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

**CVR Steering Committee 2009/10**

<table>
<thead>
<tr>
<th>Role</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Director</td>
<td>Hugh Wilson</td>
</tr>
<tr>
<td>Associate Director</td>
<td>Laurie Wilcox</td>
</tr>
<tr>
<td>Appointed by the Director</td>
<td>Richard Wildes</td>
</tr>
<tr>
<td>Ex-officio</td>
<td>Ian P. Howard</td>
</tr>
<tr>
<td>Ex-officio</td>
<td>John K. Tsotsos</td>
</tr>
<tr>
<td>Member</td>
<td>Laurence Harris</td>
</tr>
<tr>
<td>Member</td>
<td>Richard Murray</td>
</tr>
<tr>
<td>Member</td>
<td>Jennifer Steeves</td>
</tr>
<tr>
<td>Member</td>
<td>Carol Westall, Adjunct Rep.</td>
</tr>
<tr>
<td>Member</td>
<td>Student Rep.</td>
</tr>
</tbody>
</table>
3. **Active Membership List**

**York University Faculty Members of the Centre (2009-2010)**

<table>
<thead>
<tr>
<th>Name</th>
<th>Position and Qualifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scott Adler</td>
<td>Associate Professor of Psychology, Faculty of Health Science. Interests: development of eye movement control, visual selective attention, object recognition, and visual expectations.</td>
</tr>
<tr>
<td>Rob Allison</td>
<td>Associate Professor of Computer Science. Interests: stereoscopic vision, perceptual issues in virtual environments, eye movements.</td>
</tr>
<tr>
<td>Doug Crawford</td>
<td>Professor of Psychology, Biology, and Kinesiology &amp; Health Sciences. Chair, Neuroscience Diploma Program. Interests: three-dimensional eye and head movements, eye-hand coordination, trans-saccadic perceptual integration, modeling, neurophysiology.</td>
</tr>
<tr>
<td>Joseph DeSouza</td>
<td>Assistant Professor of Psychology, Biology and Neuroscience Diploma, York University. Interests: systems neuroscience, frontal cortex, attention, fMRI, corollary discharge, eye position signals and oculomotor neurophysiology.</td>
</tr>
<tr>
<td>James Elder</td>
<td>Associate Professor of Psychology, Computer Science, and Mathematics. Interests: human and computer vision.</td>
</tr>
<tr>
<td>Mazyar Fallah</td>
<td>Assistant Professor of Kinesiology &amp; Health Science. Interests: visual perception and attention, object processing, oculomotor systems.</td>
</tr>
<tr>
<td>Laurence Harris</td>
<td>Chair, Department of Psychology, Faculty of Health Science. Professor of Psychology and Biology. Interests: perception and coding of space and self-motion.</td>
</tr>
<tr>
<td>Denise Henriques</td>
<td>Assistant Professor Kinesiology &amp; Health Science and Psychology. Interests: motor learning, multisensory integration, visuomotor control, eye-hand coordination.</td>
</tr>
<tr>
<td>Kari Hoffman</td>
<td>Assistant Professor of Psychology, Faculty of Health Science. Interests: face processing, learning, memory and plasticity, sleep oscillations.</td>
</tr>
<tr>
<td>Ian Howard</td>
<td>Distinguished Research Professor of Psychology and Biology. Interests: space perception, eye movements, visual-vestibular interactions.</td>
</tr>
</tbody>
</table>
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
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
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 Science
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 Science
Adjunct Scientist Neurosciences and Mental Health, The Hospital for Sick Children Research Institute
Adjunct Assistant Professor, Department of Ophthalmology and Vision Sciences, Faculty of Medicine, University of Toronto
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

Christine Till  
Assistant Professor of Psychology, Faculty of Health Science  
Interests: 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  
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, Faculty of Health Science  
Associate Director, Centre for Vision Research  
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  
Director, Centre for Vision Research  
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 (CVR) for 2009/10 - $1,429,092
- Grants (Overall) for 2009/10 - $6,019,710

- Ian Howard Lecture Series. This named lecture series brought two outstanding senior vision scientists to York to present overviews of their research: Steven Zucker, Yale University and Nancy Kanwisher, Massachusetts Institute of Technology. The series is a continued success, so CVR will continue the Ian Howard Lectures indefinitely.

- Weekly Seminar Series. In addition to the Ian P. Howard lectures, the CVR hosts a regular Friday seminar series throughout fall and winter semesters.

- Vision Research Summer School for undergraduates. In an effort to attract more outstanding graduate students to York to do research with faculty in CVR, the CVR Summer School in Visual Science 2010 for undergraduates was held on May 17-21. Over 100 students from around the world applied to participate, and the top 24 were chosen to attend with all expenses paid. Students came from Canada, the US, and several foreign countries. All were uniformly impressed by the research presentations and lab experiences with CVR faculty. We are very optimistic that this will translate into more outstanding applicants to do graduate research at CVR, but we will not know until graduate applications are all submitted in February 2011.

- Publications for 2009/10:

  Books - 5
  Chapters in Books - 23
  Refereed Journals - 89
  Proceedings - 145
  Conference Presentations - 31
  Colloquia - 41

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. As all faculty are hired by academic departments at
York, CVR is not permitted to hire any faculty. However, our membership reflects broad diversity in accordance with equity guidelines.

6. **Graduate Training Activities/Accomplishments**

   | Degree     | Count |
---|------------|-------|
   | MA         | 19    |
   | MSc        | 33    |
   | PhD        | 52    |
   | Post-Doctoral Fellows | 12 |
   | Research Scientists    | 13 |

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

   In March, 2010, the Sherman Health Science Research Centre opened, and the following CVR faculty moved their laboratories and offices to that building: Laurence Harris, Michael Jenkin, Scott Adler, and Jennifer Steeves. In addition, Keith Schneider, who joined York and the CVR on July 1, 2010, also has his laboratory in Sherman. These moves provided additional space for CVR and also freed space for Computer Science (formerly occupied by Jenkin) and Psychology (former space of Steeves and Adler).

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

   The CVR as a whole did not enter into any contractual obligations during 2009-2010.