

VISTA

A close-up photograph of a woman with dark skin and short dark hair, wearing a black VR headset. She is looking towards the left of the frame. In the background, a computer monitor displays two axial brain scan images with green crosshairs. A mechanical arm of the VR headset is visible in the foreground, pointing towards the screen.

**GRADUATE GAELLE LUABEYA, PART OF THE
VISTA TRAINEE COMMUNITY (P. 22)**

VISTA

VISION: SCIENCE
TO APPLICATIONS

YORK UNIVERSITY

IMPACT REPORT 2016 - 2019



CRC
HEALTH
MEMORY
HEALTHCARE
PERCEPTION
YRC
CFREF
INNOVATION
RESEARCHERS
PHDS
PHILOSOPHY
KINESIOLOGY
VPRI
ROBOTICS
VISION
COMPUTER SCIENCE
INTERDISCIPLINARY
STARTUPS
MASTER'S
VIRTUAL REALITY
VISUAL
SCIENCE

ARTIFICIAL INTELLIGENCE
TORONTO
CANADA
YORKU
SCIENCE
LABS
SYSTEMS
CVR

COMPUTATIONAL
LASSONDE
CAMERA
FEDERAL
GOVERNMENT
FUNDING
STUDENTS
GRADUATE STUDIES
NEUROSCIENCE
INFORMATION
PSYCHOLOGY
MORE
TO
EYE
VECTION
ARTS
DIGITAL MEDIA
SYSTEMS
CVR

AFFILIATES
PREDICTIVE
ELECTRICAL ENGINEERING
AMPD
ONTARIO
YORKU
FEDERAL
GOVERNMENT
FUNDING
STUDENTS
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NEUROSCIENCE
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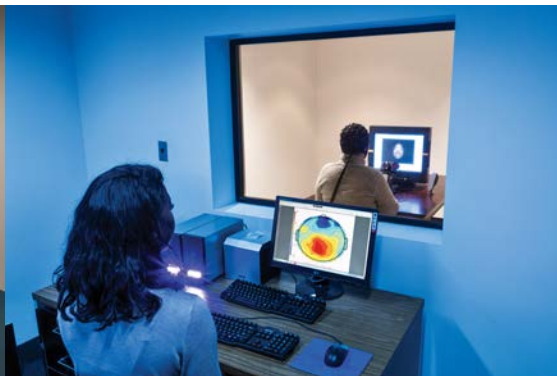
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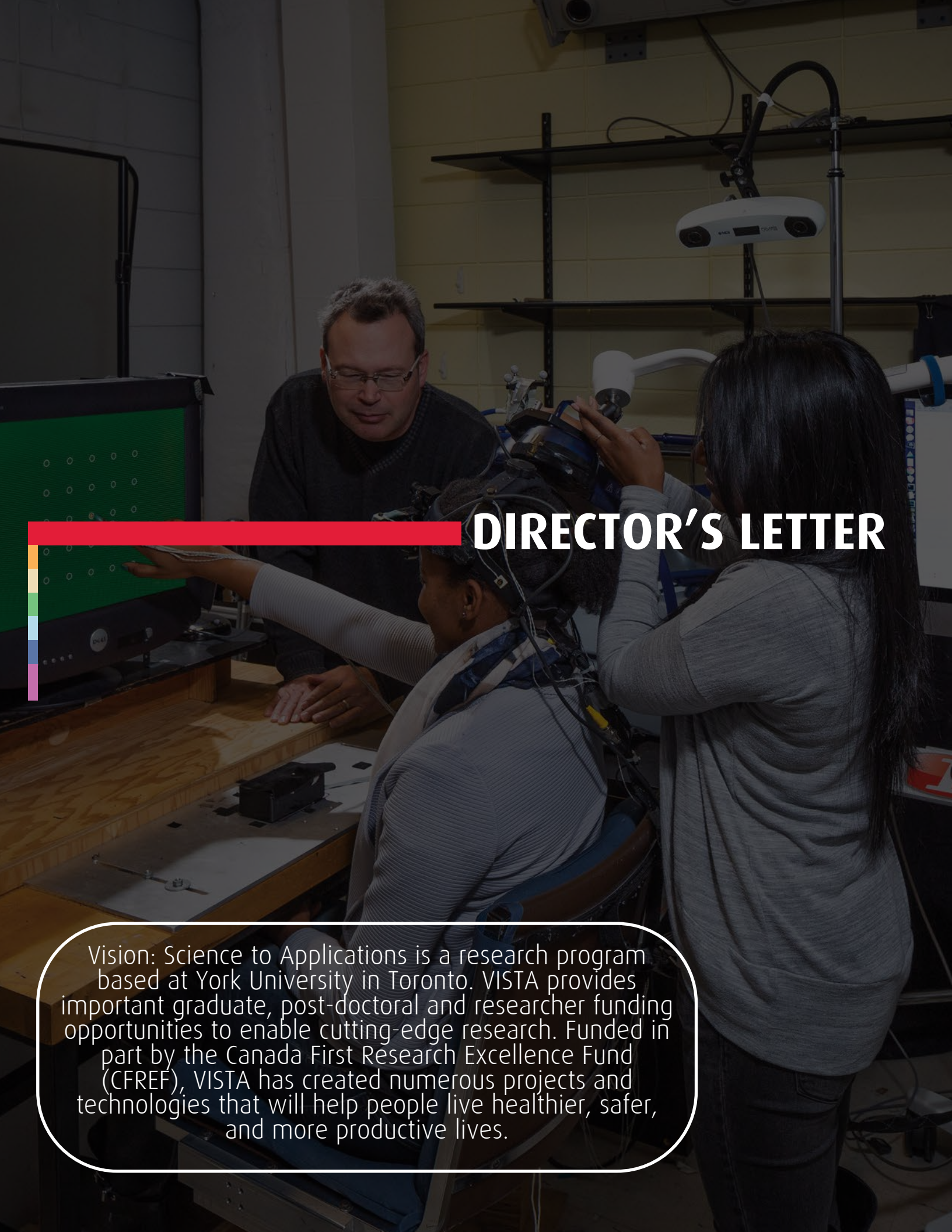
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DIRECTOR'S LETTER

