

CURRICULUM VITAE - CORNEIL, Brian D., Ph.D.

- POSITIONS:** Associate Professor,
Depts. of Physiology & Pharmacology and Psychology
The Brain and Mind Institute
University of Western Ontario
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- EDUCATION:** B.Sc.H. Life Sciences, Queen's University, 1990-1994
Ph.D., Physiology, Queen's University, 1994-2001
- AWARDS:** 2008 Schulich School of Medicine & Dentistry Dean's Award of Excellence – Junior Faculty
2007 Schulich School of Medicine & Dentistry Dean's Award of Excellence – Team Award
2005 New Investigator Award, Canadian Institutes of Health Research
2002 Society for Neuroscience Donald B. Lindsley award for most outstanding PhD in Behavioural Neuroscience
Post-doc conference travel award, Neural Control of Movement
2001 Governor General's Gold Medal for best PhD thesis, Queen's University
Human Frontier Science Program Long-term Fellowship
2000 Abrahams Prize in Physiology for best PhD thesis
Canadian Institutes of Health Research Postdoctoral Fellowship
1999 Field travel award, Queen's University, for research in Nijmegen, The Netherlands
1998 Medical Research Council Doctoral Award
Ontario Graduate Scholarship (declined)
1997-1995 Ontario Graduate Scholarship (awarded 3 times)
- POSITIONS HELD:** 2011-2012 Visiting professor, Donders Centre for Cognition, Nijmegen NL
May 2011 Scientist, Robarts Research Institute

July 2009	Associate Professor, Depts of Physiology & Pharmacology and Psychology, University of Western Ontario, London, Canada
2003-2009	Assistant Professor, Depts of Physiology & Pharmacology and Psychology, University of Western Ontario, London, Canada
2001-2003	Post-doctoral research, California Institute of Technology, Pasadena, California, USA. Supervisor: Dr. R. A. Andersen

PROFESSIONAL AFFILIATIONS: Canadian Association for Neuroscience, Canadian Physiological Society, Society for Neuroscience, Society for the Neural Control of Movement, The American Physiological Society

RESEARCH INTERESTS: Neural control of movement, Neurophysiology, Gaze shifts, Eye-head coordination, Kinesthesia, Neural prosthetics

EXTERNAL FUNDING (as PI unless otherwise noted):

2012-2017 CIHR Operating Grant *Behavioural and neurophysiological effects of transcranial magnetic stimulation in the primate oculomotor system*. \$754,470 for 5 years

2012-2013 CIHR Operating Grant *Behavioural and neurophysiological effects of transcranial magnetic stimulation in the primate oculomotor system*. \$100,000 for 1 year.

2011-2016 NSERC Discovery Grant *Indexing covert activity within the oculomotor system via recordings of neck muscle activity*. \$200,000 for 5 yrs

2010-2013 Infrastructure operating fund *Laboratory for multidisciplinary measurements of human performance*. \$37,515 for 3 yrs

2009-2014 CIHR Operating Grant *Neural mechanisms for contextual control of Movement* \$818,395 for 5 yrs

2009-2015 NSERC Create Grant (P.I. Mel Goodale, 10 other co-PIs) *Computational Approaches to Sensorimotor Transformations for the control of Action* \$1.65M for 6 yrs

2008-2009 CIHR Operating Grant *Neural mechanisms for contextual control of Movement* \$50,000 for 6 months

2005-2008 Human Frontier Science Program Career Development Award *Committing to decisions in the Oculomotor System*. \$180,000 US for 3 yrs

2005-2010 CFI & Ontario Innovation Fund New Opportunities Fund *Laboratory for Multidisciplinary Measurements of Human Performance*. \$312,627 for 5 years

2005-2010 NSERC Discovery Grant *Properties of Human Eye-head Gaze Shifts in Complex Oculomotor Tasks*. \$100,000 for 5 years

2005-2010 Ontario Ministry of Research and Innovation Early Researcher Award, \$150,000 for 5 yrs

2004-2009 CIHR Group Grant (P.I. Mel Goodale) *Neural transformations for perception and action*. \$454,440/yr for 5 yrs

2003-2008 CIHR Operating Grant *Sensory and motor roles for neck muscles in coordinate transformations*. \$437,710 for 5 years

REFEREED PAPERS: (trainees are underlined)

