Annual Report Template
for Organized Research Units

Office of the Vice-President Research & Innovation
York University

Centre for Vision Research

Annual Report

July 1, 2011 – April 30, 2012

1. Contact Information

Director	Laurence Harris
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ORU Website	http://cvr.yorku.ca

2. Faculty Representation

Faculty of Health
Faculty of Science and Engineering
Glendon College

3. Charter dates: first Charter **1992**; last renewal **Feb 2010**

4. CVR's Mandate

Our mandate is to pursue interdisciplinary research and training in the broadly-defined visual sciences and their applications. The sense of vision does not stand alone: it is the primary input not only for understanding the world around us, but also for guiding action in the world, for determining interaction with the world and inherently integrates with the other sensory processes. The CVR provides a simple and effective infrastructure that provides members with maximal freedom in pursuing their research programmes while encouraging collaboration among members and across disciplines.

5. Membership and Governance

The steering committee will assign each person to the category that it feels fits best. New members appointed by director with advice from steering committee. The goal is to ensure all members have opportunity to influence the CVR.

Member: Tenured or tenured-stream York Faculty who are active in research and primary research interest is consistent with CVR mandate

Associate: Contractually–limited York faculty who are active in research and interest is strongly relevant to CVR mandate

Sr. Research Associate - Sr. Research Associates who are active in research and interest is strongly relevant to CVR mandate

Affiliate: Research Associates, graduate students, post-doctoral fellows, visitors, programmers, industrial partners, administrative assistants, staff (sponsored by a CVR Member, Associate or Adjunct)

Adjunct: Faculty outside York who would have qualified for Member or Associate status or who are collaborating with a Member or Associate

Benefits of Membership

Member: use of CVR facilities/labs; use of administrative assistant and/or secretary; eligible for membership on steering committee; eligible to be a CVR grant PI; included on CVR web pages, brochure; eligible as primary supervisor of CVR graduate students; eligible for overhead sharing

Associate: use of CVR facilities/labs; use of CVR technical staff for your lab; use of administrative assistant and/or secretary; eligible for membership on steering committee; eligible to be a CVR grant PI; included on CVR web pages, brochure;

Sr. Research Associate - use of CVR facilities/labs; use of administrative assistant and/or secretary; included on CVR web pages, brochure

Affiliate: use of selected CVR facilities/labs; use of administrative assistant and/or secretary; included on CVR web pages, brochure

Adjunct: enjoys regular visits to CVR (minimum, one day per month); desk to work at while visiting; use of selected CVR facilities/labs; included on CVR web pages, brochure; co-investigator status on CVR grants; small honorarium for expenses; eligible as co-supervisor of CVR graduate student

Renewal/Review/Termination of Membership

- Continued membership to CVR includes participation (i.e. seminars, attending annual retreat, bi-annual conference, submission to the annual report and CVR brochure
- Mid-term review of Director
- Service category to be added to the CVR Annual report

Members of the centre

CVR members (York faculty; n=29)	
Scott Adler	Associate Professor of Psychology *development of eye movement control, visual selective attention, object recognition, and visual expectations*
Rob Allison	Associate Professor of Computer Science and Engineering *stereoscopic vision, perceptual issues in virtual environments, eye movements*
Doug Crawford	Professor of Psychology, Biology and Kinesiology and Health Science; Canada Research Chair in Visual-Motor Neuroscience Chair, Neuroscience Diploma Program *three-dimensional eye and head movements, eye-hand coordination, trans-saccadic perceptual integration, modeling, neurophysiology*
Joseph DeSouza	Assistant Professor of Psychology, Biology and Neuroscience Diploma *systems neuroscience, frontal cortex, attention, fMRI, corollary discharge, eye position signals and oculomotor neurophysiology*
James Elder	Associate Professor of Psychology; Computer Science and Engineering *human and computer vision*
Mazyar Fallah	Assistant Professor of Kinesiology and Health Science *visual perception and attention, object processing, oculomotor systems.*
Laurence Harris	Professor of Psychology and Director, Biology and Kinesiology and Health Science; Director, Centre for Vision Research *multisensory processing, perception and coding of space, time, the body and self-motion*
Denise Henriques	Associate Professor Kinesiology and Health Science and Psychology *motor learning, multisensory integration, visuomotor control, eye-hand coordination*
Kari Hoffman	Associate Professor of Psychology *face processing, learning, memory and plasticity, sleep oscillations*
Ian Howard	Distinguished Research Professor of Psychology and Biology *space perception, eye movements, binocular vision*
Richard Hornsey	Professor of Computer Science and Physics; Associate Dean, Faculty of Science and Engineering *integrated electronic sensors, biologically inspired image sensors, low vision enhancement systems, sensors for space applications*
Michael	Professor of Computer Science

Jenkin	*computer vision, mobile robotics, immersive visual displays*
Richard Murray	Associate Professor of Psychology *visual psychophysics, spatial vision, 3D shape perception*
Hiroshi Ono	Distinguished Research Professor of Psychology *visual perception of direction and distance, eye movement*
David Regan	CAE/NSERC Industrial Research Professor; Distinguished Research Professor of Psychology and Biology; Professor of Ophthalmology and Medicine, University of Toronto; Fellow of the Royal Society of Canada; Foreign Fellow of the Royal Netherlands Academy of Science *psychophysics of spatial vision, motion, stereopsis, colour vision, vision aviation, visually evoked magnetic and electrical brain activity, visual disorders, auditory psychophysics*
Josée Rivest	Associate Professor of Psychology, Glendon College; Department of Psychology, Baycrest Centre for Geriatric Care *neuropsychology, face and object recognition, rehabilitation of visual neglect*
Keith Schneider	Associate Professor of Biology; Facility Director of Neuroimaging Laboratory *neural mechanisms of attention and perception; phenomenology of attention; structural and functional fMRI*
Lauren Sergio	Associate Professor of Kinesiology and Health Science *neural mechanisms of visually guided reaching in parietal and precentral cortex*
Minas Spetsakis	Associate Professor of Computer Science *computer vision and robotics*
Jennifer Steeves	Associate Professor of Psychology; Adjunct Scientist Neurosciences and Mental Health, The Hospital for Sick Children Research Institute; Adjunct Associate Professor, Department of Ophthalmology and Vision Sciences,Faculty of Medicine, University of Toronto *face and scene processing in neurological patients and one-eyed observers*
Martin Steinbach	Distinguished Research Professor of Psychology and Biology; Director, Vision Science Research, Toronto Western Hospital; Senior Scientist, Dept. of Ophthalmology, Hospital for Sick Children; Director of Research, Department of Ophthalmology, University of Toronto *eye movements, visual-motor coordination, clinical disorders of the oculomotor system*
Wolfgang Stuerzlinger	Professor of Computer Science and Engineering *human-computer interaction, virtual reality, computer graphics*
Christine Till	Assistant Professor of Psychology *brain injury across the lifespan; pediatric multiple sclerosis; cognitive recovery following traumatic brain injury (TBI) in adults; maternal fetal health; children's environmental health; visual toxicity*
John Tsotsos	Distinguished Research Professor of Vision Science; Professor of Computer Science and Engineering; Canada Research Chair in Computational Vision;Adjunct Professor, Dept. of Computer Science, University of Toronto; Adjunct Professor, Dept. of Ophthalmology, University of Toronto *human and machine vision, computational models of attention, motion understanding, robotics*
Laurie	Professor of Psychology; Associate Director, Centre for Vision Research;

Wilcox	Graduate Director, Department of Psychology *stereopsis/depth perception*
Richard Wildes	Associate Professor of Computer Science *spatiotemporal analysis of visual information, motion analysis, binocular vision, gesture recognition, biometrics*
Frances Wilkinson	Professor of Psychology Affiliated Scientist, Division of Applied and Interventional Research, Toronto Western Research Institute, University Health Network, Toronto ;Adjunct Professor - Department of Ophthalmology, University of Toronto *involvement of the visual system in migraine; intermediate visual form perception using psychophysical, computational and fMRI methodologies*
Hugh Wilson	Professor of Biology. ORDCF Chair of Biological and Computational Vision; Fellow, Canadian Institute for Advanced Research; Fellow, Optical Society of America *psychophysical and neural models of form vision; fMRI studies of cortical form vision, nonlinear dynamics of cortical function*
Thilo Womelsdorf	Associate Professor of Biology. *brain mechanisms of attention*

Other members (see Guide)

ADJUNCT MEMBERS (n=20)	
Suzanna Becker	Psychology, McMaster University *Neural network models of learning and memory, computational neuroscience, unsupervised learning in perceptual systems, long-term priming, semantic memory organization, the role of feedback in cortical processing, involvement of the hippocampal, frontal and parietal brain regions in memory formation and retrieval. Neural networks for signal processing: image analysis and compression.*
Pat Bennett	Psychology, McMaster University *Visual Perception, spatial vision, psychophysics, perceptual learning and development, aging and vision, ideal observer theory*
Jennifer Campos	Toronto Rehabilitation Institute *Self-motion perception, multisensory integration, perception-action coupling, visuomotor control, Virtual Reality, the interactive nature of perception and action, locomotor rehabilitation*
Sven Dickinson	Computer Science, University of Toronto *computational vision, object modeling, object recognition (both bottom-up and top-down), attention, shape recovery, and tracking, and how they may be unified under a single representational framework*
Cheyne Douglas	Medical Imaging, University of Toronto
Elizabeth	Optometry, Waterloo

Irving	
Alan Jepson	Computer Science, University of Toronto *low, intermediate and high level vision.*
Jocelyn Keillor	National Research Council, Canada
Richard Mann	Computer Science, University Waterloo *Computational vision (high-level vision, motion understanding, event recognition); Perception; Artificial intelligence*
Matthias Neimeier	Psychology, University of Toronto *Transsaccadic integration, what kind of information is stored across saccadic eye movements? How is it represented in the brain? How can it be employed for perceptual tasks? Computational simulations, psychophysical methods and eye movement recordings and fMRI.*
Kathleen O'Craven	Psychology, University of Toronto *fMRI, visual attention, visual cognition, imagery, inhibitory processes, top-down effects, extrastriate cortex, perception of faces and places*
Jay Pratt	Psychology, University of Toronto *Visual Attention, Eye Movement, Motor Control, Age Related Changes in Attentional and Motor Systems*
Brian Rogers	Experimental Psychology, University of Oxford *Experimental studies of human visual perception - particulary 3-D vision: Stereopsis, structure from motion; perception of motion, visual control of locomotion, perception theory, artificial intelligence and computional studies.*
Allison Sekuler	Psychology, McMaster University *Cognitive neuroscience, visual perception, perceptual organization, face and object recognition, motion perception, aging and vision, neuroimaging*
Andrew Smith	Psychology, Royal Holloway University of London
NikoTroje	Dept. of Psychology and School of Computing, Queen's University *Visual perception, biological motion perception, face recognition, cognitive neuroscience, neuroethology, computer vision.*
Doug Tweed	Psychology, University of Toronto *Sensory-motor transformations, computational models, visual and gaze-control systems. Models of binocular coordination and depth vision. My work has emphasized the importance to brain theory of nonlinear algebra and dynamics, optimization, natural selection and learning.*
Carol Westall	Hospital for Sick Children *Clinical pediatric visual electrophysiology*
Agnes Wong	Ophthalmology and Vision Sciences, University of Toronto *Strabismus and issues in child vision*
Richard Zemel	Computer Science, University of Toronto *Machine learning and perception using techniques from statistics and information theory, including unsupervised learning and information combination in uncertain environments, and mathematical and computational models of neural processing and representations.*