Vision: Science to Applications is a research program based at York University in Toronto. VISTA provides important graduate, post-doctoral and researcher funding opportunities to enable cutting-edge research. Funded in part by the Canada First Research Excellence Fund (CFREF), VISTA has created numerous projects and technologies that will help people live healthier, safer, and more productive lives.

It's hard to believe that over three years have passed since we got the amazing news: funding from the Canada First Research Excellence Fund (CFREF), with generous support from York University and our partners, to create the 7-year, \$120 Million VISTA program.

During this time, we've set up programs to support grants, research chairs, fellowships, scholarships, travel awards, innovation, and events like our Innovation and Technology Day and our International Vision conference (see pages 19-20), often partnering with York's Centre for Vision Research.

But foremost I am proud of the team we have built up, composed of 67 York professors (including 12 new faculty), 12 new staff, 45 funded trainees, and over 65 external collaborations (pages 5-8 and page 22). Integrating this large multidisciplinary team has been one of the great challenges and successes of the VISTA program.

Please have a look through the following pages. I hope you'll agree that we are delivering the world's premier program for transdisciplinary and translational vision research.

SINCERELY,

DOUG CRAWFORD
SCIENTIFIC DIRECTOR

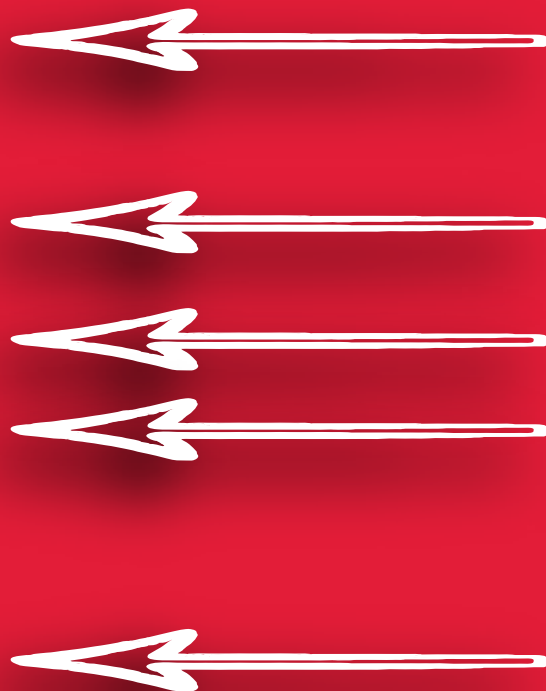


VISTA HIGHLIGHTS

FUNDED TO DATE



OUR TEAM



27 CORE FACULTY

34 ASSOCIATE FACULTY

9 AFFILIATES

45 TRAINEES

12 VISTA STAFF

OUR ACHIEVEMENTS



3 VISION SUMMER SCHOOLS



2 INTERNATIONAL VISION CONFERENCES



VSS CANADIAN VISION SOCIAL



83 AWARDS AND DISTINCTIONS



21 FACULTY AT CRC, YRC, OR REH LEVELS



2 VIRTUAL REALITY WORKSHOPS



16+ R2R VIDEOS



250 ATTENDEES AT OUR INNOVATION AND TECHNOLOGY DAY



20+ PUBLIC RESEARCH FORUMS



100+ INTER-DISCIPLINARY PROJECTS



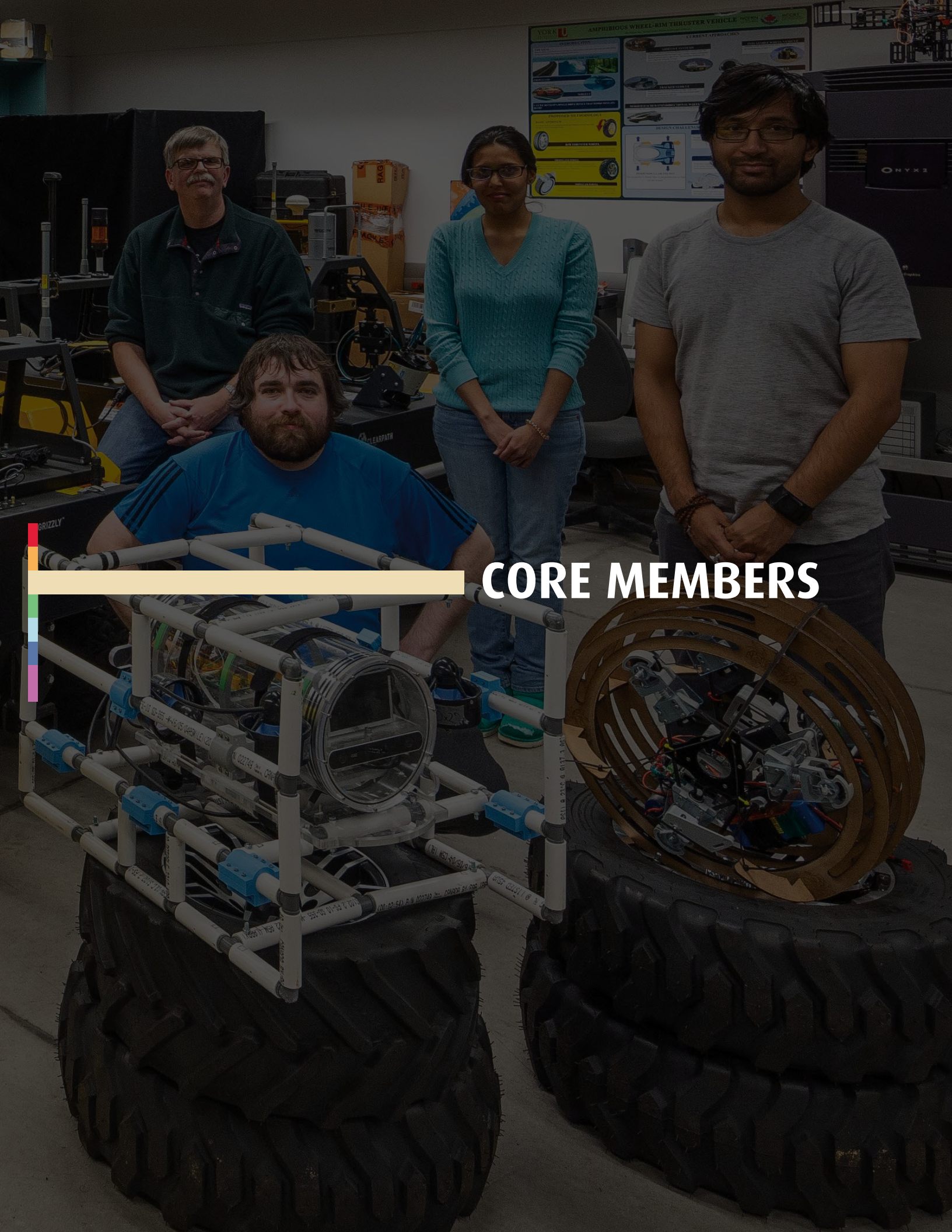
