

# CANADIAN ASSOCIATION FOR NEUROSCIENCE SATELLITE SYMPOSIUM

**CAPnet-CPS Satellite**

## Action and Perception: Cognition, Coding and Clinical Populations

Sheraton Centre Hotel, Toronto, ON

Sunday, May 29, 2016

9:00 AM to 4:45 PM

**magstim**



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## Action and Perception: Cognition, Coding and Clinical Populations

**Program committee:** Jennifer Steeves (chair, York); Miriam Spering (UBC), Craig Chapman (Alberta), Ashley Parr (Queen's), Susanne Ferber (Toronto)

**9:00 - 9:15**      **Welcome & Acknowledgements**  
(Jennifer Steeves & Doug Crawford)

**9:15 - 10:45**    **Talk Session I – Coding and Computational Models of A & P**  
(Chair: Julio Martinez-Trujillo, Western)

9:15 - 9:30      An adaptation-induced tactile spatial illusion: experimental demonstration and Bayesian modeling  
**Luxi Li** and Daniel Goldreich (McMaster University)

9:30 - 9:45      Identification of a frontoparietal network in common marmoset monkeys at 9.4T  
**Maryam Ghahremani**, Ravi S. Menon, Stefan Everling (Western University)

9:45 - 10:00    Quantifying the contribution of proprioception to motor learning  
**Bernard Marius 't Hart**, Ahmed A. Mostafa, Denise Y. P. Henriques (Queen's University)

10:00 - 10:15    Place coding in the monkey hippocampus is task-dependent during virtual navigation  
**Roberto A. Gulli**, Guillaume Doucet, Ben Corrigan, Lyndon Duong, Sylvain Williams, Julio C. Martinez-Trujillo (Western University)

10:15 - 10:30    An anatomical interface for the guidance of saccades by medial temporal lobe representations  
**Shen K**, Bezgin G, Selvam R, McIntosh AR, Ryan JD (Rotman Research Institute)

10:30 - 10:45    Selective Modulation and Remapping of Neural Response Patterns in Visual Cortex by Movement Preparation  
**Jason Gallivan**, Craig Chapman, Randy Flanagan & Jody Culham (Queen's, Western U)

**10:45 - 11:15**    **Coffee break**

**11:15 - 12:30**    **Talk Session II – Cognition and Cognitive Influences on A & P**  
(Chair: Kari Hoffman, York)

11:15 - 11:30    An "Honest" Measurement of Sincerity: Genuine Emotions Dominate Conscious Perception During Binocular Rivalry  
**Nour Malek**, Andy Yuan Lee Gao, Daniel Messinger, Eva Krumhuber, Ridha Joober, Karim Tabbane, and Julio Martinez-Trujillo (McGill University, Western University)

11:30 - 11:45    Getting a grasp on real objects and pictures: Grasping movements directed to real objects and pictures rely on dissociable neural representations  
**Erez Freud**, Scott N. Macdonald, Juan Chen, Derek J. Quinlan, Melvyn A. Goodale, Jody C. Culham (Western University)

11:45 - 12:00    The effects of fornix stimulation on memory in non-human primates  
**Andrea Gomez** Palacio Schjetnan, Ahmed T. Hussin, Kari L. Hoffman (York University)

12:00 - 12:15    The Role of Reflectance and Illumination in Lightness Perception  
Kushba Patel, A. P. Munasinghe & Richard F. Murray (York University)

12:15 - 12:30    Visual interference differentially impacts separate components of forgetting in visual short-term memory  
**Sol Z. Sun**, Celia O. Fidalgo, Morgan D. Barense, Andy C.H. Lee, Jonathan S. Cant, Susanne Ferber (University of Toronto)