1. **Corneil, B.D.**, Chen, J.C., Goonetilleke, S.C. Dynamic and opposing adjustment of movement cancellation and generation in an oculomotor countermanding task. (2013) *J Neurosci* 33: 9975-9984.
2. Farshadmanesh, F., Byrne, P., Yan, X., Wang, H., **Corneil, B.D.**, Crawford, J.D. (2012) Relationships between neck muscle electromyography and three dimensional head kinematics during centrally-induced torsional head movements. *J Neurophysiol* 108: 2867-2883.
3. Goonetilleke, S.C., Wong, J.P., **Corneil, B.D.** (2012) Validation of a within-trial measure of the oculomotor stop process. *J Neurophysiol* 108: 760-770.
4. Buchholz, V.N., Goonetilleke, S.C., Medendorp, W.P., **Corneil, B.D.** (2012) Greater benefits of multisensory integration during complex sensorimotor transformations. *J Neurophysiol* 107: 3135-3143.
5. **Corneil, B.D.**, Goonetillek, S.C., Peel, T.R., Green, K.A., Welch, I. (2012) Ultrasound-guided insertion of intramuscular electrodes into suboccipital muscles in the non-human primate. *J. Electromyograph Kinesiol* 22: 553-559.
6. Chapman, B.B., Pace, M.A., Cushing, S.L., **Corneil, B.D.** (2012) Recruitment of a contralateral head turning synergy by stimulation of supplementary eye fields. *J. Neurophysiol.* 107: 1694-1710.
7. Farshadmanesh, F., Byrne, P., Keith, G.P., Wang, H., **Corneil, B.D.**, Crawford, J.D. (2012) Cross-validated models of the relationships between neck muscle electromyography and three-dimensional head kinematics during gaze behaviour. *J. Neurophysiol.* 107: 573-590.
8. Goonetilleke, S.C., Gribble, P.L., Mirsattari, S.M., Doherty, T.J., **Corneil, B.D.** (2011) Neck muscle responses evoked by transcranial magnetic stimulation of the human frontal eye fields. *Eur J Neurosci* 33: 2155-2167.
9. Chapman, B.B., and **Corneil, B.D.** (2011) Neuromuscular recruitment related to stimulus presentation and task instruction during an anti-saccade task. *Eur. J. Neurosci.* 33: 349-360.
10. Goonetilleke, S.C., Doherty, T.J., **Corneil, B.D.** (2010) A within trial measure of the stop signal reaction time in a head-unrestrained oculomotor countermanding task. *J. Neurophysiol.* 104: 3677-3690.
11. **Corneil, B.D.**, Elsley, J.K., Nagy, B., Cushing, S.L. (2010) Motor output evoked by sub-saccadic stimulation of primate frontal eye fields *Proc Natl Acad Sci* 107: 6070-6075.
12. Nagy, B. and **Corneil, B.D.** (2010) Representation of horizontal head-on-body position in the primate superior colliculus. *J. Neurophysiol.* 103: 858-874.

13. Brien, D.C., **Corneil, B.D.**, Fecteau, J.H., Bell, A.H., Munoz, D.P. (2009) The behavioural and neurophysiological modulation of microsaccades in monkeys. *J. Eye Movement Res.* 3(2):4, 1-12.
14. Stevenson, S.A., Elsley, J.K., **Corneil, B.D.** (2009) A “Gap effect” on stop signal reaction times in a human saccadic countermanding task. *J. Neurophysiol.* 101: 580-590.
15. Farshadmanesh, F., Chang, P., Wang, H., Yan, X., **Corneil, B.D.**, Crawford, J.D. (2008) Neck muscle synergies during stimulation and inactivation of the interstitial nucleus of Cajal (INC). *J. Neurophysiol.* 100: 1677-1685.
16. Rezvani, S. and **Corneil, B.D.** (2008) Recruitment of a head turning synergy by low-frequency activity in the primate superior colliculus. *J. Neurophysiol.* 100: 397-411.
17. Chapman, B.B., and **Corneil, B.D.** (2008) Properties of human eye-head gaze shifts in an Anti-gaze shift task. *Vis. Research* 48: 538-548.
18. **Corneil, B.D.**, Munoz, D.P., Chapman, B.B., Admans, T., Cushing, S.L. (2008) Neuromuscular consequences of reflexive covert orienting. *Nat. Neurosci.* 11(1): 13-15.
19. Elsley, J.K., Nagy, B., Cushing, S.L., **Corneil, B.D.** (2007) Widespread presaccadic recruitment of neck muscles by stimulation of the primate frontal eye fields. *J. Neurophysiol.* 98: 1333-1354.
20. **Corneil, B.D.**, Munoz, D.P. Olivier, E. (2007) Priming of head premotor circuits during oculomotor preparation. *J. Neurophysiol.* 97: 701-714
21. **Corneil, B.D.** and Elsley J.K. (2005) Countermanding eye-head gaze shifts in humans: marching orders are delivered to the head first *J. Neurophysiol.* 94: 883-895.
22. Musallam, S., **Corneil, B.D.**, Greger, B., Scherberger, H., Andersen, R.A. (2004) Cognitive control signals for neural prosthetics. *Science* 305(5681): 258-262.
23. **Corneil, B.D.**, Olivier, E., Munoz, D.P. (2004) Visual responses on neck muscles reveal selective gating that prevents express saccades. *Neuron* 42(5): 831-841.
24. **Corneil, B.D.**, Andersen, R.A. (2004) Dorsal neck muscle vibration induces upward shifts in the endpoints of memory-guided saccades in monkeys. *J. Neurophysiol.* 92: 553-566.
25. Andersen, R.A., Burdick, J.W., Musallam, S., Scherberger, H., Pesaran, B., Meeker, D., **Corneil, B.D.**, Fineman, I., Nenadic, Z., Branchaud, E., Cham, J.G., Greger, B., Tai, Y.C., Mojarradi, M.M. (2004). Recording advances for neural prosthetics. *Conf. Proc. IEEE. Eng. Med. Biol. Soc.* 7: 5352-5355.
26. Bell, A.H., **Corneil, B.D.**, Munoz, D.P., Meredith, A.M. (2003) Engagement of visual fixation suppresses sensory responsiveness and multisensory integration in the primate superior colliculus. *Eur. J. Neurosci.* 18: 2867-2873.
27. Scherberger, H., Fineman, I., Musallam, S., Dubowitz, D.J., Bernheim, K.A., Pesaran, B., **Corneil, B.D.**, Gilliken, B., Andersen, R.A. (2003). Magnetic resonance image-guided implantation of chronic recording electrodes in the macaque intraparietal sulcus. *J. Neurosci. Meth* 130: 1-8.
28. **Corneil, B.D.**, Olivier, E., Munoz, D.P. (2002) Neck muscle responses to stimulation of monkey superior colliculus. I. Topography and manipulation of stimulation parameters. *J. Neurophysiol.* 88:1980-1999.
29. **Corneil, B.D.**, Olivier, E., Munoz, D.P. (2002) Neck muscle responses to stimulation of monkey superior colliculus. II. Gaze shift initiation and volitional head movements. *J. Neurophysiol.* 88: 2000-2018.