Steering Committee members

Director	L. Harris
Associate director	J. Steeves (- Jan 2012) R. Allison (Jan 2012-)
MRI facility director	K. Schneider
Member	S. Adler
Member	J. Elder
Member	M. Fallah
Member	D. Henrique

MRI business committee 2012

Laurence Harris (chair)
Donna Smith
Keith Schneider
Jennifer Steeves
Christine Till
Alison Collins
Maz Fallah

Advisory Board members (if any) **N/A**

6. Annual Progress in Fulfilling Mandate (750 words max)

a. submitted funding proposals for large scale or team activities in which the PI is an active member of the ORU or the ORU will play a role in the project (for example as grant administrator, research partner, provider of space or other resources, or in some other capacity); indicate outcome of proposals if known; indicate peer reviewed or non-peer reviewed

- CFI proposal (F2PE) in the current round PI Harris, other CVR members involved include Jenkin, Allison.
- Mazyar Fallah, Douglas Crawford (Co-PI) Motor Control of Spatial Attention CIHR Operating Grant
- NSERC Strategic Network Grant in Field Robotics. (NFRN). $1M/year x 5 years. Greg Dudek PI. Jenkin co-investigator
- CSA Grant. FAST program Off-earth perception of motion (OEPOM) (Harris and Jenkin). Still under review
- NSERC Create Round #2 (PI Jenkin, also Allison).
- Attentional Control Functions in Neuronal Microcircuits and Large Scale Brain Networks. Canada Foundation for Innovation. Leaders Opportunity Fund. Amount requested: $320.000 CAD (Womelsdorf) Decision Expected in June 2012.
- 2012-2013 OMDC 200,000 Entertainment and Creative Cluster Partnerships Fund, The 3D Film Innovation Consortium (3D FLIC): Phase II (Allison)
- 2012-2013 CFI $320,000 A. Kazimi Leader's Opportunity Fund, Stereoscopic 3D Lab
- 2012-2013 GRAND NCE $20,800 GRAND NCE, Artistic & Technical Approaches to Content Creation & Display for Stereo 3D and Other Novel Media (this is Allison's portion as a Collaborative Network Investigator)

b. conferences, workshops, exhibits or other events hosted or organized (indicate total numbers in attendance and total number of participants from outside York University, outside Ontario and outside Canada)

- 2011 Cosmo Motor Control Summer School (Doug Crawford with G. Blohm). Dates: August 7-21, 2011 Location: Queen's University, Kingston, Ontario, Canada 40 people in attendance from different universities

- 2012 IRTG Planning workshop (Crawford, Henriques, Harris). Dates: April 28-29, 2012 Location: York University, Toronto, Ontario, Canada 20 people attended including 6 participants from Germany

- Toronto International Stereoscopic Conference, June 11–14, 2011, a grand total 5786 tickets were sold for all the events, panels and talks (sold through box office). The event was run by 3DFlic (which is partially through CVR).

- AI/GI/CRV 2012. Canadian conference on AI, Computer Graphics, and Computer/Robot Vision. Held at York in May 2012. Roughly 250 attendees. Jenkin is the local arrangements chair.

- Josée Rivest participated in the organization of the Neuropsychology seminars (rounds) at Baycrest: Weekly meeting – attendance: about 20 health care providers (many in training)

- "Plastic Vision" International Conference of the Centre for Vision Research, York University June 15-20, 2011. Around 200 attendees (I know this is outside the reporting period, but I think it fell between reporting periods).

- Center for Vision Research Vision Science Summer School, May16-20, 2011, York University. (I know this is outside the reporting period, but I think it fell between reporting periods).

- May 2011: Association for Research in Vision & Ophthalmology meeting, Ft. Lauderdale Florida. Steinbach organized luncheon for 100+ Canadian members to provide updates on funding and other research opportunities in Canada.

c. knowledge mobilization/engagement/outreach/technology transfer activities and accomplishments such as:

i. Joint projects or initiatives with non-academic partners (including public, private, non-profit, community)

- Working with Ministry of Transportation and Array Systems on video-based traffic analytics systems (co-funded by GEOIDE and OCE). Elder is preparing a technical disclosure. He has also begun a collaboration with Zerofootprint and OCAD on sensing and visualization of human activity and energy use in urban environments. His work was featured in the Ontario Centres of Excellence 2010/2011 Annual Report

  http://www.oce-ontario.org/docs/publications/oce_annualreport_2010-2011801D5BE1E3F6.pdf?sfvrsn=4 (Page 11, Working with academia.)

- Richard Hornsey completed a collaborative project with the Flight Research Laboratory of the National Research Council on "TRILOBITE: a wide field-of-view collision avoidance system."

- Jenkin is the co-founder of Independent Robotics Inc. A private Canadian company selling robots. We have entered into a partnership with Adept Mobile Robotics Inc. which is now selling the platform world-wide.

- Jenkin is working with MDA Robotics on the development of a serious game-based interface for training bomb disposal robots. The same device is being adapted for use in training Lunar/Martian lander operators.

- Sergio: Early dementia detection clinical tool development. Partners: Southlake Regional Health Centre (Dr. Adriana Bida), York Central Hospital (Dr. Jeya Thayaparan), Humber River Regional Hospital (Dr. Adam Krajewski). Commercialization in early stages (working with York Technology transfer, Ontario Brain Institute, MaRS Innovation)

- Editor for the "Managing School Related Issues" document produced by the National MS Society (USA) & Regional Pediatric MS Centres (Till)

- NINDS, Pediatric Neuropsychology Common Data Elements, Steering Committee (Till)

- OMDC funded 3DFilm Innovation Consortium with numerous industry partners including IMAX, Christie Digital, 3DCC, CreativePost, Cinespace Studios (Wilcox)

- Ontario 3D partnership with Sheridan College – co-development of S3D web portal, launched March 2012 (Wilcox)

- Collaborative research and development projects (NSERC CRDs) (Wildes)

    - "Spatiotemporal Stereo Vision for Space and Terrestrial Robotics" with MDA Space Missions. Includes technology transfer of algorithms, software and experimental data and analysis.

    - "Video-Based Range Estimation for Automotive Applications" with GM Canada. Includes technology transfer of experimental data and analysis.

- Industry sponsored research (MDA Space Missions) (Wildes)

    - Comparative Evaluation of Stereo Algorithms. Includes technology transfer of experimental data and analysis.

ii. New texts, tools, web features, or other products developed for the ORU's non-academic community or audience

- In collaboration with the York GeoICT lab (Prof. G. Sohn), Elder has co-developed 3DTown, a web portal for 3D urban awarenesss: http://icampus.apps01.yorku.ca/demo/

- YEDDI: York Early Dementia Detection Instrument. Tests rule-based visuomotor integration in clinical and at-risk dementia populations (MCI, parental history). (Sergio) Also Sergio is in talks with the Wilson Surgical Skills Centre (UHN) to develop evaluation tool for telerobotic surgical training.

iii. Media engagement

- Why do we stop and Stare? Doug Crawford interviewed by Montreal Gazette's Kelly Grieg http://www.montrealgazette.com/news/stop+stare+help+instinct/6137358/story.html

- Hoffman: http://yfile.news.yorku.ca/2012/02/16/roving-eyes-help-us-see-things-better-and-faster/

- Brain to blame for wandering eyes http://www.yorku.ca/yfile/archive/index.asp?Article=18189 was published because of the impact of a Journal of Neuroscience article published the news media relations' office at York has released a news piece in Y-file on December 16th, 2011. This news article was picked up by at least 38 newspaper and radio media organizations (Metro News in Toronto, Ottawa, Vancouver, Edmonton, Halifax...680 News, 97.5 EasyRock, Winnipeg Free Press) as of December 19th. De Souza has now been asked for interviews by more than one newsletter (in the UK) based on this paper.

- Additionally, De Souza has participated in a filming on March 13th, 2012 of a PBS-style show in the CVR and at the Sherman Health Sciences Centre. The title is the Secrets of Brain. It will be 52-minutes popular science film, which will be show in prime time on the most famous federal television channel in Russia.

- Seeing Machines – York University's Elder Lab is developing cameras that behave like the human eye. (2011, July 30). The National Post, p. A6. http://news.nationalpost.com/2011/07/30/seeing-machines-developing-cameras-that-can-see-like-humans/#more-82570

- Not quite outer space but…, CBC News: Toronto (CBLT-TV) (2011, July 13).

- Discussion with James Elder, Professor of Engineering and Psychology, York University… Here & Now (CBLA-FM). (2011, July 13).

- Ontario Centres of Excellence – Success Story: **http://www.oce-ontario.org/meet-our-companies/success-story/2012/01/09/dr.-james-elder**

- Unmanned aerial vehicle taking a close look at York University − in 3D: York University Media Relations. http://news.yorku.ca/2011/07/13/unmanned-aerial-vehicle-taking-a-close-look-at-york-university-%E2%88%92-in-3d/

- Sergio interviewed by CTV news (Sandi Rinaldi) on concussion and chronic traumatic encephalopathy;

- Sergio interviewed by The Hockey News on youth and concussion;

- Sergio interviewed by Good Housekeeping for their parents section, on potential benefits of video gaming on brain activity (based on 2010 publication);

- Sergio interviewed by Sweat magazine (health and fitness magazine) also on concussion and cognitive-motor integration topic.

- Steeves CBC Radio's "Spark", interview Oct 2, 2011, "Facial Recognition", http://www.cbc.ca/spark/2011/09/spark-157/

iv. Provision of research expertise to non-academic users

- Elder $25,000 NSERC Engage Grant May – Nov 2011, with Magic Information Systems. Computer Vision for the Home Improvement Industry: Feasibility Study.

    - Magic Information Systems is an SME in the North York region providing software and services for wholesale distribution and manufacturing.