- 12:30 - 2:00**    **Lunch & posters (list of posters following below)**
- 2:00 - 3:15**    **Talk Session III – A & P in Clinical Populations**  
**(Chair: Susanne Ferber, Toronto)**
- 2:00 - 2:15    DTI reveals asymmetry in the optic radiations following early monocular enucleation  
**Nikita Wong**, Sara Rafique, Krista Kelly, Stefania Moro & Jennifer Steeves (York University)
- 2:15 - 2:30    Hook, worm and noodle: Parsing perceptual and conceptual processes of the medial temporal lobe  
**Danielle Douglas**, Rachel Newsome, Louisa Man & Morgan Barense (University of Toronto)
- 2:30 - 2:45    Dysfunctional decision-making processes in Parkinson’s patients playing a strategic game  
**Ashley Parr**, Brian Coe, Giovanna Pari & Douglas Munoz (Queen’s University)
- 2:45 - 3:00    Facial identity encoding and neural-based image reconstruction  
**Adrian Nestor**, Dan Nemrodov, David Plaut, Marlene Behrmann (University of Toronto)
- 3:00 - 3:15    The effects of exercise on cognitive function in people suffering with Major Depressive Disorder  
**Joanne Gourgouvelis**, Paul Yelder, Bernadette Murphy, Hushyar Behbahani
- 3:00 - 3:15    The attentional fields of visual search in simultanagnosia and healthy individuals  
**A.Z. Khan**, M. Prost-Lefebvre, R. Salemm, G. Blohm, Y. Rossetti, L. Pisella (U Montréal)
- 3:30 – 4:00**    **Coffee break**
- 4:00 - 4:45**    **CPS Sarrazin Award Keynote Lecture by Doug Crawford, York University**  
**“TBA”**  
**Chair: Eric Accili**

*The main poster session will be during lunch hours; however, posters should be up for the entire day. We suggest that presenters (names in bold) in Poster Session I should be at their poster from approx. 12:30 - 1:15 pm, presenters in Poster Session II should be at their poster from approx. 1:15 - 2 pm. Poster boards will be numbered and posters are roughly grouped by topic.*

### **12:30 - 1:15    Poster Session I – Eye Movements, Vision, Vestibular & Auditory Systems**

1. Plasticity within pathways mediating vestibular reflexes: implications for the efficacy of a vestibular prosthesis  
**Diana E. Mitchell**, Charles C. Della Santina, Kathleen E. Cullen (McGill, Johns Hopkins)
2. Using eye movements to establish distinct biomarkers across the healthy lifespan  
**M. L. Smorenburg**, R. Yep, B. C. Coe, D. C. Brien, & D. P. Munoz (Queen's)
3. The Dynamic Responses of Vestibular Afferents during Transmastoid Galvanic Vestibular Stimulation  
**Annie Kwan**, Diana E. Mitchell, Patrick A. Forbes, Jean-Sébastien Blouin, and Kathleen E. Cullen (McGill, UBC, Delft University of Technology)
4. Selective encoding of unexpected head tilt by the central neurons but not by the vestibular afferent  
**Isabelle Mackrous** (McGill)
5. Distractor-Target Similarity Modulates Saccade Curvature  
**Devin Kehoe**, Selvi Aybulut, Mazyar Fallah (York)
6. Using pupil response to assess cognitive function across the healthy lifespan  
**Jeff Huang**, Matthew L. Smorenburg, Brian C. Coe, Chin-An Wang, and Douglas P. Munoz (Queen's)
7. Reaction time variability of gaze-shifts towards cross-modal stimuli  
**Mehdi Daemi**, Doug Crawford (York)
8. Dynamics of spontaneous otoacoustic emissions: Theory and experiment  
**Christopher Bergevin** (York)
9. Transsaccadic integration of spatial frequency information in an fMRIa paradigm  
**Bianca Baltaretu**, Dr. Benjamin Dunkley, Dr. J. Douglas Crawford (York)
10. Selective scanpath repetition during memory-guided visual search  
**Jordana S. Wynn**, Michael Bone, Michelle C. Dragan, Kari L. Hoffman, Bradley R. Buchsbaum, Jennifer D. Ryan (Toronto, Rotman Research Institute, York)
11. A Gaze into the Mind's Eye: Gaze as an Indicator of Cortical Reinstatement during Mental Imagery  
**Michael Bone**, Marie St-Laurent, Christa Dang, Douglas McQuiggan, Jennifer D. Ryan, & Bradley R. Buchsbaum (Toronto, Rotman Research Institute)
12. Spatial codes in the Superior Colliculus Delay Activity during a Memory-Guided Gaze Task  
**Sajad A**, Sadeh M, Yan X, Wang H, Crawford JD (York)
13. Characterizing Eye-movement Behaviour and Kinematics of Non-Human Primates in a Virtual Environment  
**Benjamin Corrigan**, Roberto Gulli, Guillaume Doucet, Julio Martinez-Trujillo (McGill, Western)
14. The Relationship Between Working Memory and Transsaccadic Integration  
**Adam Frost** & Matthias Niemeier (Toronto)
15. Errors in perceived finger orientation: the effect of vestibular disruption  
**Lindsey E Fraser** & Laurence R Harris (York)
16. Motion induced blindness is attenuated by vection  
**Yasmeenah Elzein** and Laurence R. Harris (York)
17. Gravity can influence perceived linear acceleration  
**M. McManus** and Laurence R. Harris (York)
18. Co-occurring problems in auditory filtering and intersensory processing of speech information in children with autism spectrum disorder  
**Hadas Dahary**, Lisa N. Alli, James M. Bebko (York)
19. Target Selection and Spatial Cueing of Adults Delivered by Caesarean Section  
**Comishen, Kyle J.**, Wong-Kee-You, Audrey M.B., & Adler, S.A.
20. Adapted use of audiovisual information for person and object recognition in people with one eye