NEW MRI SCANNER



149 PUBLIC & ACADEMIC COLLABORATORS



22 INVENTION DISCLOSURES



CORE MEMBERS



CRC

Doug Crawford

Distinguished Professor
YRC Tier 1
Department
Psychology (Health)
Areas of Interest
Visuospatial memory;
eye movements;
visuomotor control



YRC

Richard Wildes

Associate Professor
YRC Tier 1
Department
Electrical Engineering &
Computer Science (Lassonde)
Areas of Interest
Computational vision; video
understanding; machine vision
applications



YRC

Robert Allison

Professor
YRC Tier 2
Department
Electrical Engineering &
Computer Science (Lassonde)
Areas of Interest
Virtual reality; stereopsis;
3D film



YRC

Jacob Beck

Associate Professor
YRC Tier 2
Department
Philosophy (Liberal Arts &
Professional Studies)
Areas of Interest
Philosophical theories of
perception; cognition;
representation; consciousness



CRC

NEW

Michael Brown

Professor
CRC Tier 1
Department
Electrical Engineering &
Computer Science (Lassonde)
Areas of Interest
Computer vision;
image processing;
computer graphics



NEW

Marcus Brubaker

Assistant Professor
Department
Electrical Engineering &
Computer Science (Lassonde)
Areas of Interest
Computer vision;
machine learning;
computational biology



CRC

NEW

Mary Bunch

Assistant Professor
CRC Tier 2
Department
Cinema & Media Arts
(Arts, Media, Performance,
& Design)
Areas of Interest
Interdisciplinary and collaborative
critical disability; feminist,
queer studies and critical theory;
arts-based methodologies



Patrick Cavanagh

Senior Research Fellow
Department
Psychology (Health)
Areas of Interest
Visual neuroscience and perception;
motion perception, spatial vision,
color vision, attentional processes,
object recognition, links between
art and brain function



Gene Cheung

Associate Professor
Department
Electrical Engineering &
Computer Science (Lassonde)
Areas of Interest
Graph Signal Processing;
3D Imaging



NEW

Taylor Cleworth

Assistant Professor
Department
Kinesiology (Health)
Areas of Interest
Neuromuscular, sensory motor
and balance control;
neuromechanics