30. **Corneil, B.D.**, Van Wanrooij, M., Munoz, D.P., Van Opstal, A.J. (2002) Auditory-visual interactions subserving goal-directed saccades in a complex scene. *J. Neurophysiol.* 88: 438-454.
31. Richmond, F.J.R., Singh, K., **Corneil, B.D.** (2001) Neck muscles in the rhesus monkey. I. Muscle morphometry and histochemistry. *J. Neurophysiol.* 86: 1717-1728.
32. **Corneil, B.D.**, Olivier, E., Richmond, F.J.R., Loeb, G.E., Munoz, D.P. (2001) Neck muscles in the rhesus monkey. II. Electromyographic patterns of activation underlying postures and movements. *J. Neurophysiol.* 86: 1729-1749.
33. Bell, A.H., **Corneil, B.D.**, Meredith, M.A., Munoz, D.P. (2001) The influence of stimulus properties on multisensory processing in the awake primate superior colliculus. *Can. J. Exp. Psychol.* 55:123-132.
34. Richmond, F.J.R., **Corneil, B.D.**, Singh, K. (1999). Animal models of motor systems: Cautionary tales from studies of head movement. *Prog. Brain Res.* Vol. 123: 411-416
35. **Corneil, B.D.**, Hing, C.A., Bautista, D.V., Munoz, D.P. (1999). Human eye-head gaze shifts in a distractor task. I. Truncated gaze shifts. *J. Neurophysiol.* 82: 1390-1405.
36. **Corneil, B.D.**, Munoz, D.P. (1999). Human eye-head gaze shifts in a distractor task. II. Reduced threshold for initiation of early head movements. *J. Neurophysiol.* 82: 1406-1421.
37. Richmond, F.J.R., Singh, K., **Corneil, B.D.** (1999). Marked non-uniformity of fiber-type composition in the primate suboccipital muscle obliquus capitis inferior. *Exp. Brain Res.* 125: 14-18.
38. **Corneil, B.D.** and Munoz, D.P. (1996) The influence of auditory and visual distractors on human orienting gaze shifts. *J. Neurosci.* 16: 8193-8207.
39. Goldring, J.E., Dorris, M.C., **Corneil, B.D.**, Ballantyne, P.A., Munoz, D.P. (1996) Combined eye-head gaze shifts to visual and auditory targets in humans. *Exp. Brain Res.* 111: 68-78.
40. Munoz, D.P. and **Corneil, B.D.** (1995) Evidence for interactions between target selection and visual fixation for saccade generation in humans. *Exp. Brain Res.* 103: 168-173.

MANUSCRIPTS SUBMITTED OR IN ADVANCED PREPARATION:

1. Chapman, B.B. and **Corneil, B.D.** Short-duration stimulation of the supplementary eye fields perturbs anti-saccades while potentiating contralateral head orienting. *Submitted to Eur J Neurosci*
2. Zenon, A., **Corneil, B.D.**, Filali-Sadouk, N., Olivier, E. Counterproductive effect of saccadic suppression during attentional shifts. *First round revision for PLoS One*
3. Peel, T.R., Johnston, K, Lomber, S.G., **Corneil, B.D.** Bilateral saccadic deficits following large and reversible inactivation of unilateral frontal eye field. *Re-submitted to J Neurophysiol*
4. Van Wanrooij, M.M., **Corneil, B.D.**, Bell, A.H., Munoz, D.P., Van Opstal, A.J. Dynamic probabilistic control of visual, auditory and audiovisual saccades. *In preparation for Curr Biol*

BOOK CHAPTERS

- 1 **Corneil, B.D.** (2011) Neuromuscular strategies for eye-head gaze shifts. Oxford Handbook on Eye Movements. Liversedge, S.P., Gilchrist, I.D., Everling, S. (eds.) Oxford University Press.

- 2 Musallam, S. and **Corneil, B.D.** (2010) Motor Neural Prosthetic Systems. Sage Encyclopedia of Perception. Goldstein, E.B. (ed.). Sage Publishers, Thousand Oaks, CA.
- 3 **Corneil, B.D.** and Musallam, S. (2008) Vestibulospinal system & Eye-head/neck movement. The New Encyclopedia of Neuroscience. Squire, L. (ed). Elsevier Ltd. Chpt 1350.
- 4 Richmond, F.J.R. and **Corneil, B.D.** (2001) Afferent mechanisms in the upper cervical spine. The Cranio-cervical syndrome: Mechanisms, assessment and treatment. Vernon, H. (ed.). Butterworth-Heinemann, Oxford. pp.14-30.

INVITED COMMENTARY

- 1 **Corneil, B.D.** (2004) Book review of *The Superior Colliculus: New Approaches for Studying Sensorimotor Integration*, Hall, W.C. and Moschovakis, A. eds; *Quarterly Reviews of Biology*. 79(4), 457.

INVITED PRESENTATIONS:

- | | |
|------|--|
| 2012 | University of Michigan, Host: Dr. M. King
University of Texas at Austin, Host: Dr. A. Huk
Université Paris Descartes, Host: Dr. P.P. Vidal
The University of Exeter, Host: Dr. F. Verbruggen
University of Oxford, Host: Dr. A. Bell
German Primate Centrum, Host: Dr. H. Scherberger
University of Louvain, Belgium, Host: Dr. E. Olivier
Radboud University Nijmegen. Host: Dr. D. Stegeman
Umea University, Sweden. Host: Dr. A. Pruszynski
Rotterdam University. Host: Dr. M. Frens |
| 2011 | University of Bourgogne. Host: Dr. F. Bonnetblanc
University of Utrecht. Host: Dr. S.F.W. Neggers
Robarts Research Institute |
| 2010 | Virginia Commonwealth University. Host: Dr. M.A. Meredith
University of British Columbia. Host: Dr. J.S. Blouin |
| 2009 | Queen's University. Host: Dr. M.C. Dorris |
| 2008 | McGill University. Host: Dr. S. Musallam
University of Wisconsin. Host: Dr. L. Populin |
| 2004 | University of Western Ontario: Departmental presentation
York University, Host: Dr. J.D. Crawford |
| 2003 | York University, Host: Dr. J.D. Crawford |
| 2002 | University of Western Ontario. Host: Dr. J. Henry |
| 2000 | University of Western Ontario. Host: Dr. S. Everling |
| 1999 | Washington University School of Medicine. Host: Dr. L.H. Snyder
California Institute of Technology. Host: Dr. R.A. Andersen
University of California San Francisco. Host: Dr. S.G. Lisberger
National Institutes of Health. Host: Dr. M. Paré
National Institutes of Physiological Sciences, Okazaki, Japan. Host:
Dr. T. Isa
University of Louvain, Brussels, Belgium. Host: Dr. E. Olivier
Katholieke University of Nijmegen, The Netherlands. Host: Dr. |

ABSTRACTS AND/OR CONFERENCE PRESENTATIONS:

- Peel, T.R., Womelsdorf, T., Lomber, S.G., and **Corneil, B.D.** (2013) The functional contribution of the frontal eye fields to spiking activity and local field potentials in the intermediate superior colliculus. Submitted to *Soc Neurosci Abstr*
- Gu, C., Stevens, T., Thielscher, A., Bell, A.H. and **Corneil, B.D.** (2013) Spatial and state-dependent effects of transcranial magnetic stimulation of the frontal eye fields in non-human primates. Submitted to *Soc Neurosci Abstr*
- Atsma J., Maij, F., **Corneil, B.D.**, and Medendorp, W.P. (2013) No evidence for peri-saccadic mislocalization on suddenly cancelled saccades. *European Conference on Visual Perception*
- Atsma J., Maij, F., **Corneil, B.D.**, and Medendorp, W.P. (2013) No visual instability on suddenly cancelled saccades. *Gordon Research Conference on Eye Movements*
- Gu, C. and **Corneil, B.D.** (2013) Developing an animal model for the effects of transcranial magnetic stimulation of the oculomotor system. *Gordon Research Conference on Eye Movements*
- Peel, T.R., Womelsdorf, T., Lomber, S.G., and **Corneil, B.D.** (2013) The frontal eye fields contributes to spiking activity and modulates low-frequency oscillations in the intermediate superior colliculus. *Gordon Research Conference on Eye Movements*
- Gu, C. and **Corneil, B.D.** (2013) Development of an animal model for the effects of Transcranial Magnetic Stimulation on the primate oculomotor system. *Canadian Association for Neuroscience*.
- Peel, T.R., Lomber, S.G., **Corneil, B.D.** (2013) Unilateral inactivation of frontal eye fields decreases visual, delay, and saccadic activity in intermediate superior colliculus. *Canadian Association for Neuroscience*.
- Corneil, B.D.** (2013) Not just saccades: lessons learned about the oculomotor system from recording neck muscle activity in human and non-human primates. Presentation at *Cosyne* workshop
- Halwerk, K., Selen, L.P.J., **Corneil, B.D.**, Medendorp, W.P. (2012) Vestibular contributions to saccadic target selection. *Soc. Neurosci. Abstr* 372.07.
- Peel, T.R., Hafed, Z.M., Lomber, S.G., **Corneil, B.D.** (2012) The frontal eye fields are necessary for bottom-up, cue-induced influences on microsaccades. *Soc. Neurosci. Abstr.* 373.16
- Peel, T.R., Lomber, S.G., **Corneil, B.D.** (2012) Functional contribution of the frontal eye fields to activity in the intermediate superior colliculus. *Soc. Neurosci. Abstr.* 373.10
- Corneil, B.D.** (2012) An animal model for TMS of the frontal eye fields. *8th Computational Motor Control Workshop*. Ben-Gurion University of the Negev, Israel.
- Corneil, B.D.** (2012) An animal model for TMS of the frontal eye fields. *5th Annual Meeting on Primate Neurobiology*. Tuebingen, Germany
- Buchholz, V.N., Goonetilleke, S.C., Medendorp, W.P., **Corneil, B.D.** (2011) Eye-head gaze shifts to visual, tactile, and visuotactile targets under different postures. *Soc. Neurosci. Abstr.* 914.20
- Corneil, B.D.**, Goonetilleke, S.C. (2011) Neck muscle responses evoked by transcranial magnetic stimulation of the frontal eye fields in human and non-human primates. *Soc. Neurosci. Abstr.* 18.07