- Stefania S. Moro**, Adria E. N. Hoover and Jennifer K. E. Steeves (York)
21. Projecting yourself into a TV screen  
**Adria E. N. Hoover** and Laurence R. Harris (York)
  22. Encoding of task-relevant stimulus parameters by neuronal ensembles in primate dorsolateral prefrontal cortex  
**Theda Backen**, Stefan Treue, Julio C. Martinez-Trujillo (McGill, Western, Bernstein Centre for Computational Neuroscience)
  23. Beyond the single neuron: Ensemble coding of working memory in primate prefrontal cortex  
**Matthew L. Leavitt**, Adam J. Sachs, Julio C. Martinez-Trujillo (McGill, Ottawa Hospital Research Unit, Western)

### 1:15 - 2:00 Poster Session II – Movement & Cognitive Functions

24. Altered structural connectivity associated with visual hallucinations following occipital stroke  
**Sara A. Rafique**, John R. Richards, Francisco N. P. Parreira, & Jennifer K. E. Steeves (York)
25. rTMS to the OFA shows increased correlation to right and left FFA  
**Francisco N. P. Parreira**, Sara A. Rafique, Lily M. Solomon-Harris, Jennifer K. E. Steeves (York)
26. Cortical mechanisms underlying reach-grasp integration  
**Ada Le**, Simona Monaco, Ying Chen, Doug Crawford (York)
27. Colour Modulates Inhibitory Control  
**Shawn Blizzard**, Adriela Fierro-Rojas, Dr. Mazyar Fallah (York)
28. Implicit Learning Facilitates Cognitive Control in a Response Switching Task  
**Silvia Isabella**, Dr. Charline Urbain, J. Allan Cheyne, Douglas Cheyne (Sick Kids, Waterloo)
29. Concurrent reach and tracking adaptations of static and moving targets  
**Maria Ayala**, Priyanka Sharma, Dr. Denise Henriques (York)
30. Getting a grasp on real objects and pictures: Grasping movements directed to real objects and pictures rely on dissociable neural representations  
**Erez Freud**, Scott N. Macdonald, Juan Chen, Derek J. Quinlan, Melvyn A. Goodale, Jody C. Culham (Carnegie Mellon, Western)
31. Defective Perceptual Pseudoneglect in ADHD: Evidence for a Functional Disconnection from Early Visual Activation  
**Jiaqing Chen**; Matthias Niemeier (Toronto)
32. Effector-specific cortical mechanisms for memory-guided reaches and saccades: progression from target memory through motor planning and execution  
**Cappadocia DC**, Monaco S, Chen Y, and Crawford JD (York)
33. Familiar Size Relationships Decrease Size Contrast Illusion  
**M.V. Maltseva**, K.M. Stubbs, M.A. Goodale & J.C. Culham (Western)
34. Effects of cognitive-motor integration training in a clinical Alzheimer's disease population  
**Mani Kang**, Lauren Sergio (York)
35. Time course of reach adaptation and proprioceptive recalibration during visuomotor training  
**Jennifer E. Ruttle**, Erin K. Cressman, Denise Y. P. Henriques (York, Ottawa)
36. Subclinical Neck Pain Alters Upper Limb Kinematics during Dart Throwing  
**Julianne Baarbé**, Bernadette Murphy, Heidi Haavik, Michael W. R. (UHN, UOIT, New Zealand College of Chiropractic)
37. The effect of local, remote and contralateral tonic pain on motor learning and sensorimotor integration using a motor tracing task  
**Erin Dancey**, Bernadette Murphy, Danielle Andrew, Paul Yelder (UOIT)
38. Evidence of impaired Cognitive function in individuals suffering with Major Depressive Disorder despite treatment with antidepressant medication  
**Joanne Gourgouvelis**, Paul Yelder, Bernadette Murphy (UOIT)
39. Subclinical neck pain impairs the cerebellar response to motor training which is normalized following treatment with spinal manipulation