- Ono was invited to take part in the Symposium & Exhibition of Visual Illusion +S3D World 2012: Invitation to Visual Science. The forum for advancement of three dimensional image technology and arts. Ritsumeikan University, March 17th, 2012, Kyoto, Japan

- Sergio member, York Lions Sport Medicine team. Gave a symposium on the neuroscience of concussion to athletes. Also gave a talk at Southlake Regional Health Centre to clinicians and nursing/medical students (research rounds, counted for credit for trainees) on cognitive-motor integration and its application to functional assessment following mild traumatic brain injury or early neurodegeneration.

d. facilitating faculty or student research through mentorship, development or support programs or services (eg in-house workshops, grant preparation support)

- ***2012-2013*** **1st York University CVR Research Retreat Organized and chaired by Elder.**This full-day event provided a relaxed forum for the exchange of research ideas between CVR research faculty, to improve awareness of research interconnections and opportunities for collaboration. 20 faculty members participated.

- Centre for Vision Research Summer School. 25 of 107 applicants were selected from senior undergraduate students from all over the world will attend a one week workshop from June 3rd to 8th, 2012. See link for map of all applicants who applied from all over the world http://g.co/maps/vkq5s

- Henriques and Steeves participated in York-Seneca Summer Science and Technology Program, by having a high school work in lab for 6 weeks the summer of 2011

- Several CVR members have been involved in establishing the new Faculty of Engineering at York (Hornsey, Allison, Elder, Jenkin)

e. contributions to teaching (e.g. delivery or creation of certificate, diploma, graduate, or continuing education programs)

- Neuroscience Graduate Diploma Program (www.yorku.ca/neurosci/): Fundamentals of Neuroscience I & II graduate course is team taught by Sergio, De Souza, Fallah and Hoffman. Sergio Director, York Neuroscience Graduate Diploma Program. Expanded program to include another department & faculty (Philosophy/LAPS)

f. other research leadership activities of the unit (identify the ORU member(s) who served as academic lead for the activity)

- Editorial Board, *Journal of Vision* (Elder)
- Editorial Board, *IET Computer Visio*n (Elder)
- Review Committee, Vision Sciences Society (Elder)
- Editorial Board, *ACM Transactions on Applied Perception* (Elder)
- *Editor in chief Seeing and Perceiving: a journal of Multisensory Science* (Harris)
- University Representative for the Canadian Microelectronics Corporation (now known as CMC Microsystems) (Hornsey).
- Sergio is a research scientist at Southlake Regional Health Centre. She facilitated 8 research projects this past school year involving 11 graduate and undergraduate York students, 3 York faculty, and 7 Southlake clinicians.
- Member of the Board: Smith Kettlewell Eye Research Institute, San Francisco. (Steinbach)
- Board Member, 20/20 NSERC Ophthalmic Materials Network. (Steinbach)
- Board Member, Ontario Research Fund Retinal Blood Flow and Imaging Network Research Committee. (Steinbach),
- CNIB/Baker Foundation for the Prevention of Blindness. Executive Member, National Coalition for Vision Health . (Steinbach)
- Research Committee, Kensington Eye Institute, Toronto. . (Steinbach)
- Canadian Journal of Ophthalmology (Contributing Editor) . (Steinbach)
- Snell Scientific Updates in Ophthalmology (Editor) (Steinbach)
- Editorial Board, Binocular Vision and Strabismus Quarterly (Steinbach)
- Computer Vision and Image Understanding, Tsotsos Area Editor,
- Image & Vision Computing Journal, Tsotsos Advisory Editor,

- Milton and Ethel Harris Research Initiative, (Research board member Tsotsos)York University,
- Monograph Series Editorial Board Computational Imaging and Vision, Publisher
- CVR members (Hoffman) members of the Animal Care Committee

7. Financial Accountability (see Excel Workbook)

8. Objectives for Upcoming Year

- NSERC CREATE proposal in progress International Research Training Grant between Canada and Germany (Crawford, Henriques, Harris, Womelsdorf, with other CVR members involved as "other users") $1,650,000 CAD (from the Canadian side)
- National Institutes of Health (Adler) An R01 peer-reviewed operating grant $500,000 for 5 years
- CIHR (De Souza) $80,000
- CIHR (Wilkinson might approach)
- CIHR (Wilson plans to approach for approximately $300,000)
- GOOGLE is being approached by Elder for a $30,000 grant
- GOOGLE is being approached by Wildes for a $50,000 Faculty research award
- MITACS is being approached by Wildes for a $15,000 Accelerate award
- Elder will approach the Ministry of Transportation, Ontario for a $30,000 grant
- Elder will approach the Ontario Centre of Excellence as part of their *Market Readiness Program for $100,000*
- NSERC Discovery Grant, $50k/yr, (Fallah)
- HFSP team grant, $350k/yr, (Fallah)
- NSERC, CHRP grant, $100k/yr, (Fallah)
- CIHR $50k/yr (Henriques)
- Steacie Fellowship application $250,000 (Henriques)
- CIHR $1,500,000 (Schneider)
- CIHR; Canadian Alzheimer's Association; Alzheimer's disease association (USA), Ontario Brain Institute – neurodegeneration team $110,000 (Sergio)
- American Institute of Bisexuality Grant, non-peer reviewed, seeking 90k over 2 years (Steeves)
- Social Sciences Research Council of Canada Grant, peer-reviewed, will seek 50k per annum over 5 years (Steeves)
- NSERC Research Tools and Instruments Grant, peer reviewed-- will seek funds for TMS theta burst stimulator ~75k (Steeves)
- We are organizing the first York CVR CREATE Training Program in Vision Science & Applications Bootcamp, to be held in July, 2012 (prime organizer Elder). This 3-day event will provide graduate student, undergraduate student and postdoctoral trainees with critical career-enabling skills in Vision Science and Applications. The bootcamp will include:
    - Methodology workshops taught by CVR faculty
    - Visual Clinical Evaluation
    - Career Workshops taught by invited experts
    - Grantsmanship

    - Media relations
    - Seminars on Applications of Vision Science, including representatives from the National Research Council, VPixx Technologies and Christie Digital
- The concussion care centre (of which Sergio is a member, and head of the research committee) will be ramping up its community engagement with local schools and youth athletic leagues, with baseline coordination testing and educational talks to league/school parent groups throughout the year.
- Ophthalmology Research Day, presentations by faculty. Nov 2012. Audience: Toronto ophthalmologists (Organized by Steinbach)
- Till is organizing a CIHR planning grant meeting for Sept 2012 in Toronto to discuss a future grant on the topic of: Multimodal complex data analyses of structural and functional magnetic resonance imaging in pediatric multiple sclerosis. Total number of invitees is approximately 20 (including 5 from outside Canada)
- CVR members Hoffman, Womelsdorf and Tsotsos will coordinate the Systems and Computational Neuroscience speaker series 2012-2013
- Wilkinson will participate in activities of Illuminating Engineering Society and its Toronto branch which brings together individuals in all areas of the lighting field (designers, architects, sales people, regulators, scientists)

visitors invited or anticipated

- Prof. James Dannemiller (Rice University) (Adler)
- Lak Chinta (postdoctoral fellow) (De Souza)
- Uta Wolfe (Colleague from Minnesota) (De Souza)
- Dr. Jocelyn Keillor, NRC (Elder)
- Jacek Dmochowski, a postdoc from The City College of New York (Schneider)
- Massimo Fillipli from Italy will be invited to the CIHR planning grant in Sept 2001 in addition to several other neuroimaging experts from Canada (e.g. Randy MacIntosh, & Thomas Paus from Univ. of Toronto, Louis Collins & Douglas Arnold from the Montreal Neurological Institute).
- Andrei Zaharescu (Wildes)
- Oliver Braddick (Oxford) and Janette Atkinson (UCL) will be giving the Ian Howard lecture in May, 2012
- Kristof Koch (CalTech) will be giving a Ian Howard Lecture in the fall term.
- Terry Sejnowski (Salk) will be giving a Ian Howard Lecture in the fall term.
- The following people will be presenting at the CVR conference arranged for June 2013:
    - Colin Blakemore (Oxford)
    - Anitha Pasupathy (U Washington)
    - Gunter Loffler (Glasgow Caledonia)
    - Vince Ferrera (Columbia)
    - Randolph Blake (Vanderbilt)
    - David Zee (Johns Hopkins)
    - Harold Bedell (U Houston)
    - Richard Krauzlis (NIH)
    - Mary Lou Jackson (Harvard/MEEI)
    - Gordon Legge (Minnesota)

9. Other relevant items the Director wishes to report

This year has been a very good year for the Centre of Vision Research at York. I was appointed director as of July 1, 2011 and inherited a centre that has been under excellent care since its inception in 1992. The contract of the previous director, Hugh Wilson, ended with the 2011 conference on “Plastic Vision” attended by over 200 people from several countries. We have made significant pushing forward the CVR’s mandate to support collaborative and interdisciplinary research. We have been successful in obtaining a CREATE grant (PI Wilson) involving 10 CVR members with substantial connections with industrial partners. Efforts are underway to obtain two more (PIs Jenkin and Crawford). We are also working to obtain CFI funding (PI Harris). We have continued our success with CIHR and NSERC funding awarded to many of our members and our research has been acknowledged by considerable media interest.

Appendix 1 – Additional Information about Progress in Fulfilling Mandate

List of all visitors hosted by CVR. July 1, 2011 - April 30, 2012:

Visitor	***Affiiliation***	***Country***	***Status***	***Duration of visit***	***Space provided?***
Pieter Medendorp	Radboud University Nijmegen,	Holland	Professor	7 July 2011	
Larry Maloney	NYU	USA	Professor	16 Aug 2011	
Katja Fielher	University of Marburg,	Germany	Professor	18 Aug 2011; 22-29 April 2012	Henriques lab
Rob Marino	Queens University,	Canada	Professor	2 Sept 2011	
Kevin MacKenzie	Bangor University,	UK	PDF	6 Sept 2011	
Fred Mast	Universitaet Bern,	Switzerland	Professor	Aug 2011-Jan 2012	Harrislab
Stephanie Westerhoff	Bernstein Centre, Georg-August University, Goettingen,	Germany	Professor	16 Sept 2011	
Jacek Dmochowski	City College, CUNY,	USA	Professor	23 Sept 2011	
Shuo Li	GE Healthcare and UWO,	Canada	Professor	18 Nov 2011	
Hong-Jin Sun	MacMaster,	Canada	Professor	9 Dec 2011	
Dave Williams	Southlake,	Canada	Professor	13 Dec 2011	
Mickey Goldberg	Columbia University,	USA	Professor	12 Dec 2011	
Steve Scott	Queens University	Canada	Professor	16 Dec 2011	
Andy Smith	Royal Holloway College,	UK	Professor	12-15 Dec 2011	Harrislab

