

Department of Ophthalmology & Visual Sciences

ANNUAL REPORT 2022-2023



Cover photo courtesy of Dr. Rishi Gupta

Description of photo: Fundus autofluorescence demonstrates a “cracked-mud” appearance of mostly hypoautofluorescence, with a fringe of hyperautofluorescence surrounding the scalloped hypoautofluorescent margin. (*M.E. Seamone et al. Diagnostic and Therapeutic Challenges, Edited by H. R. McDonald. Retina, The Journal Of Retinal and Vitreous Diseases, 2018, Volume 38, Number 3*)

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Message from Department Head



Lesya Shuba, MD, PhD, FRCSC Interim Head and Chief

Department of Ophthalmology & Visual Sciences
Dalhousie University & Nova Scotia Health Authority

Dear members and friends of the Department of Ophthalmology & Visual Sciences,

I want to thank you all for another successful and productive year.

I invite you to read the Annual Report with the details of the many accomplishments of the members of the DOVS. I would like, however, to highlight few specific achievements from 2022-23.

Emerging from the pandemic, we were happy to hold several first in-person events since 2019: Graduation dinner; Research Day; Atlantic Eye Symposium; and, The Form and Function in Ocular Disease Symposium. It was a great feeling to return to normality and experience again the power of in-person events.

We are pleased to report that clinical and surgical volumes in ophthalmology for 2022-23 continue to grow. Thanks to the support from partners in government, Nova Scotia Health and our own faculty members, the Department was able to increase the volumes of publicly funded cataract surgeries performed at the Halifax Vision Surgical Centre. This also allowed us to free up extra surgical time at the VG hospital for subspecialties in ophthalmology. We continue to be grateful to Dr. Dan Belliveau for his dedication and resourcefulness in developing the concept and providing physical space for the Halifax Vision Surgical Centre.

At the end of 2023 the DOVS is planning to open an ophthalmology clinic at the new community outpatient centre in Bayer's Lake. This new clinic will be state of the art, allowing us to provide care to patients with increased efficiency and improved access to care.

Both post-graduate and undergraduate education programs in our Department are thriving. I would like to thank Drs. Dahrab and Mishra for their leaderships. Please read their reports for the details on our education programs and join me in congratulating all our trainees and teachers, but especially this year's winners of several awards!

Under the leadership of Dr. Chauhan, members of the DOVS continue to successfully contribute to the Research mandate of the Department. I invite you to explore our achievements in various research areas in the Annual Report.

I am excited to welcome our new department members, Dr. Danielle Cadieux (Cornea and External Diseases) and Dr. Wesley Chan (Neuro-ophthalmology).

The academic and clinical missions of the DOVS are supported by generous partnerships with foundations and private groups. We are in an enviable position to have excellent endowments, especially the Mathers Endowment. We are grateful to all our supporters.

Thank you for your hard work and dedication.

MISSION



The Department of Ophthalmology & Visual Sciences provides high quality ophthalmological care for the population of Nova Scotia and Atlantic Canada, delivers excellent medical education programs and conducts internationally recognized research in a collaborative and innovative environment.

VISION



To lead Canadian ophthalmology in patient care, education and research.

VALUES



- Commitment to excellence
- Transparency, accountability, fiscal and social responsibility
- Innovation and a spirit of inquiry
- Professionalism and inclusivity
- Collaboration and community engagement

Who We Are & What We Do

Where We Deliver Care

Eye Care Centre Visits	48,004
Cobequid Clinic	2,163
IWK Ophthalmology	7,485
Total Adult Surgeries	10,108
HVSC Surgeries <small>* included in total above</small>	2,552
Total IWK Surgeries	218

Who Delivers Care

Ophthalmologists	24
Nursing & Technical Staff	70
Administrative Staff	30
Research Coordinators	9.5

Surgical Cases by Subspecialty

Cataracts (incl. HVSC)	6,338
Cornea	193
Glaucoma	547
Orbit/Plastics	832
Other	0
Paediatrics	218
Retinal Surgery	1,854
Adult Strabismus	126