- Julianne Baarbé**, Paul Yelder, Heidi Haavik, Michael Holmes, Bernadette Murphy (UOIT, New Zealand College of Chiropractic)
40. Predictability of others' actions modulates the sense of joint agency during interpersonal coordination  
**Nicole Czemerer & Janeen Loehr** (University of Saskatchewan)
41. Two Modes of Joint Action: Deliberate Cooperation vs. Automatic Entrainment  
**Lin Guo**, Matthias Niemeier (Toronto)
42. A Wide Field Immersive Display for the Study of Locomotor Behaviour  
**Jingbo Zhao & Robert S. Allison** (York)
43. Investigating the influence of expertise and familiarity on segmentation of dance and non-dance movements  
**Paula M. Di Nota**, Michael P. Olshansky & Joseph F.X. DeSouza (York)
44. Does Feature-based Attention Alter the Perception of Object Gestalts?  
**Nina Lee & Matthias Niemeier** (Toronto)
45. A method to measure repetitive movements in children with ASD and the measurements  
**Carriot, Nicolson**, Martinez-Trujillo (Western)
46. Impacts of dance intervention on individuals with Parkinson's Disease (PD)  
**Karolina A Bearss**, Stephanie Simone, Sophia Maguire, Kaili-Larissa Martin, Gaelle Nsamba Luabeya, Joseph FX DeSouza (York, Toronto)
47. Building informative neural ensembles to decode attention in primate lateral prefrontal cortex  
**Lyndon Duong**, Matthew L. Leavitt, Sebastien Tremblay, Adam Sachs, Julio C. Martinez-Trujillo (Western, McGill, The Ottawa Hospital)
48. Conjunctive Visual Processing Difficulties in Children with Autism Spectrum Disorder  
**Z. Y. Wang**, A. Philipp-Muller, R. A. Stevenson, L. K. Yeung<sup>1</sup>, K. R. Black, J. Lee, J. Luk, M. D. Barense, and S. Ferber (Toronto, Western, Rotman Research Institute)
49. Visual orientation of the face and arm determines perceived size  
**Sarah D'Amour & Laurence R. Harris** (York)
50. Influence of low level exercise on the within and between session reliability of the Cambridge Neuropsychological Test Automated Battery  
**F.M.Williams-Bell**, S.M. Buren, S.R. Passmore, B.A. Murphy (UOIT, University of Winnipeg, Durham College)
51. Binocular Disparity Priors from an Active Observer Perspective  
**Agostino Gibaldi**, Andrea Canessa, Silvio P. Sabatini (University of Genoa)
52. The Human Dentate Gyrus Plays a Necessary Role in Pattern Separation  
**Stevenson Baker**, Paula Vieweg, Fuqiang Gao, Asaf Gilboa, Thomas Wolbers, Sandra E. Black, and R. Shayna Rosenbaum (York, Otto-von-Guericke University Magdeburg, Magdeburg, Rotman Research Institute)
53. Investigating the Effects of Perceptual and Cognitive Interference on Recognition Memory in Amnesia  
**Bryan Hong**, Rachel N. Newsome, Victoria M. Smith, Alexander Jacob, Alexandra N. Trelle, Maria D'Angelo, Jennifer D. Ryan, R. Shayna Rosenbaum, & Morgan D. Barense (Toronto, Rotman Research Institute, Cambridge)