York Vision Group
York University, Toronto

Annual Report, July 1987 to June 1988

Faculty

Stuart Anstis  Professor of Psychology.  
Principal Investigator in the Human Performance in Space Laboratory.  
Interests: spatio-temporal aspects of vision including visual motion. 
Stuart was on sabbatical leave during 1987-88 and spent some time at the University of California at San Diego.

Otmar Bock  Scientist in the Human Performance in Space Laboratory.  
Adjunct Assistant Professor of Psychology from September, 1988.  
Interests: intersensory and sensory-motor coordination.

Howard Flock  Professor of Psychology.  
Interests: achromatic brightness perception and the judgment of visual surfaces and spatial arrangements.  
Howard will be on sabbatical leave during 1988-89.

Keith Grasse  Assistant Professor of Psychology.  
Interests: the electrophysiology of the visual system.

Ian Howard  Professor of Psychology.  
Director of the Human Performance in Space Laboratory.  
Interests: space perception; eye movements; visual-vestibular interactions.

Peter Kaiser  Professor of Psychology.  
Interests: colour vision, sensory processes, physiological optics, human factors.  
Chairman of CIE Technical Committee 1-20 and Optical Society of America delegation to Inter-Society Colour Council. Member of CIE Executive Committee and Board of Lighting Research Inst.

Masao Ohmi  Scientist in the Human Performance in Space Laboratory.  
Interests: oculomotor system and visual-vestibular interactions.
Hiroshi Ono Professor of Psychology.
Principal Investigator in the Human Performance in Space Laboratory.
Interests: the visual perception of direction and distance; eye movements.
Hiroshi was on sabbatical leave during 1987-88 and spent two months in Japan as a guest of the Japanese Government.

David Regan Professor of Psychology at York University.
Professor of Ophthalmology at the University of Toronto.
Principal Investigator in the Human Performance in Space Laboratory.
Interests: visually evoked potentials; visual and auditory disorders; psychophysics of visual motion; stereopsis and colour vision; auditory psychophysics; vision in aviation.

Paul Stager Professor of Psychology.
Interests: Human factors in aerospace performance.
Paul is Canadian representative to the Council of the International Ergonomics Association, IEA Liaison Officer and Executive Council member of the Human Factors Association of Canada.

Martin Steinbach Professor of Psychology.
Interests: eye movements; visual-motor coordination; Clinical disorders of the oculomotor system.
During 1987-88 Martin had a Research Fellowship, was elected Fellow of the Canadian Psychological Association, appointed Adjunct Professor of Ophthalmology at the University of Toronto and gave the Atkinson College Distinguished Faculty Lecture. He is on sabbatical leave during 1988-89.

Research Associates

Marian Regan Working with David Regan on time-series analysis of evoked potentials.

Nancy Rush-Smith Working with Steinbach on visual adaptations in enucleated children at the Hospital for Sick Children.

Post Doctoral Fellows

Karin Arnold Working with Anstis on motion perception.
Linda Bowns Working with Ono on the psychophysics of space perception.

Tom Heckmann Working with Howard on illusions of self motion and visual motion.

Xiang-Hua Hong Working with Regan on visual psychophysics.

Angela Kothe Working with Regan on visual disorders in neurological patients.

Bonnie Moidell Bonnie was working with Steinbach and Ono until shortly before she died of cancer in the Fall of 1987.

Yasuhisa Nakano Working with Kaiser on colour vision.

Bill Simpson Working with Howard on mechanisms of spatial orientation.

**Graduate students (supervisors)**

Richard Bird (Howard) Richard left in June to study journalism.

Bob Cheung (Howard) Bob was awarded his M. Sc.

Carol Dengis (Steinbach)

Debbie Giaschi (Anstis) Debbie won an Ontario Graduate Scholarship.

Hameluck, D. (Stager)

Haruo Hibino (Kaiser) Haruo had his Government of Canada grant renewed.

Lynn Kirshner (Steinbach)

Alistair Mapp (Ono)

Chieko Murasugi (Howard)

Steven Nusinowitz(Flock)

Maureen Reed (Anstis) Maureen had her NSERC award renewed.

Peter Oberle (Flock)
Josée Rivest (Ono)  Josée obtained her M.A. and left for University of Montreal.