	London,				
Ryan Stevenson	Vanderbilt University,	USA	Professor	2 March 2012	
George Chan	MacMaster,	Canada	Professor	9 March 2012	
David Shore	MacMaster,	Canada	Professor	16 March 2012	
Mark Daley	Western,	Canada	Professor	13 April 2012	
Karl Gegenfurtner	Giessen University,	Germany	Professor	18 April 2012	
Matthias Niemeier	U Toronto,	Canada	Professor	27 April 2012	
Frank Bremmer	Giessen University,	Germany	Professor	27-29 April 2012	
Joern Munzert	Giessen University,	Germany	Professor	27-29 April 2012	
Anna Schuboe	Giessen University,	Germany	Professor	27-29 April 2012	
Wolfgang Oertel	Giessen University,	Germany	Professor	27-29 April 2012	
Gunnar Blohn	Queens University,	Canada	Professor	27-29 April 2012	
Jody Culham	Western, Canada	Canada	Professor	27-29 April 2012	
Markus Belke	Giessen University,	Germany	Professor	27-29 April 2012	
Takahsi Mitsuda	Okoyama University,	Japan		Till Sept 2011	Crawford lab
Masahiro Kokubu	Osaka University of Health and Sport Sciences;	Japan			Crawford lab
Stephen Palmisano	University of Wollongong,	Australia	Professor	1 month	Allison lab
Ingo Frund	Technische Universitat Berlin,	Germany	PDF	*Nov 15-22 2012* *Apr 17-23 2012*	Elder Lab
Qi-Zhi Xu	Beihang	China	PDF	*Jun-Aug*	Elder Lab

	University, Beijing,			*2011*	
Vishal Kumar	IIT Kharagpur,	India	PDF	*May-Jul 2011*	Elder Lab
Ahmed Mostafa		Egypt	PhD student	Dec 2011-Nov 2013	Henriques Lab
‘t Hart	Marburg University	Germany	PDF	March 29-April 5	Henriques Lab
Nick Wade	Univ Dundee	UK	Professor		Ono Lab
K. Sakurai	Tohoku Daigaku Gakuin University	Japan	Professor		Ono Lab
Monica Giraldo	University of Barcelona	Spain	PhD Student	2 yrs	Schneiderlab
Moshe Eizenman	U Toronto	Canada	Professor		Steinbach lab
Kruijne, W	Vrije Universiteit	Holland	MSc student	Aug 2011	Tsotsos lab
Martin Vinck	University of Amsterdam	Holland	PhD student	2 weeks	Hoffman lab
Andrei Zaharescu	Aimetis Corporation	Canada	Visiting scientist	1 yr	Wildes lab

Appendix 2 – Individual Member Contributions

Active members (PUBLICATIONS) *(note: collaborative papers may appear multiple times)*	
Scott Adler	• Younger, A., Adler, S.A., & Vasta, R. (2012). Child Psychology: A Canadian Perspective. Mississauga, ON: Wiley & Sons.
Rob Allison	• Allison, R., & Howard, I. (2011). Vision in 3d environments. In L. Harris & M. Jenkin (Eds.). (Chap. Motion in Depth, pp. 163–186). Cambridge UK: Cambridge University Press. • Allison, R., Irving, E., Babu, R., Lillakas, L., Guthrie, S., & Wilcox, L. (2012). Visibility of color breakup phenomena in displays based on narrowband spectral sources. *IEEE Journal of Display Technology*, *8*(4), 186 –193. • Banks, M. S., Read, J. R., Allison, R. S., & Watt, S. J. (2012). Stereoscopy and the human visual system. *SMPTE Motion Imaging (also appears in SMPTE International Conference on Stereoscopic 3D for Media and Entertainment Conference proceedings)*, in press. • Sakano, Y., Allison, R., & Howard, I. (2012). Motion aftereffect in depth based on binocular information. *Journal of Vision*, *12*(1), Article 11: 1. doi:doi:10.1167/12. 1.11 • Tsirlin, I., Allison, R., & Wilcox, L. (2012). Perceptual asymmetry reveals neural substrates underlying stereoscopic transparency. *Vision Research*, *54*(1), 1–11. doi:http://dx.doi.org/10.1016/j.visres.2011.11.013 • Tsirlin, I., Allison, R., & Wilcox, L. (2012). The effect of crosstalk on depth magnitude in thin structures. *Journal of Electronic Imaging (an earlier version also published in Electronic Imaging 2012: Stereoscopic Displays and Applications)*, *21*, 011003. doi:http://dx.doi.org/10.1117/1.JEI.21.1.011003 • Howard, I., & Allison, R. (2011). Drawing with divergent perspective, ancient and modern. *Perception*, *40*(9), 1017–1033. • Palmisano, S., Allison, R., Kim, J., & Bonato, F. (2011). Visual jitter shakes conflict accounts of self-motion perception. *Seeing and Perceiving*, *24*, 173–200. • Tsirlin, I., Wilcox, L., & Allison, R. (2011). The effect of crosstalk on the perceived depth from disparity and monocular occlusions. *IEEE Transactions on Broadcasting*, *57*(2), 445–453. doi:10.1109/TBC.2011.2105630 • Tsirlin, I., Wilcox, L. M., & Allison, R. S. (2011). Disparity biasing in depth from monocular occlusions. *Vision Research*, *51*(14), 1699–1711. doi:16/j.visres.2 011.05.012
Doug	• Farshadmanesh, F., Byrne, P., Keith, G. P., Wang, H., Corneil, B. & Crawford, J.D. (2011). Cross-validated models of the relationships between

Crawford	neck muscle electromyography and three-dimensional head kinematics during gaze behaviour. Journal of Neurophysiology 107(2):573-90. • DeSouza, J. F. X., Keith, G. P., Yan, X., Blohm, G., Wang, H. & Crawford, J. D. (2011) Intrinsic Reference Frames of Superior Colliculus Visuomotor Receptive Receptive Fields During Head unrestrained Gaze Shifts. Journal of Neuroscience 14;31(50):18313-26 • Dessing, J., Crawford, J. D. & Medendorp, W. P. (2011). Spatial updating across saccades during manual interception. Journal of Vision 11(10): 4, 1-18 • Niechwiej, E., Goltz, H. C., Chandrakumar, M., Hirji, Z., Crawford, J. D., Wong, A. (2011) Effects of Anisometropic Amblyopia on Visuomotor Behavior, part 2: Visually Guided Reaching. Investigative Ophthalmology & Visual Science 52(2): 795-803 • Crawford, J. D., Henriques, D. Y. P. & Medendorp, W. P. (2011). Three-Dimensional Transformations for Goal Directed Action. Annual Review of Neuroscience, 34:309-31.
Joseph DeSouza	• DeSouza, J.F.X. Keith, G.P., Yan, X., Blohm, G., Wang, H., & Crawford, J.D. (2011) Intrinsic reference frames of superior colliculus visuomotor receptive fields during head-unrestrained gaze shifts. Journal of Neuroscience, 50, 18313-26. • DeSouza, J.F.X., Ovaysikia, S. & Pynn, L.K. (In press) Correlating behavioural response to fMRI signals from human prefrontal cortex: Using an example of selective attention and response suppression. Accepted by Journal of Visualized Experiments (ID:3237).
James Elder	• Fazl-Esri, E., Elder, J.H. & Tsotsos, J.K. (2012). Hierarchical classifiers for robust topological robot localization. Accepted for publication in the Journal of Intelligent Robotic Systems, DOI: 10.1007/s10846-012-9671-z. • Dornaika, F. & Elder, J.H. (2012) Image registration for foveated panoramic sensing. ACM Transactions on Multimedia Computing, Communications and Applications, ***In Press.*** • Morgenstern, Y. & Elder, J.H. (2012). Local visual energy mechanisms revealed by detection of global patterns. Journal of Neuroscience, vol. 32, no. 11, 3679-3696. • Li, P., Fu, Y., Mohammed, U. & Elder, J.H. & Prince, S.J.D. (2012). Probabilistic models for inference about identity. IEEE Transactions on Pattern Analysis and Machine Intelligence, vol. 34, no 1. 144-157. • Or, C.F. & Elder, J.H. (2011). Oriented texture detection: ideal observer modelling and classification image analysis, Journal of Vision, vol. 11 no. 8 part. 16, 1-19. • Corral-Soto, E.R., Tal, R., Wang, L., Persad, R., Chao, L. Solomon, C., Hou, Y., Sohn G., Elder, J.H. (2012) 3DTown: The Automatic Urban Awareness Project, Proc. Canadian Conference on Computer and Robot Vision.

Mazyar Fallah	• Perry CJ, Fallah M (2012) Color improves speed of processing but not perception in a motion illusion. *Front. Psychology* 3:92. doi: 10.3389/fpsyg.2012.00092 • Fallah M, Reynolds JH (2012) Contrast dependence of smooth pursuit eye movements following a saccade to superimposed targets. *PLoS ONE* (in press).
Laurence Harris	• Jenkin MR, Dyde RT, Jenkin HL, Zacher JE, Harris LR. (2011) "Perceptual upright: the relative effectiveness of dynamic and static images under different gravity states" Seeing and Perceiving. 24: 53-64 • Harris LR, Jenkin M, Dyde RT, Jenkin H (2011) "Enhancing visual cues to orientation: suggestions for space travellers and the elderly" Progress in Brain Research 191: 133-142 • Morgenstern Y, Murray R, Harris LR (2011)"The light from above prior is weak" Proc Natl. Acad. Sci. USA 108: (30) 12551-3 • Pritchett LM, Harris LR (2011) "Perceived touch location is affected by both eye and head position" Experimental Brain Research. 213: 229-234 • Barnett-Cowan M, Harris LR (2011) "Temporal processing of active and passive head movement" Experimental Brain Research 214: 27-35 DOI 10.1007/s00221-011-2802-0 • Dearing RR, Harris LR (2011) "The contribution of different parts of the visual field to the perception of upright" Vision Research 51: 2207-2215 DOI 10.1016/j.visres.2011.08.018 • Jaekl P, Soto-Faraco S, Harris LR (2012) "Perceived size change induced by audio-visual temporal delays" Experimental Brain Research 216: 457-462 • HooverA, Harris LR, Steeves JKE (2012) "Sensory compensation in sound localization in people with one eye" Experimental Brain Research 216: 565-574 • Harris LR, Jenkin MR, Dyde RT (in press) "The perception of upright under lunar gravity" J. Gravitational Physiology • Harris, L. and Jenkin, M. (Eds.) Vision in 3D Environments. Cambridge University Press, 2011.
Denise Henriques	• Jones, S.A.H., Bryne, P.A., Fiehler, K., Henriques, D.Y.P. Reach endpoint errors do not vary with movement path of the proprioceptive target, J Neurophysiology (in press) • Thompson, A.A., Glover, C., Henriques, D.Y.P. Allocentrically implied target locations are updated in an eye-centred reference frame. Neuroscience Letters, 514, 214-218, 2012. • Jones, S.A.H., Fiehler, K., Henriques, D.Y.P. Proprioceptive acuity varies with task type, target-hand, and target position, but not starting position of