Research

35 Invited Presentations

33 Peer Reviewed Manuscripts

\$2.20M Continuing Research Grants & Contracts

\$283K New Research Grants & Contracts

\$2.49M Total Research Funding



Who We Are & What We Do

Education



Postgraduate Education

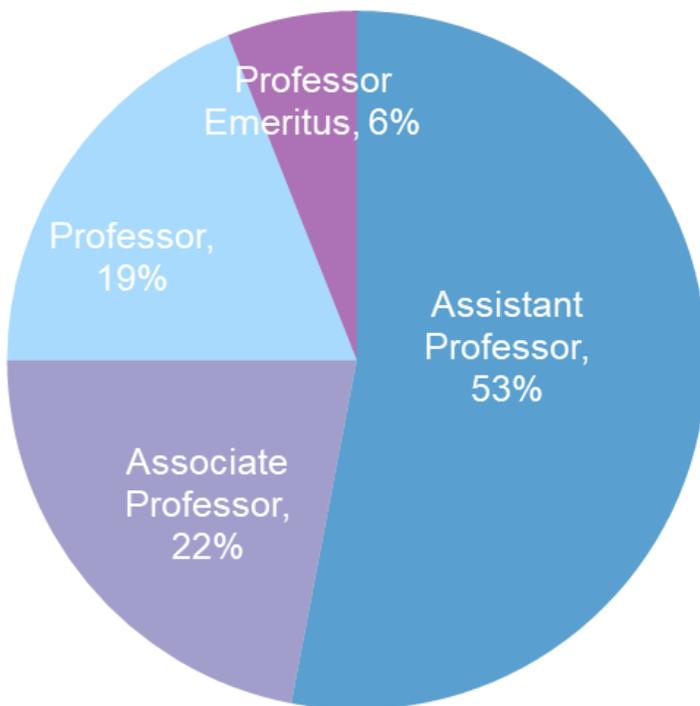
Residents PGY2-5	11
Resident PGY1	2
Fellow - Clinical Glaucoma	1
Fellow - Paediatrics	1
Postdoctoral Fellows	3
Clinical Vision Sciences	12

Undergraduate Education

MED 4 Elective students	6
Dalhousie Medical 1 & 2 student electives	8

Professional Development

Grand Rounds	27
Conferences	4
Journal Clubs	2



Our Faculty

Dr. Curtis Archibald, Assistant Professor
 Dr. Bashar Bata, Assistant Professor
 Dr. Dan Belliveau, Assistant Professor
 Dr. Danielle Cadieux, Assistant Professor
 Dr. Wesley Chan, Assistant Professor
 Dr. Balwantray Chauhan, Professor
 Dr. Alan Cruess, Professor
 Dr. Mishari Dahrab, Assistant Professor
 Dr. John Dickinson, Associate Professor
 Dr. Brennan Eadie, Assistant Professor
 Dr. Carolina Francisconi, Assistant Professor
 Dr. Paul Freund, Assistant Professor
 Dr. Stan George, Associate Professor
 Dr. Rishi Gupta, Assistant Professor
 Dr. Ahsen Hussain, Associate Professor
 Dr. G. Robert La Roche, Professor
 Dr. Darrell Lewis, Assistant Professor
 Dr. Anu Mishra, Assistant Professor
 Dr. Jeremy Murphy, Assistant Professor
 Dr. Marcelo Nicolela, Professor & Head
 Dr. Daniel O'Brien, Associate Professor
 Dr. Andrew Orr, Associate Professor
 Dr. Veronique Promelle, Assistant Professor
 Dr. Paul Rafuse, Associate Professor
 Dr. Johane Robitaille, Professor
 Dr. Arif Samad, Associate Professor
 Dr. Christopher Seamone, Associate Professor
 Dr. Lesya Shuba, Professor
 Dr. Corey Smith, Assistant Professor
 Dr. Alex Tan, Assistant Professor
 Dr. Michael Thorne, Assistant Professor
 Dr. Francois Tremblay, Professor
 Dr. Jayme Vianna, Assistant Professor
 Dr. Amr Zaki, Assistant Professor

Joint Appointments

Dr. Melina Agosto (Physiology and Biophysics)
 Dr. William Baldrige (Anatomy & Neurobiology)

