related negativity as a reinforcement learning signal.*
- Voss, M.W., & **Mathewson, K.E.** (in revision). *Application of multidimensional scaling to neuroimaging data analysis.*

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**AWARDS AND HONOURS**

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|------|---|
| 2013 | Best Talk Finalist<br><i>3rd Annual Postdoctoral Research Symposium, Beckman Institute, University of Illinois</i>                                  |
| 2011 | Student Poster Award<br><i>Annual Meeting of the Society for Psychophysiological Research<br/>Boston, MA</i>  |
| 2010 | Student Poster Award with Distinction<br><i>Annual Meeting of the Society for Psychophysiological Research<br/>Portland, OR</i>                     |
| 2009 | Elsevier/Vision Research Travel Award<br>Vision Science Society Student Travel Award<br><i>Vision Science Society Annual Meeting<br/>Naples, FL</i> |

- 2008 Student Poster Award  
*Annual Meeting of the Society for Psychophysiological Research*  
Austin, TX
- 2008 Departmental Travel Award  
*Department of Psychology, University of Illinois*
- 2008 Lyle Lanier Travel Award  
*Department of Psychology, University of Illinois*
- 2007 Canadian Governor General's Silver Medal  
Awarded to top GPA in the graduating undergraduate class  
*University of Victoria, Canada*
- 2007 The Nellie Gillespie Prize  
Awarded to the top GPA in the graduating undergraduate class,  
*University of Victoria, Canada*
- 2007 Honours Thesis Certificate of Excellence  
*Canadian Psychological Association*
- 2007 The British Columbia Psychological Association Medal for a graduating student  
demonstrating outstanding achievement in the study of Psychology.  
*University of Victoria, Canada*
- 2007 The Howard Petch Scholarship  
Highest academic standing in the Social Science Faculty  
*University of Victoria, Canada*
- 2007 The Hector William Hadland Scholarship  
Outstanding undergraduate psychology students  
*University of Victoria, Canada*
- 2005-2007 Dean's List in the Social Sciences School  
*University of Victoria, Canada*
- 2005 Jason Lang Provincial Scholarship  
Outstanding academic achievement  
*Grant MacEwan University*
- 2005 Returning Student Academic Award  
*Grant MacEwan University, Edmonton, Canada*
- 2003-2005 Dean's List in the Bachelor of Arts Program  
*Grant MacEwan University, Edmonton, Canada*

**INVITED TALKS**

- 2014 Cognitive Neuroscience Seminar  
*Department of Psychology, University of Illinois*

- 2013 Beckman Institute Directors Seminar  
*University of Illinois*  
Cognitive Neuroscience Seminar  
*Department of Psychology, University of Illinois*
- 2013 Cognition and Brain Sciences Seminar  
*University of Victoria, Canada*  
Center for Neuroscience Seminar Series  
*University of Alberta*  
Cognition Seminar  
*University of Alberta*  
Visual Cognition and Human Performance Division Seminar  
*Department of Psychology, University of Illinois*
- 2012 Friday on the Brain Seminar  
*Neuroscience Program, University of Illinois*  
Brain and Cognition Division Seminar  
*Department of Psychology, University of Illinois*  
Biomedical Engineering Seminar  
*University of Alberta*  
Visual Cognition and Human Performance Division Seminar  
*Department of Psychology, University of Illinois*
- 2011 Center for Neuroscience Seminar Series  
*University of Alberta*  
Cognitive Science Seminar  
*University of Calgary*  
Cognitive Neuroscience Seminar  
*Northwestern University*  
Cognition and Cognitive Neuroscience Colloquium Series  
*Vanderbilt University*  
Brain and Cognition Division Seminar  
*Department of Psychology, University of Illinois at Urbana-Champaign*
- 2010 Cognition and Brain Sciences Seminar  
*University of Victoria, Canada*  
Brain and Cognition Division Seminar  
*Department of Psychology, University of Illinois at Urbana-Champaign*  
Visual Cognition and Human Performance Division Seminar  
*Department of Psychology, University of Illinois at Urbana-Champaign*
- 2009 Beckman Institute Graduate Student Seminar  
*University of Illinois at Urbana-Champaign*  
Brain and Cognition Division Seminar  
*Department of Psychology, University of Illinois at Urbana-Champaign*  
Psychonomics Seminar  
*University of Amsterdam*  
Cognitive Psychology Seminar  
*Vrije University, Amsterdam*  
Department of Vision Science Seminar  
*Glasgow Caledonian University*  
Visual Cognition Seminar  
*University of Edinburgh*
- 2008 Brain and Cognition Division Seminar  
*Department of Psychology, University of Illinois at Urbana-Champaign*