- Farshadmanesh, F., Byrne, P., Yan, X., Wang, H., **Corneil, B.D.**, Crawford, J.D. (2011) A comparison between neck electromyography (EMG) during voluntary torsional head movements to those evoked by unilateral stimulation and inactivation of the interstitial nucleus of Cajal (INC). *Soc. Neurosci. Abstr.* 699.18
- Peel, T.R., Lomber, S.G., **Corneil, B.D.** (2011) An analysis of saccadic reaction times by the LATER model following unilateral inactivation of the primate frontal eye fields. *Soc. Neurosci. Abstr.* 272.04
- Rath-Wilson, K., Goonetilleke, S.C., Doherty, T.J., Guitton, D., **Corneil, B.D.** (2011) Neuromuscular demonstration of a subcortical visual-motor reflex in a hemi-decorticate patient. *Soc. Neurosci. Abstr.* 914.16
- Corneil, B.D.** (2011) Decision-making concepts. *Autumn school in Perception, Action and Control*. Nijmegen, the Netherlands.
- Corneil, B.D.** and Goonetilleke, S.C., (2011) Transcranial magnetic stimulation (TMS) of the frontal eye fields in humans and non-human primates. *European conference on eye movements*
- Peel, T.R., Lomber, S.G., **Corneil, B.D.** (2011) Saccadic deficits following unilateral cryogenic inactivation of the primate frontal eye fields *Gordon conference on Eye Movements*
- Corneil, B.D.** (2011). Neuromuscular responses evoked by TMS of the FEF in human and non-human primates. *Neural control of Movement*.
- Goonetilleke, S.C., Rath-Wilson, K., Doherty, T.J., Guitton, D., **Corneil B.D.** (2011) Neuromuscular evidence for a subcortical visuo-motor reflex in a hemidecorticate patient. *Neural Control of Movement*
- Farshadmanesh, F., Byrne, P., Yan, X., Wang, H., **Corneil, B.D.**, Crawford, J.D. (2011) Cross-validated models of the relationship between neck muscle electromyography (EMG) evoked by stimulation of the interstitial nucleus of Cajal (INC). *Canadian Physiological Society*
- Chapman, B.B., Pace, M., **Corneil, B.D.** (2010) Contextual modulation of neck muscle activity evoked by stimulation of the supplementary eye fields. *Soc. Neurosci. Abstr.* 676.8
- Farshadmanesh, F., Byrne, P., Yan, X., Wang, H., **Corneil, B.D.**, Crawford, J.D. (2010) Using cross-validation to characterize neck electromyography (EMG) evoked by stimulation of the interstitial nucleus of Cajal (INC). *Soc. Neurosci. Abstr.* 676.7
- Goonetilleke, S.C., Doherty, T.J., **Corneil, B.D.** (2010) Comparing the stimulus-locked recruitment of splenius capitis in humans and non-human primates. *Soc. Neurosci. Abstr.* 676.1
- Peel, T.R., Lomber, S.G., **Corneil, B.D.** (2010) Behavioural effects of unilateral cryogenic inactivation of primate frontal eye fields. *Soc. Neurosci. Abstr.* 779.17
- Corneil B.D.** (2010) Characteristics of the cephalomotor command evoked by stimulation of frontal oculomotor cortices. *Satellite for the Neural Control of Movement*
- Chapman, B.B., Pace, M., **Corneil, B.D.** (2010) Neck muscle activity following stimulation of the primate SEF: Influence of parameters and behavioural tasks. *Neural control of Movement*
- Farshadmanesh, F., Byrne, P., Yan, X., Wang, H., **Corneil, B.D.**, Crawford, J.D. (2010) Cross-validated models of the relationship between neck muscle electromyography and 3-D head kinematics during gaze shifts. *Neural control of Movement*

- Goonetilleke, S., Gribble, P.L., Mirsattari, S.M., Doherty, T.J., **Corneil, B.D.** (2010) Studying the excitability of the human frontal eye fields using transcranial magnetic stimulation and electromyography. *Neural control of Movement*
- Pace, M., Chapman, B.B., **Corneil, B.D.** (2010) Neck muscle activity following stimulation of the primate SEF: Influence of initial position. *Neural control of Movement*
- Van Opstal, A.J., Van Wanrooij, M., Munoz, D.P., Bell, A.H., **Corneil, B.D.** (2010) Saccades to audiovisual stimuli optimally integrate dynamic uncertainty. *Neural control of Movement*
- Goonetilleke, S., Gribble, P.L., Mirsattari, S.M., Doherty, T.J., **Corneil, B.D.** (2009) Studying the excitability of the human frontal eye fields using transcranial magnetic stimulation and electromyography. *Soc. Neurosci. Abstr.* 405.1.
- Farshadmanesh, F., Byrne, P., Yan, X., Wang, H., **Corneil, B.D.**, Crawford, J.D. (2009) Cross-validation technique for establishing predictive models of the relationship between neck muscle electromyography and three-dimensional head kinematics. *Soc. Neurosci. Abstr.* 851.20
- Goonetilleke, S., Gribble, P.L., Mirsattari, S.M., Doherty, T.J., **Corneil, B.D.** (2009) Using transcranial magnetic stimulation and electromyography to study the excitability of the frontal eye fields in humans. *15th European Conference on Eye Movements*, pg. 25
- Van Wanrooij, M., Bell, A.H., **Corneil, B.D.**, Munoz, D.P., Van Opstal, A.J. (2009) Optimal integration of rapidly-changing auditory and visual localization signals. *Midwinter meeting for the association for research in otolaryngology*. 32: 916, pg 310.
- Chapman, B.B., Elsley, J.K., **Corneil, B.D.** (2008) Changes in neuromuscular responses evoked by stimulation of the primate FEF as a function of initial gaze position. *Soc. Neurosci. Abstr.* 263.8.
- Farshadmanesh, F., Keith, G., Yan, X., Wang, H., **Corneil, B.D.**, Crawford, J.D. (2008) Neck muscle activation during gaze fixations in the monkey: 3-D postural fields and relationship to 3-D behavioral constraints. *Soc. Neurosci. Abstr.* 263.9.
- Goonetilleke, S.C., Admans, T., Doherty, T.J., **Corneil, B.D.** (2008) Neck muscle responses associated with countermanding eye-head gaze shifts in humans. *Soc. Neurosci. Abstr.* 770.8.
- Pace, M.A., and **Corneil, B.D.** (2008) Modulation of saccadic main sequence relationships by reward expectancy. *Soc. Neurosci. Abstr.* 667.5.
- Stevenson, S.A., Hall, A.J., Lomber, S.G., **Corneil, B.D.** (2008) Using reversible cooling inactivation to assess the oculomotor contributions of the primate superior colliculus. *Soc. Neurosci. Abstr.* 167.12.
- Corneil, B.D.** (2007) Neck muscle recruitment during oculomotor tasks: What are “high-level” signals doing on a “low-level” motor effector? Satellite for 25th *Bárány Society Meeting*
- Corneil, B.D.** and Nagy, B. (2007). Head position gain fields in the primate superior colliculus. 25th *Bárány Society Meeting*
- Farshadmanesh, F., Chang, P., Yan, X. Wang, H., **Corneil, B.D.**, Crawford, J.D. (2007). How does stimulation/inactivating the interstitial nucleus of Cajal (INC) affect neck muscle synergies? 25th *Bárány Society Meeting*
- Farshadmanesh, F., Chang, P., Yan, X. Wang, H., **Corneil, B.D.**, Crawford, J.D. (2007). Position-dependent neck muscle activation during stimulation of the interstitial nucleus of Cajal (INC). *Soc Neurosci Abstr.* 33: 178.9.