Emeritus Appointments

Dr. Raymond LeBlanc, Professor Emeritus
 Dr. Charles Maxner, Professor Emeritus

Cross Appointments

Dr. David Clarke (Surgery)
 Dr. Patrice Cote (Biology)
 Dr. Melanie Kelly (Pharmacology)
 Dr. Emad Massoud (Surgery)
 Dr. Paul Neumann (Anatomy & Neurobiology)
 Dr. Sylvia Pasternak (Pathology)
 Dr. David Persaud (Health Services Administration)
 Dr. David Westwood (Health & Human Performance)

Distributed Learning Faculty

Dr. Rani Al Karmi, Assistant Professor
 Dr. Zach Ashkenazy, Lecturer
 Dr. William Best, Assistant Professor
 Dr. Andrew Boswall, Assistant Professor
 Dr. Paul Cheevers, Assistant Professor
 Dr. David Comstock, Assistant Professor
 Dr. Alex de Saint-Sardos, Assistant Professor
 Dr. Erin Demmings, Assistant Professor
 Dr. Edward Doherty, Assistant Professor
 Dr. Jennifer Gao, Assistant Professor
 Dr. Abbas Haider, Assistant Professor
 Dr. Kenneth Hammel, Lecturer
 Dr. Mustafa Kapasi, Assistant Professor
 Dr. Alejandro Lichtinger, Assistant Professor
 Dr. Colin Mann, Assistant Professor
 Dr. Kristine Mayer, Assistant Professor
 Dr. Rajender Mohandas, Assistant Professor
 Dr. Mohamed Mongy, Assistant Professor
 Dr. Kenneth Roberts, Assistant Professor
 Dr. Robert Scott, Assistant Professor
 Dr. Houfar Sekhavart, Assistant Professor
 Dr. Banakesari Shetty, Assistant Professor
 Dr. Nir Shoham-Hazon, Assistant Professor
 Dr. Iva Smrz, Assistant Professor
 Dr. Jeffrey Steeves, Assistant Professor
 Dr. J. Christopher Symonds, Assistant Professor
 Dr. Vicki Taylor, Assistant Professor
 Dr. Hila Zommer-Sykes, Assistant Professor

Adjunct Appointments

Dr. Dao-Yi Yu, Adjunct Professor
 Dr. Sharon Bentley, Assistant Adjunct Professor



Dr. Danielle Cadieux joined the Department of Ophthalmology & Visual Sciences, Dalhousie University January 1, 2023.

Dr. Cadieux is a hospital-based Cornea & External Diseases specialist/surgeon. She completed an undergraduate degree in Human Kinetics at the University of Guelph, followed by her medical degree at Western University in London, Ontario. Dr. Cadieux is no stranger to us, having completed her residency in our Department in Halifax, graduating in 2021. During this time she completed a concurrent Master of Health Professions Education from the School of Health Professions Education at Maastricht University. Dr. Cadieux has just completed a Cornea and External Diseases fellowship at the Royal Victorian Eye and Ear Hospital in Melbourne, Australia.

Dani Cadieux, MD, MHPE, FRCSC

Assistant Professor
Cornea & Comprehensive

Dr. Wesley Chan joined the Department of Ophthalmology & Visual Sciences, Dalhousie University on November 15, 2022. She is working in our Adult Neuro-Ophthalmology service and at the Eye Care Centre – VG Hospital

Dr. Chan completed a Master of Science in Neuroscience at the Université de Montréal in 2012 and went on to complete her medical education at the University of Calgary in 2015. She came to Halifax and completed her Ophthalmology Residency at Dalhousie University in 2020, followed by a Fellowship in Neuro-Ophthalmology at Emory University School of Medicine in Atlanta, Georgia in 2021.



Wesley Chan, MSc, MD, FRCSC

Assistant Professor
Neuro-ophthalmology

Promotions

Congratulations to Dr. Lesya Shuba on her promotion to Professor. Dr. Shuba joined the department as a glaucoma subspecialist in 2006. The DOVS Promotions Committee was impressed with the quality of the application, including the teaching dossier and associated documentation. It was a pleasure to support the application and forward it on for review and support by the Faculty of Medicine. Dr. Shuba's promotion will be effective July 1, 2023.



Lesya Shuba, MD, PhD, FRCSC
Professor
Glaucoma

DMRF New Faculty Grant Award

We are pleased to announce that Dr. Corey Smith is the recipient of the Department of Ophthalmology and Visual Sciences New Faculty Research Grant.