NEW

Patricio Dávila

Associate Professor
Department
Cinema and Media Arts (Arts,
Media, Performance, & Design)
Areas of Interest
Information visualization;
critical visualization practice;
public installation; interaction
design; visual design



YRC

James Elder

Professor
YRC Tier 1
Department
Electrical Engineering &
Computer Science (Lassonde)
Areas of Interest
Computer vision;
attentive vision systems;
single-view 3D reconstruction



Mazyar Fallah

Professor & Associate Dean
Department
Psychology (Health)
Areas of Interest
Oculomotor; Feature Integration;
Psychophysics; EEG



Caitlin Fisher

Associate Professor
Department
Cinema & Media Arts
(Arts, Media, Performance,
& Design)
Areas of Interest
Future of narrative; interactive
storytelling; interactive cinema;
augmented Reality



NEW

Erez Freud

Assistant Professor
Department
Psychology (Health)
Areas of Interest
Object recognition;
Visuomotor control;
Neuroimaging



YRC

Laurence Harris

Professor & CVR Director
YRC Tier 1
Department
Psychology (Health)
Areas of Interest
Multisensory; vestibular;
psychophysics; orientation
and gravity



Denise Henriques

Professor
Department
Kinesiology (Health)
Areas of Interest
Sensorimotor control; Eye,
head, limb coordination;
Vision, haptics and kinesthesia



Michael Jenkin

Professor
Department
Electrical Engineering &
Computer Science (Lassonde)
Areas of Interest
Visually guided autonomous
systems; virtual reality;
computer vision



NEW

Peter Kohler

Assistant Professor
Department
Psychology (Health)
Areas of Interest
Mid-level vision; perceptual
organisation; brain imaging

**Matthew Kyan**

Associate Professor
Department
Electrical Engineering &
Computer Science (Lassonde)
Areas of Interest
Biologically inspired models for
learning; signal processing;
knowledge-assisted visualization



NEW

Kevin Lande

Assistant Professor
Department
Philosophy
Areas of Interest
Philosophy of perceptual
representation; object and
space perception

**Richard Murray**

Professor
Department
Psychology (Health)
Areas of Interest
Human visual perception;
psychophysics; computational
modelling; light, shape, surfaces



CRC

NEW

Regina Rini

Assistant Professor
CRC Tier 2
Department
Philosophy, (Liberal Arts &
Professional Studies)
Areas of Interest
Ethics; moral cognition;
social epistemology



YRC

Shayna Rosenbaum

Professor
YRC Tier 2
Department
Psychology (Health)
Areas of Interest
Medial temporal lobe; prefrontal
cortex; patient-lesion methods



YRC

Lauren Sergio

Professor
YRC Tier 1
Department
Kinesiology (Health)
Areas of Interest
Motor control; eye-hand
coordination; neurophysiology

**Jennifer Steeves**

Professor & Associate Dean
in Faculty of Science
Department
Psychology (Health)
Areas of Interest
MRI, TMS, scene perception,
eye enucleation,
monocular vision

**Dale Stevens**

Associate Professor & MRI
Director
Department
Psychology (Health)
Areas of Interest
Cognitive neuroscience;
cognitive aging



CRC

NEW

Nikolaus Troje

Professor
CRC Tier 1
Department
Biology (Science)
Areas of Interest
Biological motion;
space perception; virtual reality



CRC

John Tsotsos

Professor
CRC Tier 1
Department
Electrical Engineering &
Computer Science (Lassonde)
Areas of Interest
Computational vision;
mobile robotics;
artificial intelligence



CRC

Graham Wakefield

Assistant Professor
CRC Tier 2
Department
Computational Arts (Arts, Media,
Performance & Design)
Areas of Interest
Interactive generative art; virtual
reality; augmented reality;
data visualization



NEW

Laurie Wilcox

Professor
Department
Electrical Engineering &
Computer Science (Lassonde)
Areas of Interest
Stereopsis; depth perception;
3D; displays; image quality

**Jianhong Wu**

Distinguished Research
Professor & NSERC
Industrial Chair
Department
Physics & Astronomy (Science)
Areas of Interest
Neural Circuits; synaptic
plasticity; machine learning



CRC

NEW

Joel Zylberberg

Assistant Professor
CRC Tier 2
Department
Physics & Astronomy (Science)
Areas of Interest
Neural Circuits; synaptic plasticity;
machine learning

CRC

– Canada Research Chair

YRC

– York Research Chair

NEW

– New Faculty

**JOIN AN INTERNATIONAL VISION
RESEARCH COMMUNITY!**

The VISTA Leadership Committee invites Core members to
nominate York researchers for Associate membership and
non-York academic colleagues for Affiliate membership.
For more information, please visit:
yorku.ca/vista/vista-membership



SCIENCE



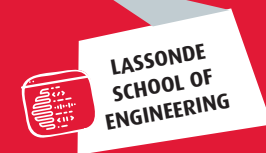
VISTA

VISION: SCIENCE
TO APPLICATIONS

YORK UNIVERSITY

LIBERAL ARTS &
PROFESSIONAL
STUDIES

HEALTH

LASSONDE
SCHOOL OF
ENGINEERING

ASSOCIATE MEMBERS

Faculty of Science

**Christopher Bergevin** - Dept. of Physics & Astronomy**Ozzy Mermut** - Dept. of Physics & Astronomy**Hugh R. Wilson** - Dept. of Biology**Georg Zoidl** - Dept. of Biology