James Tam (Ono)

James Zacher (Howard)
Research Grants

Anstis  NSERC Operating Grant (new) for work on visual motion.
Flock  Faculty of Arts Grant.
Grasse  NSERC Operating Grant (continuation) for visual electrophysiology.
        NSERC Equipment Grant.
        MRC Operating Grant (continuation) for oculomotor studies of brainstem.
Howard  NSERC Operating Grant (continuation) for work on visual stability.
        DCIEM Contract, for work on the visual-vestibular system.
        DCIEM Contract, for work on illusory self motion.
Howard, Regan  Province of Ontario grant (5 years) for a Human Performance Laboratory in the Institute of Space and Terrestrial Science.
Anstis, Ono and Grasse
Kaiser  NSERC Operating Grant (continuation) to work on colour vision.
        President's NSERC Grant.
Ono  NSERC Operating Grant (continuation) to work on binocular vision.
        Japanese Government Research Award for Foreign Specialists.
Regan  NSERC Operating Grant, (new) Visual motion and form.
        MRC Operating Grant (new) Sensory deficits from cortical lesions.
        NIH grant Visual deficits in multiple sclerosis.
        U.S. Air Force Grant to buy a neuromagnetometer.
        U.S. Air Force Grant (new) Form and depth from motion.
Stager  Department of National Defence to evaluate prototype avionics.
        Indal Technologies Inc. Human-factors evaluation of display system.
        Transport Canada, Air Traffic Services Contract to study air traffic control.
        DCIEM contract The peripheral vision horizon display.
        Transport Canada (Arnott Group) Evaluate air traffic control workstations.
Steinbach  NSERC Operating Grant (continuation) to work on eye movements.
Steinbach  Atkinson College Grant.
Steinbach, Ono
Gallie, Chew  NIH Grant (continuation) for work on adaptations to monocular enucleation.

Total annual value of grants  $2,200,000
**Books and Chapters in Books**


**Papers in Refereed Journals**


Giaschi, D., Anstis, S. M. The less you see it, the faster it moves: Speed of apparent motion varies with duty cycle. *Vision Research*, in press.


Murasugi, C. M. and Howard, I. P. Human horizontal optokinetic nystagmus elicited by the upper versus the lower visual fields. *Visual Neuroscience*, in press.


**Published Proceedings**


**Talks and Abstracts**


**Patents and Reports**


**Colloquia**

**Stuart Anstis**

**Ian Howard**
- Department of Psychology, New York University, Sept., 1987.
- Department of Psychology, Queens University, Nov, 1987.

**Hiroshi Ono**
- University of California at Santa Barbara.
- McGill.
- University of Hawaii.
- Smith Kettlewell Institute, San Francisco.
- University of Tokyo.
- University of Kyoto.
- University of Kyushu.
- Chukyo University.
- Advance telecommunication research institute, Osaka, Japan.

**David Regan**
- Broadhurst Lecture, Eye Research Institute, Boston.
- Dept. of Computer Science University of Toronto.
- Wright-Paterson Air Force Base, Ohio.
- Playfair Institute, Toronto.
- Hospital for Sick Children, Toronto.
- Eye Research Institute, Boston.
- Toronto Western Hospital, Research Day, 1988.
- NRC Aviation Research Facility, Ottawa.
- Dept. of Physics, York University.
- Dept. of Physical Education, York University.

**Marian Regan**

**Martin Steinbach**
- Combined Ophthalmology and Neurology Rounds, Henry Ford Hospital, Detroit.
- Ophthalmology Rounds, Hospital for Sick Children, Toronto.
- Kellogg Eye Center, Ann Arbor.
- Vision Group, McMaster University.
- Psychology Dept., Queen's University.
- Psychology Dept., York University.
**Vision Group Seminars**

<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
<th>Topic</th>
</tr>
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<tbody>
<tr>
<td>Oliver Braddick</td>
<td>Cambridge</td>
<td>How long is the short range process?</td>
</tr>
<tr>
<td>Hanspeter Mollot</td>
<td>Freiburg</td>
<td>Interaction of modules in depth perception.</td>
</tr>
<tr>
<td>Takao Sato</td>
<td>Osaka.</td>
<td>Pattern segregation within isoluminant chromatic cinematograms.</td>
</tr>
<tr>
<td>Tom Heckmann</td>
<td>York.</td>
<td>Panum's limit, stereothresholds and independent spatial channels.</td>
</tr>
<tr>
<td>Bill Simpson</td>
<td>York.</td>
<td>Depth discrimination from optic flow.</td>
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Plans for the Coming Year

Dr. Tiande Yang, Head, Research Labs of Environmental Medicine in Space Cabin, Institute of Space Medico-Engineering, Beijing, will be visiting the Institute of Space and Terrestrial Science for seven months from August, 1988.

Dr. Kenzo Sakurai, Associate Professor, Liberal Arts Department, Tohoku Gakuin University, Sendai will be visiting the Institute of Space and Terrestrial Science for 1 year from August 1, 1988.

Dr. Masaaki Ohkura, Associate Professor of Psychology will be visiting York University for one year from April 1, 1989.

Dr. Koichi Shibuta, from Kyshu University will be starting as a Post-doctoral Fellow in March, 1989.

The first annual conference for Visual Scientists in and around Ontario held at Glendon College in October, 1987 was attended by 70 participants and was very successful.

The second annual Conference will take place at Glendon College on Saturday, September 24.

On September 23 Professor John Kennedy, of the University of Toronto, has organized a conference on Shape from Shading to be held at Scarborough College.