Dr. Smith is leading a project entitled "Identification of Imaging Biomarkers for Early Detection of Age-Related Macular Degeneration". The purpose of this project is to use ophthalmic imaging technology (optical coherence tomography (OCT) and microperimetry) to identify early signs of age-related macular degeneration (AMD). This longitudinal study will use high-resolution imaging protocols and 3D data analysis to measure localized structural (imaging biomarker) and functional (microperimetry) changes in the retina and provide new information about early-stage AMD with insight into what starts advanced disease in some individuals, but not others. This research is vitally important to better understand AMD pathogenesis and help determine which patients will need treatment. Dr. Smith hopes that his research will ensure existing clinical imaging devices are used to their full potential for patient care by developing clinically relevant protocols that can be used by ophthalmologists to identify imaging biomarkers predictive of AMD.



Corey Smith, PhD
Assistant Professor
QEII Foundation Scholar in Retina Research

Awards & Accolades

Research Day Award Winners, April 20, 2022

Resident Award: André Pollmann “Graft dislocation following Descemet stripping automated endothelial keratoplasty: a comparative cohort analysis of Optisol GS and organ culture media preserved corneas”

Trainee Award: Delaney Henderson “Longitudinal characterization of retinal ganglion cell function in models of optic nerve damage using viral delivery”

Blitz Award: Ryan Matthews “In vivo imaging in mice following a high IOP model of retinal ischemia”



Pictured above: Dr. Wai-Ching Lam presenting Research Day Awards

American Society of Retina Specialists (ASRS) 40th Annual Meeting 2022 Film Festival Award

Best of Show: Dr. Rishi Gupta “Heavy Metal: XL Edition”



Left to right: Dr. Marcelo Nicolela, Dr. Rishi Gupta, Dr. Chris Seamone



Best Research Proposal Award

Bonnie He, BSc, MD, completed her undergrad at McGill, medical school at UBC and is currently a PGY2 ophthalmology resident at Dalhousie University. She is the recipient of a \$20,000 grant from the Glaucoma Research Society of Canada for her project with Dr. Brennan Eadie looking at the risk of glaucoma with bisphosphonate use. This project has received multiple recognitions at the local, national, and international level, including Best Work by a PGY1-2 resident from Dalhousie University, Best Research Proposal Award from the Canadian Ophthalmology Society, and Best Paper from the American Society of Cataract and Refractive Surgery.

Mathers Awards

Established in 2014, the Mathers Scholarships permit the Department to support students at the Undergraduate, Masters, PhD and Fellowship levels and are building our capacity year over year.



The Dr. R. Evatt and Rita Mathers Trainee Scholarships in Ophthalmology & Visual Sciences are enabled by a visionary endowment from the estate of the late Peggy St. George to honour her step parents pictured above.

2022 Winners

The Masters in Clinical Vision Science scholarship is awarded to Kathleen (Katie) MacLellan.

Katie's research will be supervised by Dr. Leah Walsh and Dr. Robert LaRoche. She will study the relationship between depth perception and strabismus surgery.



Previous research has found that in simulated surgical procedures inside the eye, people with poor depth perception tend to have slower or worse overall performance on surgical tasks than those with normal depth perception. This study will investigate if a similar relationship exists between poor depth perception and surgical skill for surgeries performed outside of the eye, like strabismus surgery. This will be accomplished by comparing surgical performance between individuals with good depth perception and those with poor or absent depth perception on a virtual reality surgical task involving the muscles on the eye's surface. This work will help in understanding if good depth perception is necessary for performing strabismus surgery.

Dr. Ryo Tomita is the recipient of the Research Fellowship in Ophthalmology and Visual Sciences.

Dr. Tomita will be working under the supervision of Dr. Balwantray Chauhan and will be investigating the use of optical coherence tomography angiography (OCTA) for use in detecting worsening in severe glaucoma. He will compare the detection rates of worsening disease in patients with glaucoma who have been tested regularly and frequently over several years with visual field testing, OCT and OCTA. This research could lead to methods to detect the progression of severe glaucoma, provide indications for treatment change, and potentially reduce the impact of visual disability.



The PhD in Vision Science scholarship is awarded to Delaney Henderson.