- 2008 (cont.) Advances in Sensory and Development Neurosciences Seminar  
*University of Illinois at Urbana-Champaign*
- 2007 Cognition and Brain Sciences Seminar  
*University of Victoria, Canada*

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**PUBLISHED ABSTRACTS & CONFERENCE PRESENTATIONS**

- He, J., Ang, C.W., Miller, A., Maddali, V., Gaspar, J.G., Kramer, A.F., Carbonari, R., Kaczmarek, H.J., Kramer, A.F., & **Mathewson, K.E.** (2014). Keep your mind on the road: Predicting mind-wandering while driving using classification of pre-probe oscillatory brain activity and driving performance. *Journal of Vision*, 14(10), 635.
- Street, W.N., Gaspar, J.G., Windsor, M.B., Carbonari, R., Kaczmarek, H., Kramer, A.F., & **Mathewson, K.E.** (2014). Amelioration of the distracting effect of cell phone driving. *Journal of Vision*, 14(10), 531.
- Mathewson, K.E.**, Low, K.A., Schneider-Garces, N., Chiarelli, A., Tan, C.H., Kong, T.S., Burton, C.R., Fletcher, M.A., Zimmerman, B., Sutton, B.P., Maclin, E.L., Fabiani, M., & Gratton, G. (2014). Retinotopic visual mapping of brain oxygenation and neuronal activity using simultaneous fast and slow near-infrared optical brain imaging in humans. *Journal of Vision*, 14(10), 1420.
- Metzger, B.A., **Mathewson, K.E.**, Tapia, E., Low, K.A., Maclin, E.L., Fabiani, M., Gratton, G., & Beck, D. (2014). Not all probes are created equal: Suppressed probes presented during binocular rivalry draw attention to the suppressed image. *Journal of Vision*, 14(10), 380.
- Xu, S., Lin, J., Zhang, Y., **Mathewson, K.E.**, Lee, J., Huang, Y., Rogers, J. (2013). Hard-soft integrated multifunctional devices for mobile healthcare systems. *Meeting of the Materials Research Society, Boston, MA.*
- Gaspar, J.G., Street, W., Windsor, M., Carbonari, R., Kaczmarek, H., Kramer, A.F., & **Mathewson, K.E.** (2013). Providing a conversation partner views of the driving scene mitigates cell phone-related driver distraction. *Proceedings of the Human Factors and Ergonomics Society International Annual Meeting*, 57, 1209-1213.
- Mathewson, K.E.**, Beck, D.M., Ro, T., Maclin, E.L., Low, K.A., Fabiani, M., & Gratton, G. (2013). Preparatory suppression of posterior alpha oscillations by frontal modulators revealed with combined EEG and event-related optical signal (EROS). *Nanosymposium paper presentation at the annual Society for Neuroscience Conference, San Diego CA.*
- Seymour, J.L., Fabiani, M., Gratton, G., Low, K. A., Maclin, E., **Mathewson, K.E.**, & Dye, M. W. G. (2013). The Effects of Deafness on Peripheral Visual Attention: An Optical Imaging Study. *Poster presented at the annual Society for Neuroscience Conference, San Diego CA.*
- Seymour, J.L., Fabiani, M., Gratton, G., Low, K., Maclin, E., **Mathewson, K.E.**, and Dye, M. (2013). The effects of deafness on peripheral visual attention: An optical imaging study. *Poster presented at the Sixth Annual Inter-Science of Learning Centers Conference, Philadelphia PA.*
- Mathewson, K.E.**, Staba, R.J., & Dickson, C.T. (2012). Hippocampal Slow Oscillations in Human Intracranial Recording. *Society for Neuroscience Annual Meeting, New Orleans, LA.*
- Mathewson, K.E.**, Staba, R.J., & Dickson, C.T. (2012). Hippocampal slow oscillations and memory consolidation in human intracranial recording. *Paper presentation at the 26<sup>th</sup> Annual Joseph R. Royce Research Conference, University of Alberta.*
- Mathewson, K.E.**, Maclin, E.L., Low, K.A., Lleras, A., Beck, D.M., Ro, T., Fabiani, M., and Gratton, G. (2011). Who's controlling the brakes? Pulsed inhibitory alpha EEG correlates with preparatory activity in the fronto-parietal network measured