	the target-hand. Neuropsychologia (in press). • Reuschel, J., Rosler, F., Henriques, D.Y., Fiehler, K. Spatial updating depends on gaze direction even after loss of vision, J Neuroscience, 32, 2422-2429, 2012. • Cressman, E.K., Henriques, D.Y.P. (in press) Visuomotor adaptation and proprioceptive recalibration. Journal of Motor Behavior, Invited Review. • Salomonczyk, D., Henriques, D. Y., Cressman, E.K. Proprioceptive recalibration in the right and left hands following abrupt visuomotor adaptation. Exp Brain Res, 217, 187-196, 2011. • Salomonczyk, D., Cressman, E.K., Henriques, D.Y.P. Proprioceptive recalibration following prolonged training and increasing distortions in visuomotor adaptation, Neuropsychologia, 49, 3053-3062, 2011. • Crawford, J.D., Henriques, D.Y.P., Medendorp, W.P. Three-dimensional transformations for goal-directed action (invited review). Annual Reviews of Neuroscience, 34: 309-331, 2011.
Kari Hoffman	• Bartlett AM*, Ovaysikia S, Logothetis NK and Hoffman KL (2011) Saccades during object viewing modulate oscillatory phase in the superior temporal sulcus. Journal of Neuroscience **31**(50):18423-18432. doi:10.1523/JNEUROSCI.4102-11.2011 • Chau VL*, Murphy EL, Rosenbaum RS, Ryan JD and **Hoffman KL** (2011) A flicker change detection task reveals object-in-scene memory across species. **Frontiers in Behavioral Neuroscience. 5**:58. doi: 10.3389/fnbeh.2011.00058
Ian Howard	• Howard. I. P. Perceiving in Depth Volume 1, Basic Mechanisms. Oxford University Press. • Howard, I. P. and Rogers, B. J., Perceiving in Depth Volume 2, Stereoscopic Vision. Oxford University Press. • Howard, I. P. Perceiving in Depth Volume 3, Other Depth Perception Mechanisms. Oxford University Press. • Howard, I. P. and Allison, R. S. Drawing in divergent perspective: ancient and modern. Perception, 2011, 40, 1017-1033. • Sakano, Y., Allison, R. S., and Howard I. P. Motion aftereffect in depth based on binocular information. Journal of Vision, 2012, 12(1).
Richard Hornsey	
Michael Jenkin	• Harris, L., Jenkin, M., Jenkin, H. and Zacher, J. The perception of upright under Lunar gravity Journal of Gravitational Physiology, in press. • Jenkin, M., Dyde, R., Jenkin, H., Zacher, J. and Harris, L. Perceptual upright: the relative effectiveness of dynamic and static images under different gravity states. Seeing and Perceiving 24: 53-64, 2011.

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Richard Murray	• Morgenstern Y, Murray R, Harris LR (2011)"The light from above prior is weak" Proc Natl. Acad. Sci. USA 108: (30) 12551-3
Hiroshi Ono	• Wade, N.J., Ono, H., Mapp. A.P. & Lillakas, L. (2011). The singular vision of William Charles Wells (1757-1817). Journal of the History of the Neurosciences, 20, 1–15. • Tam, W. J., Spernaza, F., Yano, S., Shimono, J., & Ono, H. (2011) Stereoscopic 3D-TV: Visual comfort. IEEE Transactions on Broadcasting, Volume: PP, Issue: 99, 335–346. • Ono, H., & Wade, N.J. (2012). Two historical strands in studying visual direction. Japanese Psychological Research, 54, 71-88. • Ono, H., & Wade, N.J. (2012). Early studies of stereoscopic vision. Japanese Psychological Research. 54, 54-70. • Chung-Fat-Yim, A., & Ono, H. (in press). Mapping the "Forbidden Zone" Near and Away from the Fixation Point. Perception, • Matsushita, S., Sakurai, K., Ono, H., Yano, S., & Susami K. (in press). 3-D display system using motion parallax. The Japanese Journal of Psychonomic Science
David Regan	
Josée Rivest	
Keith Schneider	• Schneider KA. 2011. Attention alters decision criteria but not appearance: A reanalysis of Anton-Erxleben, Abrams & Carrasco (2010) [Invited comment]. Journal of Vision 11(13): 7, 1–8. • Kastner S, Saalmann Y, Schneider KA. 2012. Thalamic control of visual attention. In G. Mangun (ed.), Neuroscience of Attention: Attentional Control and Selection. Oxford.
Lauren Sergio	• Salek Y, Anderson N, Sergio LE (2011) Mild cognitive impairment is associated with impaired visual-motor planning when visual stimuli and actions are incongruent. Eur. Neurol. 66(5):283-293.
Minas Spetsakis	
Jennifer Steeves	• Hoover, A.E.N., Harris, L.R. & Steeves, J.K.E. (2012) Sensory compensation in sound localization in people with one eye. *Experimental Brain Research*, 216, (4), 565-574. • Moro, S.S. & Steeves, J.K.E (2012). No Colavita effect: equal auditory and visual processing in people with one eye. *Experimental Brain Research*, 216(3), 367-373. • Kelly, K., Gallie, B.L. & Steeves, J.K.E. (2012) Impaired face processing in early monocular deprivation from enucleation. *Optometry and Vision Science, 89*(2), 137-147.

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Martin Steinbach	• Tarita-Nistor, L., Brent, M. H., Steinbach, M. J., Gonzalez, E. G. Fixation patterns in maculopathy: from binocular to monocular viewing. (2012) Optometry and Vision Science, 89 (3), 277-287. • Gonzalez, E. G., Tarita-Nistor, L., Mandelcorn, E., Mandelcorn, M., Steinbach, M. J. Fixation control before and after treatment for neo-vascular age-related macular degeneration. (2011) Investigative Ophthamology & Visual Science 52, 4208-4213. • Tarita-Nistor, L., Brent, M. H., Steinbach, M. J., Gonzalez, E. G. (2011) Fixation stability during binocular viewing in patients with age-related macular degeneration. Investigative Ophthamology & Visual Science 52, 1887-1893. • Steinbach, M. J. (2012). Cyclops: Update on progress in vision science. Invited column for Canadian Journal of Ophthalmology, 47,115. • Steinbach, M. J. (2012). Cyclops: Update on progress in vision science. Invited column for Canadian Journal of Ophthalmology, 47, 3. • Steinbach, M. J. (2011). Cyclops: Update on progress in vision science. Invited column for Canadian Journal of Ophthalmology, 46, 469. • Steinbach, M. J. (2011). Cyclops: Update on progress in vision science. Invited column for Canadian Journal of Ophthalmology, 46, 379. • Steinbach, M. J. (2011). Cyclops: Update on progress in vision science. Invited column for Canadian Journal of Ophthalmology, 46, 303. • Steinbach, M. J. (2011). Cyclops: Update on progress in vision science. Invited column for Canadian Journal of Ophthalmology, 46, 225.
Wolfgang Stuerzlinger	• S. Arif, B. Iltisberger, W. Stuerzlinger, Extending Mobile User Ambient Awareness for Nomadic Text Entry, OzCHI 2011, 21-30, Nov. 2011. • J. McClymont, D. Shuralyov, W. Stuerzlinger, Comparison of 3D Navigation Interfaces, IEEE VECIMS 2011, ISBN 978-161284899-1, 7-12, Sept. 2011. • K. Patel, W. Stuerzlinger, Simulation of a Virtual Reality Tracking System, IEEE VECIMS 2011, ISBN 978-161284899-1, 78-83, Sept. 2011. • Y. J. Zhao, D. Shuralyov, W. Stuerzlinger, Comparison of Multiple 3D Rotation Methods, IEEE VECIMS 2011, ISBN 978-161284899-1, 13-17, Sept. 2011. • D. Dadgari, W. Stuerzlinger, New Techniques for Merging Text Versions, HCI International, Lecture Notes in Computer Science, vol. 6762, ISSN 0302-9743, ISBN 978-364221604-6, 331-340, July 2011. • Teather, W. Stuerzlinger, Investigating One-Eyed and Stereo Cursors for 3D Pointing Tasks, Poster at IEEE 3D UI Symposium 2012, 167-168, March

	2012. • L. Zaman, D. Shuralyov, R. Teather, W. Stuerzlinger, Evaluation of a 3D UI with Different Input Technologies, Poster at IEEE 3D UI Symposium 2012, 173-174, March 2012.
Christine Till	• Bala B, Banwell B, Till C. Cognitive and behavioral outcomes in individuals with a history of acute disseminated encephalomyelitis (ADEM) *Developmental Neuropsychology, in press.* • Till C, *Udler E,* Ghassemi R, Narayanan R, Arnold DL, Banwell B. (2012) Factors associated with emotional and behavioral outcomes in adolescents with multiple sclerosis. Multiple Sclerosis Journal, *in press*. • Fuentes A, Collins DL, Garcia D, Sled JG, Narayanan S, Banwell BL, Till C. (2012) Relationship between memory outcomes and normalized regional brain volumes in pediatric-onset multiple sclerosis patients. Journal of International Neuropsychological Society, 18 (3): 471-480. • Till C, Deotto A, Tipu V, Sled JG, Bethune A, Narayanan S, Arnold DL, Banwell B. (2011) White matter integrity and math performance in pediatric multiple sclerosis: a diffusion tensor imaging study. NeuroReport, 22 (18): 1005-1009. • Bethune A, Tipu V, Sled JG, Narayanan S, Arnold DL, Mabbott D, Rockel C, Ghassemi R, Till C, Banwell B. (2011) Diffusion tensor imaging and processing speed in children with multiple sclerosis. Journal of the Neurological Sciences, 309, 68-74. • Till C, Broche-Aubert B, Ghassemi R, Arnold DL, Narayanan S, Collins L, Kerbat A, Desrocher, M, Sled, J, Banwell B. (2011) MRI correlates of cognitive impairment in children and adolescents with multiple sclerosis. Neuropsychology, 25(3), 319-332.
John Tsotsos	• Fazl-Ersi, E., Tsotsos, J.K., Histogram of Oriented Uniform Patterns for Robust Place Recognition and Categorization, The International Journal of Robotics Research (IJRR) Special Issue on Robot Vision, 0278364911434936, first published on January 25, 2012 • Andreopoulos A., Tsotsos J.K., On Sensor Bias in Experimental Methods for Comparing Interest Point, Saliency and Recognition Algorithms, IEEE Transactions on Pattern Analysis and Machine Intelligence, January 2012 (vol. 34 no. 1) pp. 110-126 • Bruce ND, Tsotsos JK (2011) Visual representation determines search difficulty: explaining visual search asymmetries. Front. Comput. Neurosci. 5:33. doi: 10.3389/fncom.2011.00033, Received: 22 February 2011; Accepted: 24 June 2011; Published online: 13 July 2011. • Tsotsos, J.K., Rothenstein, A.L., Simine, E., Zaharescu, A., Visual Attention: Computational Problems, Strategies, and Mechanism, in Neuroscience of Attention, ed. G.R. Mangun, Oxford University Press, 2012, p. 81-99. • Tsotsos, J.K., Rothenstein, A.L., The Role of Attention in Shaping Visual Perceptual Processes, in Perception-Action Cycle Models, Architectures, and Hardware, ed. by V. Cutsuridis, A. Hussain and J. G. Taylor, Springer Series in Cognitive and Neural Systems, Volume 1, 2011, DOI: 10.1007/978-1-4419-1452-1 • Fazl-Ersi, E., Elder, J.H., Tsotsos, J.K., Hierarchical Classifiers for Robust