Faculty of Health

**Scott Adler** - Dept. of Psychology**Joseph DeSouza** - Dept. of Psychology**Thanujeni Pathman** - Dept. of Psychology**Christine Till** - Dept. of Psychology**Gary Turner** - Dept. of Psychology**Frances Wilkinson** - Dept. of Psychology

Liberal Arts & Professional Studies

**Jimmy Huang** - School of Information Technology**Tarmo Remmel** - Dept. of Geography

Lassonde School of Engineering

**Alidad Amirfazli** - Dept. of Mechanical Engineering**Aijun An** - Dept. of Electrical Engineering & Computer Science**Costas Armenakis** - Dept. of Earth & Space Science
and Engineering**Petros Faloutsos** - Dept. of Electrical Engineering &
Computer Science**Ebrahim Ghafar-Zadeh** - Dept. of Electrical Engineering
& Computer Science**Richard Hornsey** - Dept. of Electrical Engineering
& Computer Science**Hui Jiang** - Dept. of Electrical Engineering & Computer Science**Hossein Kassiri** - Dept. of Electrical Engineering &
Computer Science**Burton Ma** - Dept. of Electrical Engineering & Computer Science**Gunho Sohn** - Dept. of Earth & Space Science & Engineering**Nima Tabatabaei** - Dept. of Mechanical Engineering

Arts, Media, Performance, & Design

**Shital Desai** - Dept. of Design**David Gelb** - Dept. of Design**Jan Hadlaw** - Dept. of Design**Mark-David Hosale** - Dept. of Computational Arts**Janine Marchessault** - Dept. of Cinema & Media Arts**Doug Van Nort** - Dept. of Computational Arts**Joel Ong** - Dept. of Computational Arts**Ken Rogers** - Dept. of Cinema & Media Arts**Donald Sinclair** - Dept. of Computational Arts

VISTA OPPORTUNITIES

WHAT ARE THE BENEFITS OF BEING PART OF VISTA?



Become a member of an interdisciplinary research community across the research areas of health, science, engineering, humanities, & arts.



Work with over 50 industry partners offering opportunities for collaboration, internship, and career development.



Join an international network pushing the boundaries of vision research in North America, Europe, and Asia.



Collaborate on VISTA-funded research projects.



Participate in VISTA-funded events.



MASTER'S SCHOLARSHIPS

\$10,000 per year for a max of 2 years
2 competitions per year

If you are applying for a Master's program in vision research at York University and your chosen supervisor is a VISTA Core or Associate Researcher, you are eligible for a VISTA Master's Scholarship. This award, aimed at high-caliber students, is a top up in addition to standard York University funding.



PhD SCHOLARSHIPS

\$10,000 per year for a max of 4 years
2 competitions per year

New and current PhD students can apply for a VISTA PhD Scholarship if their supervisor is a VISTA Core or Associate Researcher. This award, aimed at high-caliber students, is a top up in addition to standard York University funding.



POST-DOCTORAL FELLOWS

\$55,000 per year for a max of 2 years
\$70,000 per year for Distinguished Post-Docs
2 competitions per year
Research allowance \$7,500 per year
Networking allowance \$1,000 per year

The VISTA Postdoctoral Award will provide financial support to high-caliber scholars conducting post-doctoral research that is aligned with the VISTA program under the supervision of a VISTA core member. The VISTA Distinguished Postdoctoral Fellowship will provide financial support to the highest calibre applicants.



TRAVEL AWARDS

\$7,500 for Trainees and Post-Doctoral Fellows
\$10,000 for Core & Associate Researchers

VISTA will support flight and accommodation costs for visiting scholars, students, and fellows to/from current VISTA partners. All visitors must be hosted by a VISTA Core Researcher.