- Chapman, B.B. and **Corneil, B.D.** (2007) Neuromuscular correlates of the sensori-motor transformation during an anti-gaze shift task. *Soc Neurosci Abstr.* 33: 178.13.
- Stevenson, S.A., Elsley, J.K., and **Corneil, B.D.** (2007) A “Gap” effect on SSRTs: Priming of the stop process with varying states of visual fixation in a saccadic countermanding task. *Soc Neurosci Abstr.* 33: 719.4.
- Nagy, B. and **Corneil, B.D.** (2007) Representations of horizontal head-on-body position in the primate superior colliculus. *Soc Neurosci Abstr.* 33: 178.12.
- Brien, D.C., **Corneil, B.D.,** Munoz, D.P. (2007) Covert orienting modulates microsaccade metrics in non-human primates. *14th European Conference on Eye Movements*, F-5, pg. 54
- Corneil, B.D.** and Chapman, B.B. (2007) Neuromuscular correlates of covert orienting in an anti-saccade task. *14th European Conference on Eye Movements*, AS-3, pg. 56.
- Corneil, B.D.** (2007) Neuromuscular correlates of motor preparation. *Gordon Conference on Oculomotor Systems Biology.*
- Farshadmanesh, F., Chang, P., Yan, X. Wang, H., **Corneil, B.D.,** Crawford, J.D. (2007). The effect of stimulating/inactivating the INC (Interstitia Nucleus of Cajal) on neck muscle synergies. *Gordon Conference on Oculomotor Systems Biology.*
- Farshadmanesh, F., Chang, P., Yan, X. Wang, H., **Corneil, B.D.,** Crawford, J.D. (2007). The effect of INC (Interstitia Nucleus of Cajal) Stimulation / Inactivation on neck muscle synergies. *1st Annual Meeting, Canadian Association of Neuroscience.*
- Corneil, B.D.** (2007) Neuromuscular consequences of oculomotor preparation. *Neural Control of Movement.* 17: Session 14.
- Chapman, B.B., **Corneil, B.D.** (2007) Head movement kinematics do not reflect underlying neck muscle recruitment during an anti-gaze shift task. *Canadian Physiological Society.* p46.
- Fashadmanesh F., Chang P.F., Yan X.G., Wang J.D., **Corneil B.D.,** Crawford J.D. (2007). Synergy of neck muscles following unilateral inactivation and stimulation of the Interstitia Nucleus of Cajal. *Canadian Physiological Society.* p45.
- Elsley J.K., Nagy B., Rezvani S., **Corneil B.D.** (2006). Low current “sub-saccadic” microstimulation in the primate FEF is not divorced from motor output. *Soc Neurosci. Abstr.* 32: 138.7.
- Fashadmanesh F., Chang P.F., Yan X.G., Wang J.D., Crawford J.D., **Corneil B.D.** (2006). Neck muscle synergies during gaze fixation before and after pharmacological inactivation of the interstitia nucleus of Cajal (INC) in the primate. *Soc Neurosci. Abstr.* 32: 139.9.
- Munoz D.P., Chapman B.B., Admans T., Cushing S., **Corneil B.D.** (2006). Neuromuscular consequences of reflexive covert orienting. *Soc Neurosci. Abstr.* 32: 606.9.
- Nagy B., **Corneil B.D.** (2006). A thorough description of the tonic coupling between orbital eye position and neck EMG activity in 2 dimensions in the monkey. *Soc Neurosci. Abstr.* 32: 139.2.
- Rezvani S., **Corneil B.D.** (2006). Low-frequency activity in the primate superior colliculus activates a head turning synergy: evidence using neck EMG recordings *Soc Neurosci. Abstr.* 32: 139.3.
- Corneil B.D.** (2006). Lessons learned from recording neck muscle activity. Low-current microstimulation in the oculomotor system is not divorced from motor output *Human Frontier Science Program 6th Annual Awardees meeting.*