	Topological Localization, Journal of Intelligent and Robotic Systems (in press). • Fazl-Ersi, E., Tsotsos, J.K., A Performance Evaluation of Robot Localization Methods in Outdoor Terrains, Chapter 3.7 in C.H. Chen (Ed.), Emerging Topics in Computer Vision and its Applications, World Scientific Publishing • Rodriguez-Sanchez, A., Tsotsos, JK., The roles of endstopped and curvature tuned computations in a hierarchical representation of 2D shape, Developing and Applying Biologically- Inspired Vision Systems: Interdisciplinary Concepts, edited by M. Pomplun and J. Suzuki, IGI Global • Bruce, N.D.B., Tsotsos, J.K. Attention in Stereo Vision: Implications for Computational Models of Attention. In Pomplun, M. & Suzuki, J. Developing and Applying Biologically-Inspired Vision Systems: Interdisciplinary Concepts. IGI Global.
Laurie Wilcox	• Tsirlin I, Allison RS, Wilcox LM (2012) Perceptual asymmetry reveals neural substrates underlying stereoscopic transparency. *Vision Research*, 54, 1-11. • Allison RS, Irving EL, Babu R, Lillakas L, Gutherie S and Wilcox LM (in press) Visibility of Color Breakup Phenomena in Displays based on Narrowband Spectral Sources. *IEEE/OSA Journal of Display Technology*. • Tsirlin I, Wilcox LM, and Allison RS (in press). The effect of crosstalk on depth magnitude in thin structures. Journal of Electronic Imaging. • Tsirlin I, Wilcox LM, and Allison, RS (2011) Disparity biasing in depth from monocular occlusions, *Vision Research*, 51, 1699-1711. • Tsirlin I, Wilcox LM, and Allison RS (2011) The effect of crosstalk on perceived depth from disparity and monocular occlusions, *IEEE Transactions on Broadcasting*, 99, pp. 1-9 • Tsirlin I, Allison RS, and Wilcox LM (2012). Crosstalk reduces the amount of depth seen in 3D images of natural scenes. Proceedings of the Stereoscopic Displays and Applications XXIII Conference, San Francisco. • Laldin S, Wilcox LM, Allison RS (2012) Motion in depth constancy in stereoscopic displays. Proceedings of the Stereoscopic Displays and Applications XXIII Conference, San Francisco • Wilcox LM (2011) Summary of Depth rendition of three-dimensional display by Westheimer G., *Journal of the Optical Society: Spotlight on Optics*, 28, 6, http://www.opticsinfobase.org/spotlight/summary.cfm?uri=josaa-28-6-1185
Richard Wildes	• K. Derpanis and R. Wildes. Spacetime texture representation and recognition based on a spatiotemporal orientation analysis. IEEE Transactions on Pattern Analysis and Machine Intelligence (in press) • M. Sizintsev and R. Wildes. Spatiotemporal stereo and scene flow via stequel matching. IEEE Transactions on Pattern Analysis and Machine Intelligence. (in press) • K. Derpanis and R. Wildes. Classification of traffic video based on a

	spatiotemporal orientation analysis. In Proceedings of the IEEE Workshop on Applications of Computer Vision (WACV), 2011. • M. Sizintsev and R. Wildes. Spatiotemporal oriented energies for spacetime stereo. In Proceedings of the IEEE International Conference on Computer Vision (ICCV), 2011.
Frances Wilkinson	• Wilkinson, F. (2011) Perceptual illusions provide clues to excitatory–inhibitory balance in migraine neocortex. *Cephalalgia, August 2011; vol. 31, 11: pp. 1155-1157* Published online before print July 4, 2011, doi: 10.1177/0333102411411205 (Invited Paper) • Or, C., Thabet, M., Wilkinson, F., Wilson, H.R. (2011) Discrimination and identification of radial frequency motion trajectories. *Journal of Vision 11(8): 7; doi:10.1167/11.8.7* • Haigh, S. M., Karanovic, O., Wilkinson, F., & Wilkins, A. J. (2012) Aversion to patterns and cortical hyperexcitability in migraine. *Cephalalgia, 32(3): 236-240,* DOI: 10.1177/0333102411433301 *Published electronically January 10, 2012.*
Hugh Wilson	• Chrostowski, M., Yang, L., Wilson, H. R., Bruce, I. C. & Becker, S. (2011) Can homeostatic plasticity in deafferented primary auditory cortex lead to traveling waves of excitation? *J. Comput. Neurosci.* 30, 279-299. • Blake, R. & Wilson, H. R. (2011) Binocular Vision. *Vision Res.* 51, 754-770. • Lee, Y., Grady, C. L., Habak, C., Wilson, H. R. & Moscovich, M. (2011) Face processing changes in normal aging revealed by fMRI-adaptation. *J. Cog. Neurosci.* 23:11, 3433-3447. • Or, C-F., Thabet, M., Wilkinson, F. & Wilson, H. R. (2011) Discrimination and identification of periodic motion trajectories. *Journal of Vision*. 11(8):7, 1-11. • Daar, M. & Wilson, H. R. (2012) The face viewpoint aftereffect: Adapting to full faces, head outlines, and features. *Vision Res.* 53, 54-59.
Thilo Womelsdorf	• Womelsdorf, T., Lima, B., Vinck, M., Neuenschwander, S., Oostenveld, R., Singer, W. & Fries, P.(2012) Orientation selectivity and noise correlation in awake monkey V1 are modulated by the gamma cycle. *PNAS, Proceedings National Academy of Science, USA.* 13; 109(11): 4302–4307. • Hutchison, R.M. Womelsdorf, T., Gati, S.S., Menon, R.S. & Everling, S. (2012) Resting-state networks show dynamic functional connectivity in awake humans and anesthetized macaques.Human Brain Mapping doi: 10.1002/hbm.22058. • Kaping, D., Vinck, M., Hutchison, R.M., Everling, S. & Womelsdorf, T. (2011) Specific contributions of ventromedial, anterior cingulate and lateral prefrontal cortex for attentional selection and stimulus valuation. *PLoS Biology. 9(12): e1001224. doi:10.1371/journal.pbio.1001224* • Vinck, M., Battaglia, F., Womelsdorf, T., & Pennartz, C.M.A. (2011) Improved measures of phase-coupling between spikes and the local field potential. *Journal of Computational Neuroscience. doi 10.1007/s10827-011-0374-4* • Womelsdorf, T. (2011) Deciphering the attentional search engine in the

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Active members (STUDENTS and HQP)	
Scott Adler	Christina Fuda MA Psychology Audrey Wong Kee You MA Psychology Leah Direnfeld Undergraduate in Psychology Sepideh Saedi Undergraduate in Psychology Rachita Saini Undergraduate in Psychology Ruth Shach Undergraduate in Psychology
Rob Allison	Jianhui Chen: MSc in Computer Engineering Karim Benzeroual : Post-Doctoral Fellow Arthur Lugtigheid: Post-Doctoral Fellow Pearl Guterman: Ph.D. Student in Psychology Margarita Vinnikov: Ph.D. Student in Computer Science Natalia Bogdan: PhD. Student in Computer Science Carly Hylton: Undergraduate in Psychology Sidrah Laldin: MA Student in Independent Studies Ramy Kirollos: Undergraduate in Psychology Bahar Hashemi, Undergraduate
Doug Crawford	Pankhuri Malik; MSc; Bio 09/11- Present David Cappadocia; PhD; Kin 06/11- Present Mehdi Daemi; PhD; Biol; 09/10- Present Leiko Tanaka; MA; Psych 09/10- Present Morteza Sadeh; MSc; Kin 09/10- Present Noura Al-Omawi; PhD; Kin 09/10- Present Amirsaman Sajad; PhD; Bio 09/11- Present Ying Chen; PhD; Kin 04/10- Present Al Tharani; MSc; Psych 09/08-09/11- Present Farshad Farshadmanesh; PhD Bio 05/05 – 12/11 Robert Marino; Post Doc 04/12- Present Benjamin Dunkley; Post Doc 11/11-Present Joost Dessing; Post Doc 09/08- Present Suryadeep Dash; Post Doc 09/09-Present Hardi Dave; Work Study Student 09/10-04/11 Geeta Kumar; Work Study Student 09/11-Present Khashayar Gharavi; Independent Study Psychology 09/11-Present
Joseph DeSouza	Ovaysikia, Shima: PhD Psychology. Pynn, Laura: PhD Psychology. DiNoto, Paula: PhD Psychology. DiNoto, Paula: M.A. Psychology. Wang, Sheng-hua: M.A. Psych (in collaboration with **Dr. Pavla, Finland)**

	Arsenyan, Diana: M.Sc. Biology. Leung, Samantha: M.Sc. Biology. (co supervisor) Tharani, Alzahir: M.Sc. Biology. (co supervisor with **teachers college, U of T)** Ledger, Charles Undergraduate Psychology Levkov, Gaby Undergraduate Psychology Verdichevski, Marina Undergraduate Psychology Munro, Scott Undergraduate Psychology Greenberg, Anastasia Undergraduate Psychology Bar, Rachel Undergraduate Psychology Soiezi, Matin Undergraduate Psychology Leger, Charles Undergraduate Psychology
James Elder	Ying Li M.Sc. CSE Alex Yakubovich M.A. Math Ron Tal M. Sc. CSE Paria Mehrani Ph.D. CSE Eduardo Corral Soto Ph.D. CSE Charles Mander M.A. Psych Vida Movahedi Ph.D. CSE Qi-Zhi Xu CSE *International Visiting Graduate Student from Beihang* University, Beijing, China Jan Drewes Post doctoral fellow Galina Goren PSYC Undergraduate Psych Student Herman Singh NSERC Undergraduate Summer Student Vishal Kumar *Electronics and Electrical Communication Engineering student International Visiting Undergraduate Student from IIT Kharagpur, India*
Mazyar Fallah	Aida Owlia (MSc. Kin) Carolyn Perry (PhD Kin) Patricia Sayegh (PhD Kin) Massie Rahim (undergrad) Rachel Ramchandani (undergrad) Sarah Zohar (undergrad) Scott Munro (undergrad) Abdullah Tahir (undergrad) Jonathan Aldridge (undergrad)
Laurence Harris	Adria Hoover, PhD; Psych Lisa Pritchett, PhD, Psych Amy Salminen, MA, Psych Charles Mander, PhD, Psych Blake Martin, PhD, Kin (co-supervised with Henriques) Sarah D'Amour, Undergraduate in psychology Evguenia Noukhovitch Undergraduate in psychology