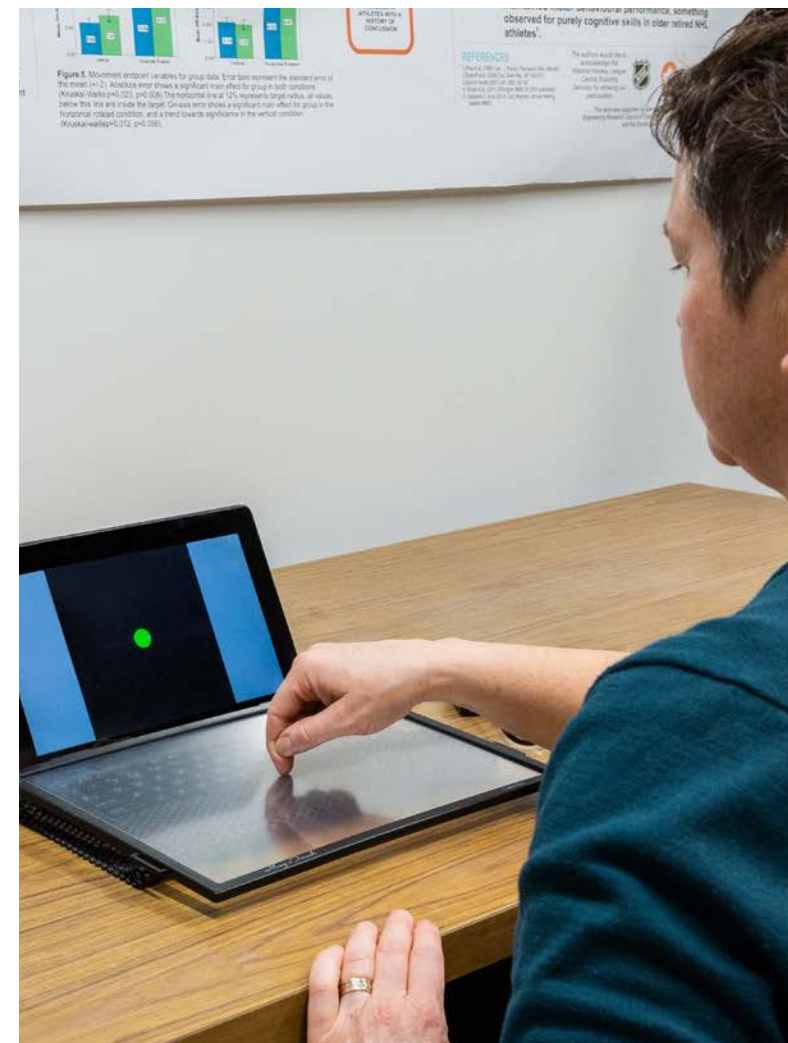
OUR STORIES

RESEARCH2REALITY VIDEO SERIES

VISTA collaborated with the not-for-profit organization Research2Reality to create 16 videos about vision research at York University. Showcasing eight VISTA Core members and their lab members and their work, the videos explain the interdisciplinary network between faculties and the importance of investment in Canadian research. Visit yorku.ca/vista/showcase to find out more!

MOBILITY ASSESSMENT TOOL (MATT)

Dr. Lauren Sergio, a VISTA Core Member, and her team developed a tool that assesses decline in mobility in aging patients. The Mobility Assessment Technology Tool (MATT) is a user-friendly, low-cost, non-invasive, computerized system that measures the gait or balance mobility of a patient. A product of the VISTA Research Grant, MATT incorporates dual camera video technologies and a laptop computer to run assessment algorithms to measure a patient's mobility based on the standard Tinetti kinesiology assessment tool. From their four-minute performance, mobility is assessed by their ability to sit, stand, turn around, walk and sit back down. Sergio and her team are in the process of finalizing the algorithms of the system by comparing its performance with independent clinician manual assessments. In addition, the system is also measured against Sergio's functional assessment tools in adults who have no clinical issues, have suffered concussion, or are in early-stage dementia. Validating the functionality of the pilot system and finalizing the user interface of this device will allow VISTA partner PhD Associates to advance a patent application and approach investors with a market-ready product. If successful, the first hospital installation of MATT will allow for tracking of the rehabilitation of out-patients. The aim is to market MATT as the mobility tracking tool of choice for medical professionals working with injured, ill, and recovering patients. This work will advance the field of computer vision-assisted medical assessment technology and will impact the health of Canadians through improvements in functional assessment, diagnosis and rehabilitation.





DROPLETLAB

Two of the most important properties of droplet surfaces are contact angle and surface tension. The traditional means for measuring these properties require expensive, bulky, and complex technology. VISTA Associate Professor Alidad Amirfazli and his team at the Surface Engineering and Instrumentation Lab (SEIL), are breaking this 30-year-old design mould. Using VISTA Prototyping funds, the engineering group has built a measurement instrument with smartphone technology that entirely circumvents the need for bulky and expensive fixtures and hardware. “This new and improved technology is a significant advancement in the field of surface science.” said Amirfazli. The technology introduces a contact angle and surface tension measurement instrument that is cost-efficient, compact and portable. The system also enables integrated internet connectivity, allowing for better document management and record keeping. In addition to its cost-effectiveness and portability, this smartphone-based instrument has been shown to match, and in some cases outperforms top-of-the-line traditional instruments.