- Elsley J.K., Nagy B., Rezvani S., **Corneil B.D.** (2006). Neck muscle responses to stimulation of the primate FEF: Low-current microstimulation in the oculomotor system is not divorced from motor output. *Neural Control of Movement*. 16: B-13.
- Chapman B.D., **Corneil B.D.** (2005) Properties of human eye-head gaze shifts in an anti-gaze shift task. *Soc. Neurosci. Abstr.* 31: 858.5.
- Chang P.F., Fashadmanesh F., Yan X., Wang H., Crawford J.D., **Corneil B.D.** (2005) Neck muscle recruitment evoked by micro-stimulation of the primate Interstitial Nucleus of Cajal (INC). *Soc. Neurosci. Abstr.* 31: 302.10.
- Corneil B.D.** (2005) Neural mechanisms for controlling eye-head gaze shifts: lessons learned from recording neck muscle activity. *Gordon Conference on Oculomotor Systems Biology*. 1:P3
- Corneil B.D.**, Elsley J.K., Gonsalves S. (2005) Countermanding eye-head gaze shifts in humans: head movements are committed to first. *Neural Control of Movement*. 15:G-02.
- Corneil B.D.**, Elsley J.K. (2005). Countermanding eye-head gaze shifts in humans: marching orders are delivered to the head first. *Canadian Physiological Society*. 83: E13.
- Musallam S., **Corneil B.D.**, Greger B., Scherberger H., Andersen R.A. (2004). Cognitive control signals for neural prosthetics. *Soc. Neurosci. Abstr.* 30: 263.3.
- Corneil B.D.**, Olivier E., Munoz D.P. (2004) Visual responses on neck muscles reveal selective gating that prevents reflexive saccades. *Canadian Physiological Society*.
- Corneil B.D.**, Musallam, S., Andersen R.A. (2003). Representation of reward expectancy in the medial bank of the intraparietal sulcus: implications for neural prostheses. *Soc. Neurosci. Abstr.* 29: 607.8.
- Musallam, S., **Corneil, B.D.**, Bhattacharyya, R., Meeker, D., Andersen, R.A. (2003) Real Time control of a cursor using multi-electrode arrays implanted in the medial bank of the intraparietal sulcus. *Soc. Neurosci. Abstr.* 29: 607.7.
- Corneil B.D.**, Andersen R.A. (2003). Development of an animal model for kinesthetic illusions: neck muscle vibration alters the endpoints of memory-guided saccades in monkeys. *Human Frontier Science Program 3rd Annual Awardees meeting* 3: 45.
- Corneil B.D.**, Andersen R.A. (2003) Neck muscle vibration alters the endpoints of delayed memory-guided saccades in monkeys. *Neural control of Movement* 5: B-2.
- Corneil B.D.**, Olivier E., Munoz D.P. (2003). Evidence for a visual grasp reflex on dorsal neck muscles: short-latency, transient neck EMG bursts in response to visual target onset are independent of saccades. *Neural control of Movement* 5: E-4.
- Corneil, B.D.**, Van Wanrooij, M., Munoz, D.P., Van Opstal, A.J. (2002). Auditory-visual interactions subserving goal-directed saccades in a complex scene. *Multisensory interactions subserving orienting behavior; satellite for Neural Control of Movement*. D1, pp. 19.
- Corneil, B.D.**, Van Wanrooij, M., Munoz, D.P., Van Opstal, A.J. (2001). Auditory-visual interactions subserving goal-directed saccades in a complex scene. *Soc. Neurosci. Abstr.* 27: 71.26.
- Bell, A.H., Meredith, M.A., Van Opstal, A.J., Van Wanrooij, M., **Corneil, B.D.**, Munoz, D.P. (2001). Multisensory integration in the primate superior colliculus: saccades to visual and audio-visual stimuli. *Soc. Neurosci. Abstr.* 27: 681.2.
- Van Opstal, A.J., **Corneil, B.D.**, Munoz, D.P., van Wanrooij, M. (2001). Auditory-visual interactions in a complex scene: Properties of first saccade responses. *Neural Control of Movement Satellite: Multisensory interactions subserving orienting behavior*.

- Freedman, E.G., Crawford, J.D., van Opstal, J., **Corneil, B.D.** (2000) Current directions in head-free gaze control: The superior colliculus and beyond. (Platform Presentation) *Neural Control of Movement 5*: Session 00.11.
- Corneil, B.D.**, Olivier, E., Munoz, D.P. (2000) Features of the drive to dorsal neck muscles from the primate superior colliculus. *Soc. Neurosci. Abstr.* 26: 109.7.
- Bell, A.H., **Corneil, B.D.**, Meredith, M.A., van Opstal, J., Munoz, D.P. (2000) Multisensory integration in the primate superior colliculus. *Soc. Neurosci. Abstr.* 26: 455.11.
- Munoz, D.P., **Corneil, B.D.**, Bell, A.H., Meredith, M.A., van Opstal, J. (2000) Multisensory integration subserving orienting behavior. *2nd Annual Multisensory Research Conference*. pp 31.
- Bell, A.H., **Corneil, B.D.**, Meredith, A.M., van Opstal, J., Munoz, D.P. (2000) Multisensory integration in the superior colliculus of the awake behaving primate. *2nd Annual Multisensory Research Conference*. pp 51.
- van Wanrooij, M., **Corneil, B.D.**, Munoz, D.P., van Opstal, J. (2000) Auditory-visual integration in human saccades elicited in a noisy environment. *2nd Annual Multisensory Research Conference*. pp 56.
- Bell, A.H., **Corneil, B.D.**, Meredith, A.M., Munoz, D.P. (2000) Multisensory integration in the primate superior colliculus. *Neural control of Movement 5*: V-4.
- Corneil, B.D.**, Olivier, E., Bell, A.H., Munoz, D.P. (1999) EMG responses on neck muscles following stimulation in primate superior colliculus: Variations in stimulation parameters and state of fixation. *Soc. Neurosci. Abstr.* 25: 763.7
- Corneil, B.D.**, Olivier, E., Richmond, F.J.R., Loeb, G.E., Munoz, D.P. (1999) EMG responses from primate neck muscles participating in horizontal head movements following stimulation in the superior colliculus. *IVth International symposium on the head-neck system*.
- Munoz, D.P. and **Corneil, B.D.** (1999) Human eye-head gaze shifts in a multimodal distractor task: Truncated gaze shifts and early head movements. *IVth International symposium on the head-neck system*.
- Richmond, F.J.R., Singh, K., **Corneil, B.D.** (1999) How strong are the structural homologies between rhesus and human neck muscles? *IVth International symposium on the head-neck system*.
- Richmond, F.J.R., Singh, K., **Corneil, B.D.** (1999) Structural and functional specialization in the simian neck-muscle system. *Can. J. Physiol. Pharmacol.* 77: Avi
- Corneil, B.D.**, Olivier, E., Richmond, F.J., Loeb, G.E., Munoz, D.P. (1998) Electrical stimulation in the monkey superior colliculus activates muscles involved in horizontal head movement. *Soc. Neurosci. Abstr.* 24: 163.3.
- Richmond, F.J.R., **Corneil, B.D.**, Singh, K. (1998) Animal models of motor systems: cautionary tales from studies of head movement. *Tuscon meeting for Doug Stuart*, October.
- Richmond, F.J.R., Singh, K., **Corneil, B.D.** (1998) Morphometric and histochemical differences between primate and feline neck muscles. *Soc. Neurosci. Abstr.* 24: 656.1.
- Corneil, B.D.**, Olivier, E., Richmond, F.J., Loeb, G.E., Munoz, D.P. (1998) EMG activity in the dorsal neck muscles of monkey following electrical stimulation in the superior colliculus. *Neural Control of Movement 3*: E1 (2).
- Corneil, B.D.**, Hing, C.A., Bautista, D.V., Munoz, D.P. (1997) Coupling of head and gaze in a multimodal choice reaction task in humans. *Soc. Neurosci. Abstr.* 23: 296.5.