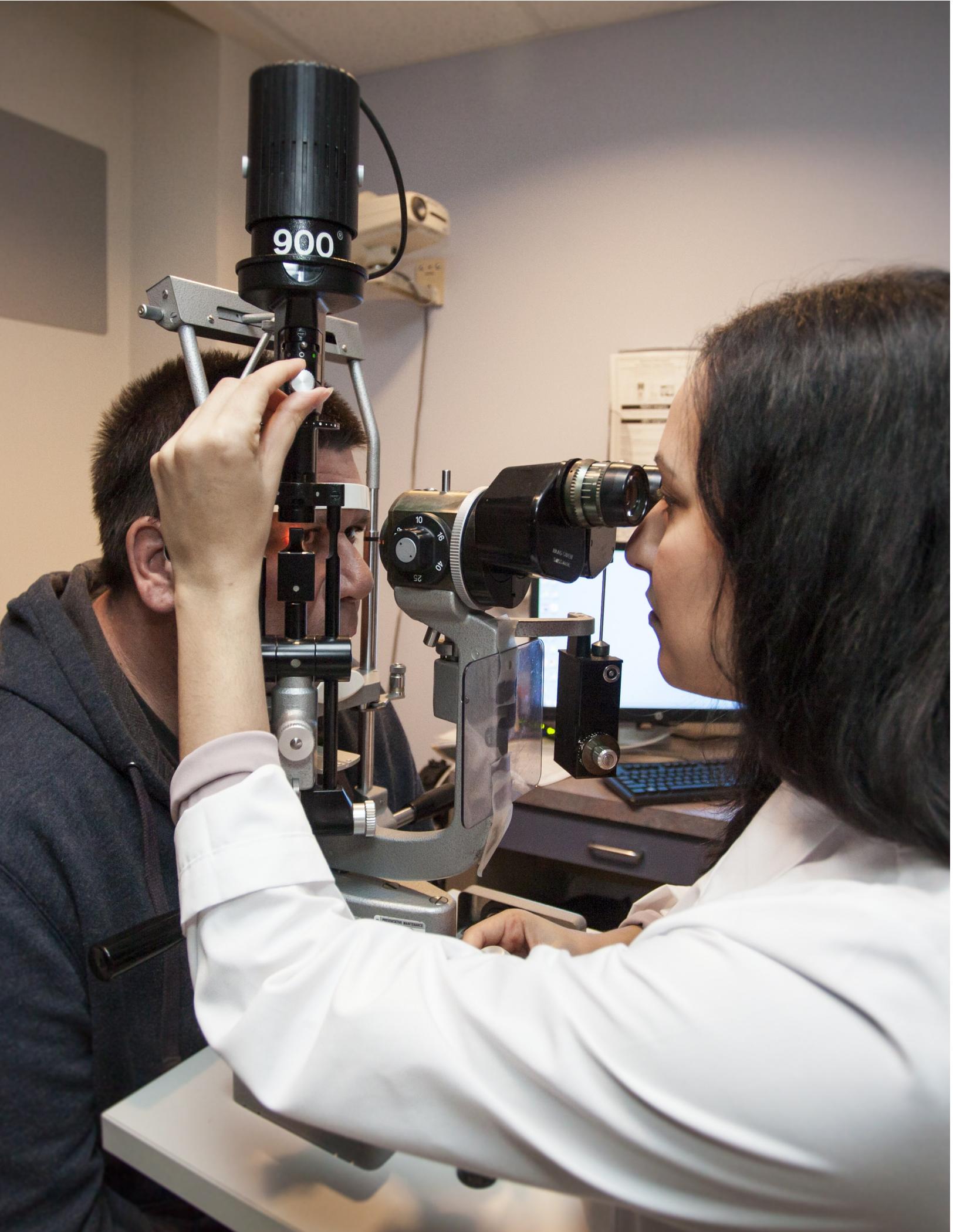
Delaney, under the supervision of Dr. Balwantray Chauhan will study retinal ganglion cells (RGCs) which are the cells responsible for sending visual signals from the eye to the brain. The aim of the study is to track the functional behavior of individual RGCs before and after injury such as models of experimental glaucoma to characterize the loss of function over time in a living animal. Results of this study will increase the understanding of the properties of cellular loss of function and the safety of this technique so that it can be used as a clinical diagnostic tool in the future.