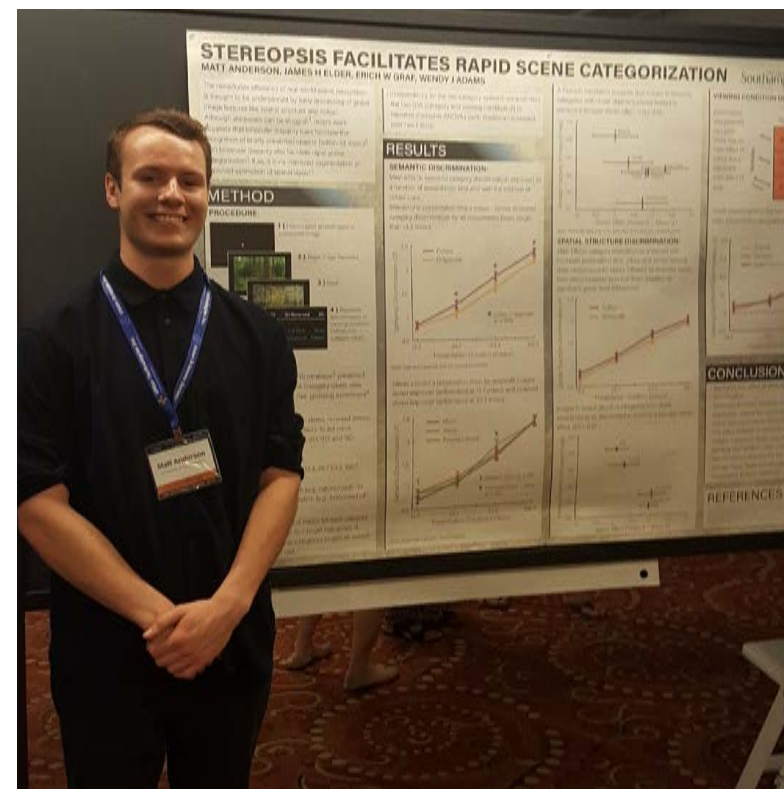
HIGH SENSITIVITY ROADSIDE DETECTION OF CANNABIS USE

VISTA Associate Member Nima Tabatabaei received a \$50,000 Prototyping Fund to develop a non-invasive roadside test for the detection of cannabis. Dr. Tabatabaei, a researcher in the Lassonde School of Engineering, is an expert in the design & development of thermal & optical imaging technologies for early disease diagnosis & screening. He is currently applying his deep technical expertise to detect the principal psychoactive substance of cannabis (THC) in saliva. Current roadside screening tests are incapable of detecting low concentrations of THC in saliva due to poor detection sensitivity and specificity. With the legalization of cannabis in Canada, there is a significant & urgent need for rapid & sensitive roadside screening for impaired driving due to cannabis use.



VISION SCIENCE MEETS THE ARTS

VISTA Master’s Scholarship winner Sarah Vollmer is the first digital arts and computer science trainee in the VISTA program. Her project supervisor is VISTA Core Member Graham Wakefield. She explains: “Through my graduate studies in Digital Media here at York, I look at the boundary between 'virtual-reality' and 'reality'. I consider ideas that can be augmented by, and driven with, artificial intelligence models such that the question 'what is real?' is intensified and made tangible. Of particular interest is the creative medium that allows visual-haptics to coincide 'virtually'. The VISTA paradigm permits such an exploratory designation.”



MATTHEW ANDERSON, TRAVEL AWARDEE (FROM UNIVERSITY OF SOUTHAMPTON)

My visit to York University was crucial for the progression of this research project for a number of reasons. Foremost, close communication with VISTA Core researcher Laurie Wilcox and her lab was instrumental in developing a good experimental design, a workable hypothesis and interpretable results. I received excellent feedback at various stages of the research process and benefited from using state-of-the-art lab equipment. Importantly, this work serves as a strong foundation for a further set of experiments. Laurie and I have agreed to continue to collaborate. In future work, we aim to investigate the computation underlying this grouping process and examine the magnitude of this depth-bias effect. Finally, I have been thoroughly impressed with the scale and impact of the work happening at VISTA. Given the opportunity, I would certainly consider visiting again to collaborate on related research projects.



DENISE HENRIQUES, TRAVEL AWARDEE (TO: THE GERMAN CENTRE FOR VERTIGO AND BALANCE DISORDERS)

Dr. Denise Henriques, VISTA Training Committee Lead and Core Researcher, received a VISTA Travel Award to collaborate with German researchers in the field of sensorimotor function. Her visit to the German Center for Vertigo and Balance Disorders in Munich, allowed her to develop collaborations with Thomas Brandt (Director) in their investigation of multisensory integration and sensorimotor in patients with cerebellar damage. Their partnership and findings aim to better understand both the neural basis for deficits in visuomotor control and learning and investigate possible methods for overcoming such deficits.



VISION BASED DIVER ROBOT INTERACTIONS AT DEPTH

Lassonde School of Engineering PhD student Robert Codd-Downey received a VISTA Doctoral Scholarship in early 2017. His research supervised by VISTA Core Member Michael Jenkin, focuses on 'Vision based diver robot interactions at depth', a project funded by NSERC's Canadian Field Robotics Network (NCFRN). Codd-Downey's project explores how communication can be improved between divers and robotic assistants underwater. He uses light-based (LiFi) communication methods to control an underwater robot either remotely or by a nearby diver. The project presents an opportunity to develop a marketable product that assists robot-diver interactions underwater. The completion of this project and development of this new technology led Codd-Downey to receive an award for best demonstration at the June 2018 Space Vision and Advanced Robotics Workshop (SVAR).