- concurrently with the event-related optical signal (EROS). *Psychophysiology*, 48, S50. **(Student Poster Award Winner)**
- Steines, D.A., Baniqued, P.L., Low, K.A., Maclin, E.L., **Mathewson, K.E.**, Fabiani, M., & Gratton, G. (2011). DISCO: Detectors, Images, Sources, and Cortical Optimization of light channels for the event-related optical signal (EROS). *Psychophysiology*, 48, S92.
- Mathewson, K.E.**, Lleras, A., Beck, D.M., Ro, T., Fabiani, M., and Gratton, G. (2011). Who's controlling the brakes? Pulsed inhibitory alpha EEG is correlated with preparatory activity in the fronto-parietal network concurrently measured with the event-related optical signal (EROS). *Frontiers in Human Neuroscience. Conference Abstract: XI International Conference on Cognitive Neuroscience*.
- Gratton, G., **Mathewson, K.E.**, Beck, D.M., Lleras, A., Ro, T. and Fabiani, M. (2011). Alpha wave, top-down control, and the modulation of attention. *Frontiers in Human Neuroscience. Conference Abstract: XI International Conference on Cognitive Neuroscience*.
- Mathewson, K.E.**, Beck, D.M., Ro, T., Fabiani, M., & Gratton, G. (2011). Who's controlling the brakes? Pulsed inhibitory alpha EEG is linked to preparatory activity in the fronto-parietal network measured concurrently with the event-related optical signal (EROS). *Journal of Vision*, 11(11): 195.
- Mathewson, K.E.**, Prudhomme, C., Fabiani, M., Beck, D.M., & Gratton, G., (2010). Entraining neural oscillations with rhythmic visual stimulation elicits simultaneous fluctuations in visual awareness. *Psychophysiology*, 47, S28. **(Student Poster Award Winner with Distinction)**
- Mathewson K.E.**, Low, K.A., Maclin, E.L., Stanley, T., Basak, C., Kramer, A.F., Fabiani, M., & Gratton, G., (2010). Who will learn best? Electrophysiological markers of cognitive control predict subsequent complex task learning in the space fortress game. *Psychophysiology*, 47, S28.
- Mathewson, K.E.**, Proudhumme, C., Fabiani, M., Beck, D., Gratton, G., & Lleras, A. (2010). Controlling the timing of oscillations in neural activity and consciousness with rhythmic visual stimulation. *Journal of Vision*, 10(7): 1396.
- Zhu, L., **Mathewson, K.E.**, & Hsu, M. (2010). Neural Computations underlying Strategic Learning, *Poster Presentation at Annual meeting of the Society for Neuroeconomics, Evaston, IL*.
- Zhu, L., **Mathewson, K.E.**, & Hsu, M. (2010). Neural Computations underlying Strategic Learning, *Poster Presentation at Interdisciplinary Symposium on Decision Neuroscience, Philadelphia, PA*.
- Jensen, M., & **Mathewson, K.E.** (2010). *Coming face to face with two-faced faces. Demonstration at the Demo Night Presentation at the Vision Science Society Annual Meeting*.
- Mathewson, K.E.**, Beck, D.M., Ro, T., Fabiani, M., & Gratton, G. (2009). Illuminating Awareness: Investigating the temporal and spatial neural dynamics of metacontrast masking using the event-related optical signal. *Psychophysiology*, 46, S136.
- Mathewson, K.E.** (2009). Making Waves in the stream of Consciousness: Eliciting predictable oscillations in visual awareness with pre-target entrainment. *Paper Presentation: Annual meeting of the Society for Psychophysiological Research, Berlin, DE*.
- Mathewson, K.E.**, Fabiani, M., Gratton, G., Beck, D.M., & Lleras, A. (2009), Making waves in the stream of consciousness: Eliciting predictable oscillations in visual awareness with visual entrainment at 12 Hz. *Perception*, 38 ECVF Abstract Supplement, page 19.