Ryan Matthews is the recipient of the Masters in Vision Science award.

Ryan, under the direction of Dr. Balwantray Chauhan, will study the blood vessels supplying the retina in an animal model. Several sight-threatening diseases share a common feature where the blood vessels that feed oxygen and nutrients to the retina, are blocked for a period. As a result, retinal neurons begin to die, leading to partial or complete vision loss. His research will experimentally recreate the short-term blood flow blockage injury and give a unique opportunity to follow and image changes in the retinal vessel layers and retinal cell loss, over time. If this work is successful, a better understanding will be gained of the long-term consequences for retinal blood flow and retinal cell loss in disease states.

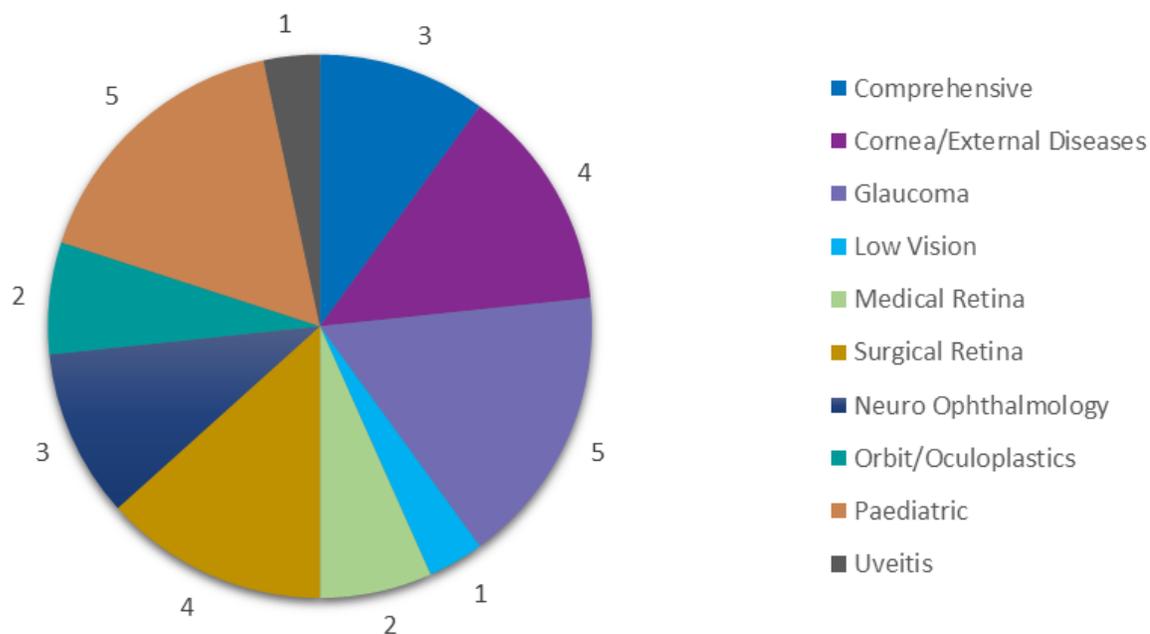


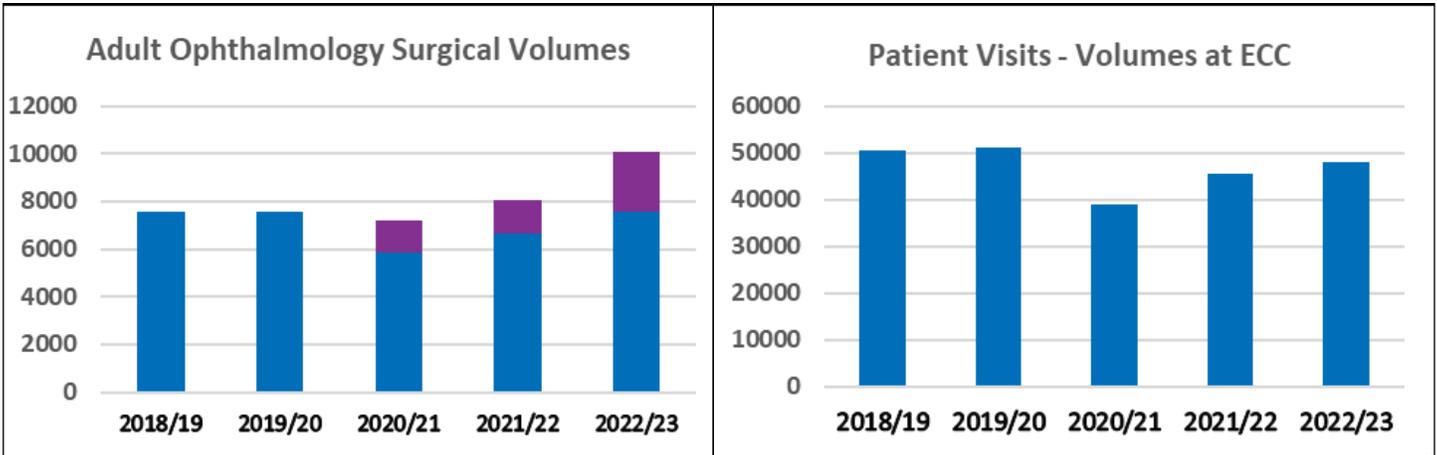


The clinical services delivered by the Department occur at the Eye Care Centre (QEII Health Sciences Centre - VG site – Nova Scotia Health Authority) for adult ophthalmology, at the paediatric ophthalmology clinic located at the IWK Health Centre, at the ophthalmology clinic located at the Cobequid Community Centre (both adult and paediatric services), Halifax Vision Surgical Centre, and in all private offices, where community based faculty members provide most of their ambulatory clinical care.

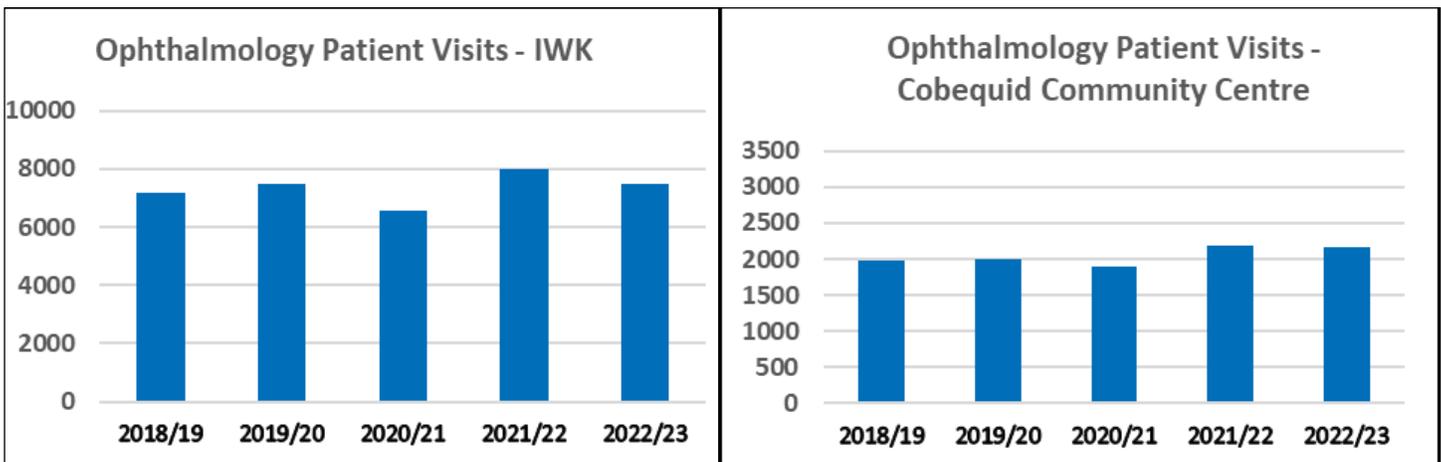


FACULTY SUBSPECIALITY PROFILE (NUMBERS)