NON-INVASIVE NEUROMODULATION

VISTA core member, Dr. Jennifer Steeves, received a VISTA Research Grant worth \$50,000, to develop a method for evaluating biomarkers of transcranial magnetic stimulation (TMS) with magnetic resonance spectroscopy (MRS), a type of magnetic resonance imaging (MRI). TMS is a form of non-invasive neuromodulation where a brief magnetic pulse is applied to a precise area of the brain to induce neural noise and alter the underlying neural tissue function. It is used clinically to treat depression however, the mechanisms for how TMS acts on the brain and how long these effects last are largely unknown. This research will assess the relationship between the dose of neuromodulation and the duration of TMS effects in healthy individuals. Dr. Steeves and her team have found that on one hand a single session of TMS alters global brain function but on the other hand, it takes several repeated sessions of TMS to alter the neurotransmitters in the brain. These findings suggest critical windows of plasticity for different brain biomarkers. The findings from this work will inform and guide policy for non-invasive neuromodulation use in clinical and laboratory settings. Dr. Steeves was invited to speak at a symposium on neuromodulation about this work at ECVF in Trieste in August 2018. They have presented data at the annual meeting of the Vision Sciences Society and this work is currently under review in the journal Brain Stimulation.



VISTA IN THE NEWS

EREZ FREUD PUBLISHES IN THE JOURNAL OF NEUROSCIENCE

“Temporal dynamics of shape processing differentiate contributions of dorsal and ventral visual pathways.”



LAURENCE HARRIS, MICHAEL JENKIN AND ROBERT ALLISON ON THE CANADIAN SPACE AGENCY VECTION PROJECT

It's fitting that one of the first experiments to be conducted by Canada's first astronaut in space since 2013 — was a research project designed by a Canadian university. On December 3rd, 2018, David Saint-Jacques, 48, blasted off aboard a Soyuz spacecraft from Kazakhstan headed for the International Space Station.



“DEEPPAKES ARE COMING. WE CAN NO LONGER BELIEVE WHAT WE SEE.”

Regina Rini writes for the New York Times.





JUNE 2018

VISTA INNOVATION DAY

A full day event where 150 researchers, 75 industry participants, and 25 representatives from government and the not-for-profit sector were brought together for interaction, engagement, and learning opportunities. York researchers had the opportunity to learn about industry interests and challenges in vision sciences, and to identify collaborative research projects with partners across all sectors.



OCTOBER 2018

TRAINEE AWARDS

During a special event on Oct. 12, VISTA (Vision: Science to Applications) program celebrated its 2018 graduate scholarships and postdoctoral fellowships. In a reception following a keynote lecture, nine master's scholarships, 12 doctoral scholarships and three postdoctoral fellowships were awarded by the funding program to trainees in the field of vision research.



FEBRUARY 2019

RETREAT

Our retreat brought together VISTA members and graduate trainees to celebrate VISTA's successes. The event created an opportunity to introduce new faculty members and discuss updates on VISTA funded projects. The day was divided into speaker sessions, poster sessions, and ended with a poster prize ceremony.



JUNE 2019

INTERNATIONAL CONFERENCE

A bi-annual conference held every two years, co-organized with the Centre for Vision Research (CVR). The conference incorporated three fields of research: human vision, computer/computational vision and visual neuroscience.

TRAINEE COMMUNITY



CAITLIN MULLIN

“ Trainee Representative, VISTA Leadership Committee & VISTA Distinguished Post-Doctoral Fellow, Psychology, Faculty of Health – “My goal is to connect all VISTA trainees to the amazing awards and opportunities that are available to them, as well as connecting them to each other. This is the first step towards fostering a true sense of community among young researchers so that we can work together and support each other on our way to achieving great advances in vision science applications.”

”



SAM CLARKE

“ VISTA Post-Doctoral Fellow, Philosophy, Faculty of LA&PS – “The research focus of my VISTA fellowship is enabling me to seek progress on broad and ambitious issues in perception science, and the philosophy thereof. Better still, it is enabling me to pursue this research in the company of leading researchers from related fields. In my research, I seek to understand the informational resources that visual systems use to inform their computations and the structure (or format) our visual representations possess.”

”



GAELLE LUABEYA

“ I am a Master's student working with Dr. Doug Crawford. I am using a visual memory-guided task to investigate the influence of gaze location and saccades on hand orientation. In the future, I hope to apply this to testing patient populations. VISTA provides great opportunities for students to engage in research collaborations and offers multiple workshops which are always very informative. In addition to the benefits that VISTA offers, the York Centre for Vision Research organizes conferences and seminars, frequently inviting global researchers for talks. I am grateful to be part of such a dynamic community.”

”



ABHIJITH PUNNAPPURATH

“ VISTA Post-Doctoral Fellow, Department of EECS - “With the click of a button, we can capture an image. Concealed behind that click are a series of operations performed onboard the camera, collectively referred to as the in-camera imaging pipeline, that convert the light falling on the sensor to the visually-pleasing output image produced by the camera. The goal of my research is to propose practical mechanisms to improve the accuracy of various computer vision tasks either by minimally modifying the existing camera pipeline, or by leveraging data generated by intermediate stages.”

”



LINDSEY FRASER

“ VISTA Travel Award winner, PhD, Psychology, Faculty of Health – “I received the VISTA Travel Award in Fall 2018 and was able to travel to Germany for a few weeks to work with a collaborator at the University of Giessen. We set up a new experiment on tactile suppression. It was an awesome opportunity.”

”

OUR PARTNERS





**CANADA
FIRST**
RESEARCH
EXCELLENCE
FUND

**APOGÉE
CANADA**
FONDS
D'EXCELLENCE
EN RECHERCHE

YORK
UNIVERSITÉ
UNIVERSITY 