- Mathewson, K.E.**, Beck, D.M., Ro, T., Fabiani, M., & Gratton, G. (2009). Illuminating Awareness: Investigating the temporal and spatial neural dynamics of metacontrast masking using the event-related optical signal. *Journal of Vision*, 9(8):765, 765a. **(Elsevier/Vision Research Travel Award Winner)**
- Mathewson, K.E.**, Beck, D.M., Ro, T., Fabiani, M., & Gratton, G. (2009). The Influence of Pre-stimulus Alpha Phase and Power on Visual Awareness. *Poster Presentation: 15th International Congress on Event-Related Potentials of the Brain*. Bloomington, IN.
- Mathewson, K.E.**, Low, K., Maclin, E., Stanley, T., Kramer, A., Fabiani, M., & Gratton, G. (2009). Electrophysiological Measures of Complex Task Learning. *Poster Presentation: 15th International Congress on Event-Related Potentials of the Brain*. Bloomington, IN.
- Mathewson, K.E.**, Gratton, G., Fabiani, M., Beck, D., & Ro, T. (2008). Now you see it, now you don't: Pre-stimulus electrophysiological predictors of subsequent visual awareness in meta-contrast masking. *Psychophysiology*, 45, S23. **(Student Poster Award Winner)**
- Low, K. A., Boot, W.R., Stanley, T., **Mathewson, K.E.**, Fabiani, M., Kramer, A. F., Gratton, G. (2008). Training on a complex task affects dual task event-related brain potentials. *Psychophysiology*, 45, S93-S94
- Mathewson, K.E.**, Gratton, G., Fabiani, M., Beck, D., & Ro, T. (2008). Pre-stimulus activity predicts subsequent target detection in meta-contrast masking. *Journal of Vision*, 8(6):1004, 1004a.
- Cockburn, J., Krigolson, O., Holroyd, C., & **Mathewson, K.** (2008). Sequence Learning: Internal vs. External Error Evaluation. *Poster Presentation: Cognitive Neuroscience*. San Francisco, CA.
- Mathewson, K.E.**, & Tanaka, J.W. (2007). The detrimental effects of working memory load on a sustained attention task: Implications for driving distracted. *Paper presentation at the Canadian Society for Brain, Behaviour, and Cognitive Science Annual Meeting*, Victoria, B.C., Canada.
- Mathewson, K.E.**, Krigolson, O.E., & Holroyd, C.B. (2007). The error-related negativity as a reinforcement learning signal in motor sequence acquisition. *Paper presentation at the Canadian Society for Brain, Behaviour, and Cognitive Science Annual Meeting*, Victoria, B.C., Canada.
- Krigolson, O.E., **Mathewson, K.E.**, & Holroyd, C.B. (2007). Sequence learning and the medial-frontal cortex: External versus internal error evaluation. *Paper presentation at the Canadian Society for Brain, Behaviour, and Cognitive Science Annual Meeting*, Victoria, B.C., Canada.
- Mathewson, K.E.**, Krigolson, O.E., & Holroyd, C.B. (2007). The role of the anterior cingulate cortex in motor sequence learning. *Poster presentation at the Psychology Students of Vancouver Island Poster Session*, Victoria, B.C., Canada.
- Mathewson, K.E.**, Krigolson, O.E., & Holroyd, C.B. (2007). The error-related negativity as a reinforcement learning signal in motor sequence acquisition. *Paper presentation at the Northwest Cognition and Memory Conference*, Burnaby, B.C., Canada.
- Mathewson, K.E.**, & Tanaka, J.W. (2007). The detrimental effects of working memory load on a sustained attention task: Implications for driving distracted. *Paper presentation at the Northwest Cognition and Memory Conference*, Burnaby, B.C., Canada.
- Krigolson, O.E., **Mathewson, K.E.**, Baker, T., Baker, R., & Holroyd, C.B. (2006). The Role of Medial-Frontal Cortex in Sequence Learning. *Psychophysiology*, 43, S54-S55.