- Corneil, B.D.**, Hing, C.A., Munoz, D.P. (1997) Characteristics of incorrect gaze shifts and dissociated eye-head movements in a distractor paradigm in humans. *Can. J. Physiol. Pharmacol.* 75: Avi.
- Corneil, B.D.**, Loeb, G.E., Richmond, F.J., Munoz, D.P. (1996) EMG activity in dorsal neck muscles of the rhesus monkey during head movements and in different head positions. *Soc. Neurosci. Abstr.* 22: 801.11.
- Corneil, B.D.** and Munoz, D.P. (1996) Multisensory integration in the control of human gaze shifts. *Neural Control of Movement* 1: 27.
- Corneil, B.D.** and Munoz, D.P. (1995) Metrics of incorrect gaze shifts and dissociated eye-head movements in a distractor paradigm in humans. *Soc. Neurosci. Abstr.* 21: 470.2.
- Goldring, J.E., Hampton, K.A., **Corneil, B.D.**, Munoz, D.P. (1995) Saccadic eye movement to visual targets in humans with attention-deficit hyperactivity disorder. *Can. J. Physiol. Pharmacol.* 73: Ax.
- Corneil, B.D.** and Munoz, D.P. (1994) Effects of Auditory stimuli on human gaze shifts to visual targets. *Soc. Neurosci. Abstr.* 20: 573.10.
- Dorris, M.C., Goldring, J.E., **Corneil, B.D.**, Munoz, D.P. (1994) Strategies and characteristics of human head-free gaze shifts. *Can. J. Physiol. Pharmacol.* 72: Avi.
- Munoz, D.P., Scott, S.H., Dorris, M.C., **Corneil, B.D.**, Goldring, J.E. (1994) Discharge characteristics of collicular efferent neurons projecting to the paramedian pontine reticular formation in rhesus monkey. *Can. J. Physiol. Pharmacol.* 72: Axx.

PATENTS

Cognitive Control Signals for Neural Prosthetics. Inventors: Musallam S, Andersen RA, **Corneil BD**, Greger B, Schergerger H. Issued Nov 2nd 2010. Patent Number 7826894.

Remote control method of prosthetic limb, involves generating control signal to instruct external device to perform task associated with cognitive signal describing mood, motivation, preference and decision of patient. Inventors: Musallam S, Andersen RA, **Corneil BD**, Greger B, Schergerger H. Filed Oct 6th 2005. Number: WO2005092185-A2; US2005228515-A1g.

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The Anatomical Record; Behavior Research, Methods, Instruments & Computers; Brain Research; Cerebral Cortex; Current Biology; European Journal of Neuroscience; Experimental Brain Research; Journal of Computational Neuroscience; Journal of Neurophysiology; Journal of Neuroscience; Journal of Neuroscience Methods; Neuroscience; Neuroscience and Biobehavioral Reviews; Neuroscience Letters; Progress in Neurobiology; Vision Research; Transactions on Biomedical Engineering

ACADEMIC REFEREE

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NATIONAL OR INTERNATIONAL CONFERENCES

Board Member, Society for the Neural Control of Movement (2013-2016)
Co-chair, Gordon Research Conference on Eye Movements (2011-2013)

Organizer, Satellite conference for Canadian Association for Neuroscience on Neuroscience Careers in Government and Industry (2013, 2014)
Co-vice chair, Gordon Research Conference on Oculomotor Systems Biology (2007-2011)
Scientific Advisory Board, European Conference on Eye Movements (2011, 2013)

GRANTING COUNCIL ACTIVITIES

CIHR, Postdoctoral Fellowship Reviewer (2013)
FWO (a Belgian basic research organization), external review on PDF application
Canadian Foundation for Innovation (2012)
NSF, External Reviewer (2007, 2012)
Canada Research Chairs (2011)
NSERC, External Reviewer, CREATE program (2011)
NSERC, External Reviewer, Discovery Grants (2006, 2010, 2011)
Gordon Research Council (2009)
NSERC, External Reviewer, Steacie Fellowship (2009)
CIHR, Internal Reviewer, Biomechanical Engineering (2009)
CIHR, Master's Research Awards, Committee A (2006-2008)
CIHR, Doctoral Research Awards, Committee A (2005-2008)
CIHR, External Reviewer, Behavioural Sciences C (2005)
Physicians' Services Inc. Foundation, External Reviewer, Resident Research Grant (2005)

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