	Andrei Szigiato Undergraduate in kinesiology Anousha Z Usman Undergraduate in psychology
Denise Henriques	Holly Clayton (Psych MSc candidate, 2010-present), Blake Martin (KAHS PhD candidate, 2007-present; co-supervised with Harris) Danielle Salomoncyzk (Psych PhD candidate, 2009-present) Ahmed Mostafa (visiting PhD candidate from Egypt, Dec 2011-present). Stephanie Jones (Psych PhD candidate, 2007- Nov 2011) Simona Monaco (Postdoctoral fellow, 2010-present) Pat Byrne (Postdoctoral fellow, Nov 2010- Sept 2011; Jan 2012) Edward Vinnikov (undergrad research project Sept 2011-April 2012) Steven Jesin (NSERC USRA, May-Aug 2011) Immo Schuetz (co-supervised project of PhD student of my German collaborator, March 2011-present)
Kari Hoffman	Josh Tallman (Psych undergrad student) Sonya Chand (Psych undergrad student) Rachel Jadd (Psych undergrad student) Leora Branfield Day (Psych undergrad student) Adrian Bartlett (Psych grad student) Tim Leonard(Psych grad student) Michael Lubinsky (Psych grad student) Benjamin Cassidy (Psych grad student) Rodrigo Montefusco Siegmund (PDF)
Ian Howard	Yoshitaka Fujii, Post Doctoral Fellow Ramy Kirollos, Undergraduate Independent study
Richard Hornsey	Edward Shen, PhD CSE Wei Gao, PhD CSE Christopher PhD CSE Elliott Tsai PhD CSE Cyrus Minwalla PhD CSE Kyle Watters MASc CSE Stanley Lio, undergraduate student Philip Rolle – undergraduate student
Michael Jenkin	Robert Codd-Downey - undergraduate assistant Andrew Speers - MSc CSE Candidate Parisa Mojiry - MSc CSE Candidate Hui Wang - PhD CSE Candidate Jing Yang - PhD CSE Candidate Bart Verzijlenberg - MSc in 2011. Now at MDA
Richard Murray	Minjung Kim M.A. Psych Yaniv Morgenstern Ph.D. Psych
Hiroshi Ono	Soyogu Matsushita (post-doc) Ashley Chung-Fat-Yim (Psych MA grad student)

David Regan	
Josée Rivest	Joo Ann Lee (Undergrad, Psych, Glendon) Emily Parkinson (Undergrad, Psych, Glendon)
Keith Schneider	Kevin DeSimone PhD Biology Larissa McKetton PhD Biology Joseph Viviano, visiting Ph.D. student Monica Giraldo from Spain Terra Kowalyk Undergrad Biol Student Andrew Menlowitz Undergrad Biol Student Yagnesh Parekh Undergrad Biol Student Saadia Malik Undergrad Biol Student Gajamugan Rajavarothayan Undergrad Biol Student Kashif Khan Undergrad Biol Student Ahmad-Al-Awadi Undergrad Biol Student Prijanjali Mithal Undergrad Biol Student Jasminder Singh Undergrad Biol Student Faisal Kamal Undergrad Biol Student Anahit Grigorian Undergrad Biol Student Harry Dang Undergrad Biol Student Akshay Lobo Undergrad Biol Student
Lauren Sergio	Joshua Granek PhD KAHS Patricia Sayegh PhD KAHS Kara Hawkins PhD KAHS Jeffrey Brown. MA KAHS Zaid Faiz Undergrad student in KAHS Melissa Ruinsky Undergrad student in KAHS Sinhu Pillai Undergrad student in KAHS Cristina Rubino. Undergrad student in KAHS
Minas Spetsakis	
Jennifer Steeves	Rachel Ganaden, Dept of Psychology, MA Stefania Moro, Dept of Psychology, MA Caitlin Mullen, Dept of Psychology, PhD Krista Kelly, Dept of Psychology, PhD Adam Ghemraoui. Psych Undergrad Alex Giffard. Psych Undergrad Lily Solomon-Harris Psych Undergrad
Martin Steinbach	Dr. L. Tarita-Nistor (PDF) Naomi Greenwald. (Psych Undergrad) Stefani Shnier (Psych Undergrad) Tara Pahlevan (Psych Undergrad)
Wolfgang Stuerzlinger	Rob Teather (CSE PhD student) Arindam Das (CSE PhD student) Ahmed S. Arif (CSE PhD student) Loutfouz Zaman (CSE PhD student)

	Navid Mohaghegh (CSE PhD student) Hoda Dehmeshki (CSE PhD student) Andriy Pavlovych (CSE PhD student) Bhavna Agarwal (CSE MSc student) Doug Scheurich (CSE MSc student) Dmitri Shuralyov(CSE MSc student)
Christine Till	Undergrad student (Psych) MA Student (Psych) PhD Student (Psych) PhD Student (Psych) PhD Student (Psych) PhD Student (Psych) PhD Student (Psych)
John Tsotsos	Bruce, N. (PDF), Feb. 1, 2010 - Jan 31, 2012 (now at Epson Canada) Andreopoulos, A., (PDF) Jan 1, 2011 - Dec, 31, 2011 (now at IBM San Jose) Rothenstein, A., (PDF) Feb. 7, 2011 - present Simine, E., (RA) Jan. 2007 - present Rotenstein, A., (RA) 2010 - present Wang, B. (RA)April 2012 - present Leung, E. (PhD CSE), Jan, 2005 - present. Shi, X., (PhD CSE), Sept. 2006 - present. Fazl, E., (PhD CSE), Jan. 2007 - present Wloka, C. (MSc CSE) May 2010 - present Kruijne, W.(MSc **CSE and** Vrije Universiteit) Aug, 2011
Laurie Wilcox	Inna Tsirlin – PhD 4 Psych Debi Stransky – PhD 4 Psych Andrea Carey – MA2 Psych Lesley Deas – PhD1 Psych Arthur Lugtigheid – Post Doctoral Fellow Karim Benzeroual – Post Doctoral Fellow Tara Pahlevan – Undergraduate
Richard Wildes	Kevin Cannons CSE graduate student Mikhail Sizintsev CSE graduate student Sepehr Vosoughi CSE graduate student Hao Zhong CSE graduate student
Frances Wilkinson	Michel Thabet completed MA (psych) August 2011 Laura Adams PhD student (psych co-supervised with Suzanne MacDonald) Diana Gorbet (co-supervised with Wilson)
Hugh Wilson	Michael Vesker, M.Sc. (Biology) Marwan Daar, Ph.D.(Biology) Xiaoqing Gao, Postdoc. Diana Gorbet (co-supervised with Wilkinson)
Thilo Womelsdorf	

CVR members (GRANTS)

(note: collaborative grants may appear multiple times)

Scott Adler	• National Institute of Mental Health R03 MH085594-01A1 (unknown amount)
Rob Allison	• 2010-2012 Australian Research Council $200,000 (PI S Palmisano) Viewpoint changes during locomotion: Their role in self-motion perception and motion sickness • 2010-2015 NSERC $170,000 *for 5 yrs* Discovery Grant ($34k pa) Stereoscopic surface perception in real and virtual environments • 2010-2012 OMDC $437,000 for 2 yrs (PI N. Tenhaff) Entertainment and Creative Cluster Partnerships Fund, The 3D Film Innovation Consortium (3D FLIC) • 2010-2012 OCE $287,340 *(143,670)* Collaborative Research Project: Human Factors in 3D Stereoscopic Cinematography (also $30k cash contribution from industry) • 2010-2015 ORF/RE $3,844,824 (PI Tsotsos) Ontario Research Fund/Research Excellence, Centre for Innovation in Information Visualization and Data Driven Design (CIV/DDD) • 2010-2012 Canadian Space Agency $200,000 Visual perception of smooth and perturbed self-motion in microgravity • 2011-2013 OMDC $249,745 A. Hogue Entertainment and Creative Cluster Partnerships Fund, iGO3D (Interactive Games Ontario 3D) • 2010-2013 NSERC $286,836 L. Wilcox New Media Initiative: Motion in Depth
Doug Crawford	• 2011-2016 NSERC Discovery $110,000/yr "Cortical Mechanisms for Trans-Saccadic Integration and Memory in the Human" • 2011 NSERC RTI $96,305 "MRI-Guided Navigation System for TMS"(Co-Applicants: M. Fallah, D. Henriques, L. Sergio, M. Niemeier) • 2009-2014 CIHR $150,170/yr "Mechanisms for Eye-hand Coordination in the Human" • 2009-2015 NSERC $300,000/yr CREATE Program in Computational Approaches to Sensorimotor Transformations for the Control of Action (Goodale PI). • 2007-2012 CIHR $209,440/yr "Spatial Transformations of 3-D gaze"
Joseph DeSouza	• NSERC Discovery program "Eye position signals used for coordinate transformations in humans using fMRI" $112,435/ 5yrs • Canadian Institute of Health Research "Spatial transformations of 3-D gaze" (co-PI with Doug Crawford) $1,047,200 / 5yrs

	• Canadian Foundation for Innovation (CFI) "Multi-technique approach for examining neural correlates of eye position, response suppression and attention" $354,410 • 2012-13 NSERC Discovery program "Attentional signals during visuomotor tasks" $25,000
James Elder	• Co-Investigator, Natural Sciences and Engineering Research Council (NSERC) Collaborative Research and Training Experience, Vision Science and Applications ($1,650,000 over 6 years) • Principal Investigator, NSERC Engage Grant, An Expert System for the Home Improvement Market Using Computer Vision: Feasibility Study ($25,000 over 6 months) • Principal Investigator, Natural Sciences and Engineering Research Council (NSERC) Discovery Grant Hierarchical systems for visual shape perception ($210,000 over five years) • Project Leader and Co-Investigator, Ontario Centres of Excellence Earth and Environmental Technologies (OCE-ETech), Three-Dimensionalizing Surveillance Networks ($436,509 over 3 years) • 2009-2012 Project Leader and Co-Investigator, Geomatics for Informed Decisions (GEOIDE), Three-Dimensionalizing Surveillance Networks ($727,500 over three years)
Mazyar Fallah	• CFI Infrastructure Operating Fund • NSERC RTI1 Project: MRI- guided navigation system for TMS (co-PI w/ J.D. Crawford, D. Henriques, L. Sergio) $96,305
Laurence Harris	• 2005-2011 CSA/NASA 9F007-052821Cdn $350,000 *The effect of long term weightlessness on perception experiments on the International Space Station.* • 2009/12 Humboldt Foundation *Euro 32,000 over 3yrs Self-motion perception in immersive environments (Co-I, PI= Michael Jenkin, Co-I=Rainer Herpers, Bonn-Rhein-Sieg University, Germany)* • 2010/2015 NSERC (46271-2010) *Multisensory coding of body and space $50,000/yr* • 2010/2013 CANADIAN SPACE AGENCY (CSA) Cdn $198,000 *Bodies in the Space Environment (BISE) data analysis* Space Sciences Enhancement Program (SSEP)
Denise Henriques	• 2012 Deutscher Akademischer Austauschdienst German Academic Exc, Research Visit Grant (3 months) Project: The role of the cerebellum in multisensory integration and motor learning $7,500 • NSERC RTI1 Project: MRI- guided navigation system for TMS (co-PI) $96,305 • 2011 NSERC RTI1 Project: 3D Haptic workstation for research into sensorimotor integration and 3D manipulation (co-PI) $115,559