- Krigolson, O.E., **Mathewson, K.E.**, Baker, T., Baker, R., & Holroyd, C.B. (2006). The Role of Medial-Frontal Cortex in Sequence Learning. *Poster presentation at the Society for Psychophysiological Research Annual Meeting, Vancouver, B.C., Canada.*
- Krigolson, O.E., Baker, T., Baker, R., **Mathewson, K.E.**, & Holroyd, C.B. (2006). The Role of Medial-Frontal Cortex in Sequence Learning. *Paper presentation at the Northwest Cognition and Memory Conference, Vancouver, B.C., Canada*

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## RESEARCH EXPERIENCE

- 2011 - 2012            **Postdoctoral Researcher**  
Brain Rhythms Lab, Psychology, University of Alberta  
*Dr. Clayton Dickson*
- 2011                    **Research Scientist**  
Canadian Biosample Repository, Medical Science, University of Alberta  
*Dr. Bruce Ritchie*
- 2007 – 2011           **Research Assistant**  
Cognitive Neuroimaging Lab, Beckman Institute, University of Illinois  
*Dr. Monica Fabiani and Dr. Gabriele Gratton*
- 2010                    **Visiting Scientist**  
Cognitive Neuroscience Group, University of Amsterdam  
*Dr. Victor Lamme*
- 2005-2007            **Senior Research Assistant**  
Brain and Cognition ERP Lab, University of Victoria, Canada.  
*Dr. Clay Holroyd*
- 2005-2007            **Research Assistant**  
Psychology Department, University of Victoria, Canada.  
*Dr. D. Stephen Lindsay*
- 2004-2005            **Research Assistant**  
Psychology Department, Grant MacEwan University, Edmonton, Canada  
*Dr. Lynne Honey*

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## TEACHING EXPERIENCE

- 2011                    **Teaching Assistant/Lab Instructor**  
Psychology 407: Statistical Methods II  
Department of Psychology, University of Illinois at Urbana-Champaign  
*Professor: Dr. Gabriele Gratton*
- 2011 (cont.)           **Guest Lecturer**  
Psychology 490: Honours Seminar

Department of Psychology, Macewan University  
*Professor: Dr. Lynne Honey*

**Guest Lecturer**

Psychology 375: Introduction to Cognitive Neuroscience  
 Department of Psychology, University of Alberta  
*Professor: Dr. Jeremy Caplan*

2010

**Teaching Assistant/Lab Instructor**

Psychology 406: Statistical Methods  
 Department of Psychology, University of Illinois at Urbana-Champaign  
*Professor: Dr. Gabriele Gratton*

**MENTORING**

Thesis Supervision:

*Chris Prudhomme. (2010). Can visual entrainment elicit simultaneous oscillations in visual awareness and neural activity? Psych/MCB Distinction Thesis Project*  
*Jordan S. Ha. (2013). Non-invasive real-time measurements of cardiac pulse using a webcam – a pilot study. MCB Distinction Thesis Project.*  
*Gavin Owens. (2013). On the feasibility of EEG-based epilepsy monitoring. CS Thesis Project*

Graduate Student Co-supervision:

*Brian A. Metzger (Psych), Cher Wee Ang (Psych), Jenessa L. Seymour (Neuroscience Program)*

Independent Research Project Advisor:

*Jojo Yorke (Pre-med), Kristine Ritchie (Pre-med), August J. Emford (MCB), Adam Miller (CS/ECE), Vinay Maddali (CS/ECE), Kevin Armstrong (Senior Design Project, ECE), John Burton (Senior Design Project, ECE), Alex Lostumbo (Senior Design Project, ECE)*

Trained 30 undergraduates in neuroimaging techniques at the University of Illinois and Victoria

**SKILLS & EXPERIENCE**

Human Neuroimaging and Electrophysiology using:

EEG – Electroencephalography, Advanced EEG signal processing; Event-Related Potentials  
 Optical Brain imaging: Event Related Optical Imaging; Near Infrared Spectroscopy  
 TMS – Transcranial Magnetic Stimulation (training with Dr. Victor Lamme, U. Amsterdam)  
 MRI, fMRI – Functional Magnetic Resonance Imaging, SPM, Freesurfer, FSL, DTI  
 ECG, EMG, Pulse Oximetry and other physiological measurements

Animal Electrophysiological Data Analysis

Read/Write/Speak

English, Hebrew, French  
 Matlab, C, Python, Psychtoolbox, E-Prime, Java, and HTML

**MEMBERSHIPS**

Society for Neuroscience  
 Society for Psychophysiological Research  
 Vision Sciences Society  
 Association for Psychological Science  
 Canadian Society for Brain, Behaviour, and Cognitive Science

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**PROFESSIONAL SERVICE**

Ad Hoc Reviews:

*Psychophysiology* (23)  
*International Journal of Psychophysiology* (13; Elsevier Certificate of Excellence in Reviewing)  
*Journal of Experiment Psychology: Human Perception & Performance* (10)  
*NeuroImage* (6)  
*Cerebral Cortex* (5)  
*Journal of Neuroscience* (6)  
*Psychological Science* (1)  
*Current Directions in Psychological Science* (2)  
*Neurobiology of Aging* (3)  
*Journal of Cognitive Neuroscience* (4)  
*Cognition* (2)  
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*Frontiers in Human Neuroscience* (5)  
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*Frontiers in Integrative Neuroscience* (2)  
*Biological Psychology* (1)  
*Behavioural Brain Research* (1)  
*Applied Psychophysiology and Biofeedback* (1)  
*Social Neuroscience* (3)  
*Brain and Behavior* (1)  
*Brain and Cognition* (2)  
*Ergonomics in Design* (1)  
*Quarterly Journal of Experimental Psychology* (1)  
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Grant Reviews:

Collaborative R&D Program, NSERC of Canada – 2012-2013  
 New investigatory grant, BBSRC of the UK – 2014

Outreach/Organizing:

Illinois State Science Fair Judge – Behavioral Science  
 Champaign, Illinois, 2013

Outreach/Organizing (cont.):

Beckman Fellows' Directors Lunch

*Beckman Institute at the University of Illinois, 2012-2013*  
 Volunteer Committee, Annual Illusion of the Year Contest  
*Vision Science Society Annual Meeting, Naples, FL, 2011-2014*  
 Fast Optical Imaging Summer Workshop  
*Beckman Institute at the University of Illinois, 2011*  
 Canadian Society for Brain Behaviour and Cognitive Science Annual Meeting  
*University of Victoria, Canada, 2007*  
 Psychology Students of Vancouver Island Poster Session,  
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Chapter President:

Psi Chi National Psychology Honors Society, *University of Victoria.*

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