Centre for Vision Research 2005-2006

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1. **Mandate of the Unit**

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.

2. **Organizational Structure of the Unit**

Director
Associate Director
CVR Steering Committee (see below)
Administrative Assistant
Systems Administrator
Technical Staff

CVR Steering Committee 2005/06

Director	John K. Tsotsos
Associate Director	Doug Crawford
Academic Coordinator	Hugh Wilson
Facilities Coordinator	Rob Allison
Seminar Coordinator	Laurence Harris
Ex-officio	Ian P. Howard
Member	James Elder
Member	Richard Wildes
Member	Sven Dickinson, Adjunct Rep

3. **Active Membership List**

York University Faculty Members of the Centre (2005-2006)

Scott Adler   Associate Professor of Psychology
Interests: development of eye movement control, visual selective attention, object recognition, and visual expectations

Rob Allison   Associate Professor of Computer Science
Interests: stereoscopic vision, perceptual issues in virtual environments, eye movements

Doug Crawford   Professor of Psychology, Biology, and Kinesiology & Health Sciences
Canada Research Chair in Visual-Motor Neuroscience
Associate Director, Centre for Vision Research
Interests: three-dimensional eye and head movements, eye-hand coordination,Trans-saccadicperceptual integration, modeling, neurophysiology

James Elder   Associate Professor of Psychology, Computer Science, and Mathematics
Project Leader, Human Performance Laboratory
Interests: human and computer vision

Mazyar Fallah   Assistant Professor of Kinesiology & Health Science
Interests: visual perception and attention, object processing, oculomotor systems.

Laurence Harris   Professor of Psychology and Biology
Interests: perception and coding of space and self-motion

Denise Henriques   Assistant Professor Kinesiology & Health Science and Psychology
Interests: motor learning, multisensory integration, visuomotor control, eye-hand coordination

Ian Howard   Distinguished Research Professor of Psychology and Biology
Interests: space perception, eye movements, visual-vestibular interactions

Richard Hornsey   Associate Professor of Computer Science and Physics
Interests: integrated electronic sensors, biologically inspired image sensors,
low vision enhancement systems, sensors for space applications

Michael Jenkin   Professor of Computer Science
Interests: computer vision, mobile robotics, immersive visual displays

Richard Murray   Assistant Professor of Psychology
Interests: visual psychophysics, spatial vision, 3D shape perception

Hiroshi Ono	Distinguished Research Professor of Psychology Interests: visual perception of direction and distance, eye movement
David Regan	CAE/NSERC Industrial Research Professor. Distinguished Research Professor of Psychology and Biology, York University Professor of Ophthalmology and Medicine, University of Toronto Fellow of the Royal Society of Canada Foreign Fellow of the Royal Netherlands Academy of Science Interests: 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, York University Department of Psychology of the Baycrest Centre for Geriatric Care Interests: neuropsychology, face and object recognition, rehabilitation of visual neglect
Lauren Sergio	Associate Professor of Kinesiology, Faculty of Health Interests: neural mechanisms of visually guided reaching in parietal and precentral cortex
Minas Spetsakis	Associate Professor of Computer Science Interests: computer vision and robotics
Jennifer Steeves	Assistant Professor of Psychology, Faculty of Health Interests: face and scene processing in neurological patients and one-eyed observers motion processing in strabismus
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 Interests: eye movements, visual-motor coordination, clinical disorders of the oculomotor system
Wolfgang Stuerzlinger	Associate Professor of Computer Science Interests: human-computer interaction, virtual reality, computer graphics
John Tsotsos	Professor of Computer Science

Director, Centre for Vision Research
Canada Research Chair in Computational Vision
Adjunct Professor, Dept. of Computer Science, University of Toronto
Adjunct Professor, Dept. of Ophthalmology, University of Toronto
Interests: human and machine vision, computational models of attention, motion understanding, robotics

Laurie Wilcox   Associate Professor of Psychology
Interests: stereopsis/depth perception

Richard Wildes   Associate Professor of Computer Science
Interests: spatiotemporal analysis of visual information, motion analysis, binocular vision, gesture recognition, biometrics

Frances Wilkinson   Professor of Psychology, Faculty of Health Science
Affiliated Scientist, Division of Applied and Interventional Research, Toronto Western Research Institute, University Health Network, Toronto
Adjunct Professor - Department of Ophthalmology, University of Toronto
Interests: involvement of the visual system in migraine; intermediate visual form perception using psychophysical, computational and fMRI methodologies

Hugh Wilson   ORDCF Chair of Biological and Computational Vision
Fellow, Canadian Institute for Advanced Research
Director, CIHR Training Grant in Vision Health Research
Fellow, Optical Society of America
Interests: psychophysical and neural models of form vision; fMRI studies of cortical form vision, nonlinear dynamics of cortical function

Membership Categories

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 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 is a collaborator of 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 student; 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
- Problem cases will be dealt with by sending a letter to the member.

4. **Activities of the Unit**

- Grants for 2005/06 $4,954,129
- CVR hosted the International Conference on Computational Vision in Neural and Machine Systems.
- Weekly Seminar Series
- Day-long retreat to revamp governance of CVR

Publications for 2005/06:
  Books   **3**
  Chapters in Books **12**
  Refeered Journals **93**
  Proceedings **41**
  Technical Reports **9**
  Conference Presentations **123**
  Colloquia   **58**

5. **Measures taken to Promote Equity as Enunciated in the University Academic Plan**

   The CVR is an interdisciplinary research group in vision. As such, our seminar series and international conference are designed to foster interdisciplinary research and collaborations. As the largest and most prominent vision research group in Canada, we feel that we are highly successful in this endeavour.

   Regarding self-governance, the CVR held a retreat in June, 2006, at which it was decided that four members of the Steering Committee should be elected by the membership for two year terms. Elected members would be restricted to a maximum of two consecutive two-year terms before rotating off the committee for a minimum of two years. This procedure was implemented to ensure greater representation of the CVR membership while ensuring committee turnover to encourage a diversity of opinion. In addition, the Director (ex-officio member of steering committee) was mandated to appoint one additional member to achieve balance among the various departments (Computer science, Psychology, Biology, Kinesiology) comprising CVR. Finally, it was decided that the graduate students should elect one member to the committee. All of this has now been implemented, so we have made great strides in enhancing our self-governance.

6. **Graduate Training Activities/Accomplishments**

  MA **7**
  MSc**.** **41**
  PhD **51**
  Post-Doctoral Fellows **18**

7. **Any Changes in Physical Space at the Unit**

There have been no changes in CVR space allocation during the previous year.

8. **List of all Contractual Obligations Entered into By or on Behalf of the Unit**

The CVR has not entered into any contractual obligations during the previous year.