	• 2009-2011 Alfred P Sloan fellowship $53,000 • 2009-2014 NSERC Discovery GrantProject: Neural representations of spatial information in sensorimotor control (sole PI) $110,000 • 2009-2012 J. P. Bickell Foundation.Project: Parkinson disease: Deficits in integrating visual and proprioceptive information. $50,250 • 2009-2015 NSERC CREATE team Grant Project: Computational Approaches to Sensorimotor Transformations for the Control of Action (PI: Mel Goodale) (PI: Mel Goodale, and I am one of 9 co-PI) $1,650,000 • 2008- 2012 Humbolt Foundation TransCoop Program (co-PI: Katja Fiehler) Project: Action-oriented spatial processing in sighted and blind humans 54,420 EURO $81,600 CDN
Kari Hoffman	• 2008-2012 NSERC Discovery Grant $29,936.00/yr • 2008-2013 Early Research Award Program($150K) $21,000 (plus $10,000 York Matching Funds = $31,000). • 2011-2012 Teledyne Scientific Contract $96,428
Ian Howard	• NSERC
Richard Hornsey	• TRILOBITE: a wide field of view aircraft collision avoidance system National Research Council – $65k/year • OCE – $80k/year • NSERC Discovery Grant (Flocks, Herds and Swarms: the roles of individuals in distributed sensor systems) $35k/year
Michael Jenkin	• $29,000/yr 5 year NSERC Discovery Grant "Perception for Mobile Agents". Awarded in 2011 • $41,289 NSERC RTI "Virtual reality display renewal" (PI M. Jenkin and L. Harris and R. Allison). Awarded in 2010 • $1.65M (total) 5 year NSERC Create Grant "Program in computational approaches to sensorimotor transformations for the control of action" (PI. M. Goodale). Awarded in 2009 • $711,696 (total) Canada Foundation for Innovation New Initiatives Fund "Canadian Centre for Field Robotics". (PI M. Jenkin, J. Tsotsos and G. Dudek). Awarded in 2009
Richard Murray	• NSERC Discovery Grant, $24,000/year • 2011 *MITACS Inc.*, *Networking and Technical Training Program*, 08-05-149 York Centre for Vision Research (CVR) Vision Science Summer School (co-I with Steeves) $25,000
Hiroshi Ono	• NSERC Discovery Grant - $25,000/year
David Regan	• NSERC Discovery Grant. $31,000 pa.

Josée Rivest	
Keith Schneider	• The Dana Foundation. 2009–2012. "Directly testing the magnocellular hypothesis of dyslexia with high-resolution functional magnetic resonance imaging of the human lateral geniculate nucleus." $200,000. • NSERC CREATE. 2011–2016. "Vision Science and Applications". $1.65 million. Hugh Wilson, PI. I am one of nine co-PIs on this collaborative training grant. • NSERC Discovery Grant. 2012–2016. "Structural and functional imaging of the human thalamus". $135,000. I am the sole PI on this grant.
Lauren Sergio	• Operating Grant - principal investigator Apr 2011 Mar 2016 $155,000 Natural Sciences & Engineering Research Council Discovery "Brain mechanisms for eye-hand coordination: Experience- and sex-related differences" • Student internship Grant - principal supervisor May 2011 $7,000 Ontario Neurotrauma Foundation Summer Internship Research Program in Injury Prevention "Effect of concussion on visuomotor coordination in sport: Reinjury potential assessment tool development" • Equipment Grant – co-investigator (PI Wolfgang Steurzlinger) May 2011 $86,694 Natural Sciences & Engineering Research Council RTI – Category I Title: "3D Haptic Workstation for Research into 3D Manipulation and Sensorimotor Integration" • Equipment Grant – co-investigator (PI J. Douglas Crawford) May 2011 $96,305 Natural Sciences & Engineering Research Council RTI – Category I Title: "fMRI-guided navigation system for TMS" • April 2011 Southlake/FoH/VPRI Research Scientist support: $10,000 • 6. February 2012 Faculty of Health Minor Research Grant: $3000 (with Denise Henriques)
Minas Spetsakis	
Jennifer Steeves	• The role of object and scene areas in object and scene processing $155,000 NSERC Discovery (over 5 years) • 2011 Vision Science and Applications (PI: Wilson and 9 others) *NSERC CREATE $1,650,000* • 2011 *MITACS Inc., Networking and Technical Training Program*, 08-05-149 York Centre for Vision Research (CVR) Vision Science Summer School (co-I with Murray) $25,000
Martin Steinbach	• Natural Sciences & Engineering Research Council Operating Grant: Human Ocular Motor Control ($27,000 p.a.)
Wolfgang Stuerzlinger	• 3D haptic workstation for research into 3D manipulation and sensorimotor integration, NSERC Research Tools & Infrastructure Grant, principal investigator W. Stuerzlinger and 2 others, CA $115,599, 2011. • Interactive Games Ontario 3D (iGO3D), OMDC Entertainment and Creative

	Cluster Partnerships Fund, principal investigator A. Hogue and 8 others, CA$ $635,000, 2011-2012. • Graphics, Animation, and New Media (GRAND), Network of Centres of Excellence, PI: K. Booth and 49 others, CA $23,250,000 over 7 years, 2010-2015. • Centre for Innovation in Information Visualization and Data Driven Design (CIV/DDD), Ontario Research Exellence Fund, PI: J. Tsotsos and 37 others, CA $3,844,826 over 5 years, 2010-2015. • Project VERUS: Virtual Environment Real User Study, IARPA Reynard Program, principal investigator: John Murray and 13 others, $2,600,000/year, 2010-2012. • NSERC CREATE Program in Computational Approaches to Sensorimotor Transformations for the Control of Action, renamed to "CAN-ACT: Computational Approaches in Neuroscience - Action, Control & Transformations", NSERC Collaborative Research and Training Experience, PI: M. Goodale, 10 co-applicants, CA$ 300,000/year (1st year 150k), 2009-2015. • Transducis: the Interface Between the Real and the Virtual, York CONCERT Digital Media Research Grant, PIs: M. Baljko, W. Stuerzlinger, CA$ 107,000/year, 2008-2012. • Enhanced Software Tools for the Early 3D Design Process, NSERC Discovery Grant, PI: W. Stuerzlinger, CA $28,000/year, 2007-2012.
Christine Till	• Multiple Sclerosis (MS) Scientific Research Foundation. “The clinical-demographic, epidemiology, pathobiology and neuroimaging features of acute demyelination in Canadian children” (PI Banwell, B; *Co-investigators include:* Till **C** $4.653 million over 3 years (2010-2013) • Canadian Institutes of Health Research (CIHR). Planning Grant. Multimodal complex data analyses of structural and functional magnetic resonance imaging in pediatric multiple sclerosis. $15,000. 2*012* • Scottish Rite Charitable Foundation (SRCF) of Canada “Structural and functional neuroimaging correlates of cognitive impairment in childhood-onset multiple sclerosis. $104,996 over Nov 2011-2014
John Tsotsos	• NSERC Discovery Grant - $60,300/yr - 2011 - 2016 • Canada Research Chair - $200,000/yr - 2010 - 2017 • Teledyne Scientific Co. US - Developing the Role of Attention in Object Recognition Systems - $635,000 - April 2009 - Dec. 2011. • Engineering Services Inc., Toronto - Visual Localization and Navigation Algorithms for Canadian Space Agency Lunar/Mars Rover - $85,000 - April 2010 - May 2012
Laurie Wilcox	• NSERC Discovery Grant • NSERC New Media Initiative Grant • NSERC RTI • OMDC Innovation grant • OCE partnerships grant • NSERC CREATE training grant

	• CFI LOF (Ci I, PI Kazimi)
Richard Wildes	• 2011-2012: "Comparative Evaluation of Stereo Algorithms"; Leading investigation of comparative empirical evaluation of extant stereo vision algorithms; Funded by MDA Space Missions; $15,000. • 2009-2011: "Video-Based Range Estimation for Automotive Applications"; Leading investigation of performance analysis and specification of video-based range estimation techniques for driving; Funded by NSERC and GM Canada; $156,800. • 2008-2011: "Spatiotemporal Stereo Vision for Space and Terrestrial Robotics"; Leading investigation of advanced algorithms for 3D reconstruction from binocular video sequences; Funded by NSERC and MDA Space Missions; $114,231. • 2007-2012: "Early Representation and Analysis of Monocular and binocular temporal image sequences"; Leading investigation of advanced algorithms for interpretation of monocular and binocular temporal image sequeces; Funded by NSERC; $100,000.
Frances Wilkinson	• Natural Science and Engineering Research Council of Canada - Behavioural and Imaging Studies of Face and Object Perception – Discovery Grant - $39,936/annum PI • Canadian Institutes of Health Research – Face recognition across head orientations: Perception, brain imaging, and modeling. Operating Grant (H.R. Wilson, PI) - $90,968/annum Coinvestigator
Hugh Wilson	• CIHR Operating Grant (7/2007 to 7/2012) PI "Face Recognition Across Head Orientations: Perception & Brain Imaging" Total Direct Costs: $454,840 • NSERC Operating Grant (4/2010 to 4/2015) PI "Visual Discrimination and Learning of Motion Trajectories" Total Direct Costs: $320,500 • NSERC CREATE Training Grant (4/2011 to 4/2017)"Vision Science and Applications" Total Direct Costs: $1,650,000 • Canadian Institute for Advanced Research (6/2009-6/2014)) Fellow, Program in Neural Computation and Perception Total Direct Costs: $150,000
Thilo Womelsdorf	• Dissociating the functional contributions of striatal and fronto-cingulate subdivisions for learning the value of stimuli and actions. NSERC Discovery Grant: $160.000 CAD ($32k per annum) 01.04.2012-30.03.2017. • Measuring functional networks of multiple brain cells with a fine-scale triade electrode system during higher attentional task performance. NSERC RTI Equipment grant: $60.750 CAD [02.04.2012, one time]. • Elucidating how attention is controlled by networks of brain cells - Identifying the cellular mechanisms that decide what we attend. Early Researcher Award (ER11-08-140), Ontario Ministry of Economic Development and Innovation (MEDI).$140.000 CAD 01.04.2012-30.03.2017. • Neuronal mechanisms underlying the emergence of selective attentional control. CIHR Operating Grant, $855,800 CAD 01.04.2010-30.03.2015.