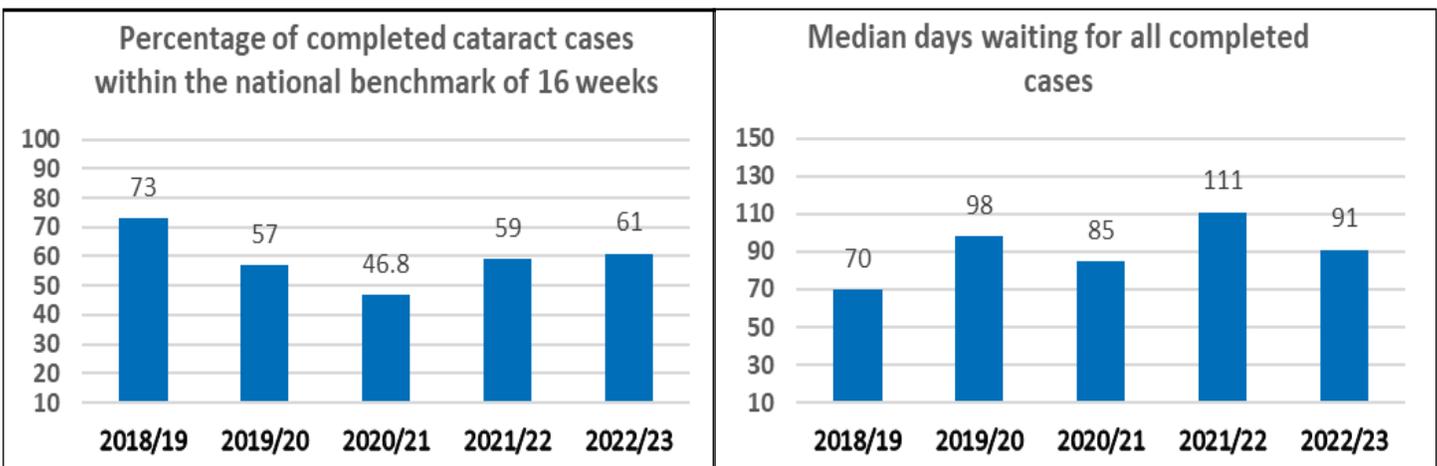




Clinical service volumes in ophthalmology for 2022-23 continue on a growing trend and have surpassed pre-COVID-19 global pandemic volumes. The purple volume comprises 2,552 cataracts performed at Halifax Vision Surgical Centre.



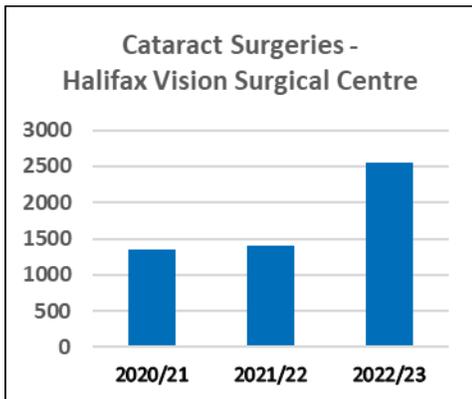
Clinical volumes at the IWK and Cobequid Community Centre continue to be relatively steady



Halifax Vision Surgical Centre

Thanks to support from partners in government, Nova Scotia Health and our own faculty members, the Department was able to continue publicly funded cataract surgeries at the Halifax Vision Surgical Centre. The program launched in October 2020. Our surgeons delivered 2,552 cataract cases by end of March 2023, an increase of 1,202 cases over the 2021-22 fiscal year. The program will continue and expand into fiscal 2024.

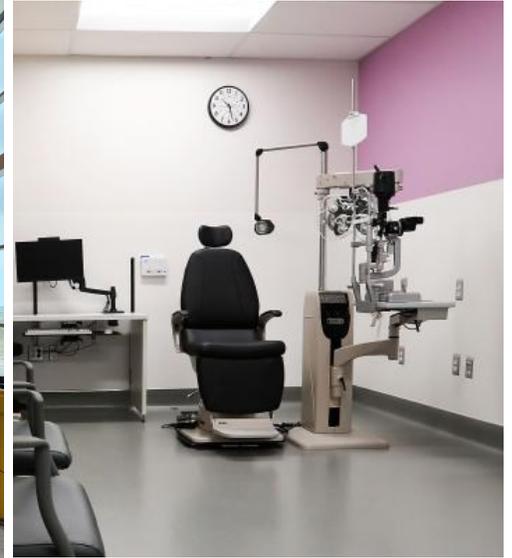
We continue to be grateful to Dr. Dan Belliveau for his dedication and resourcefulness in developing the concept and providing physical space for the facility.



New equipment for the expanded HVSC

Bayer's Lake Community Outpatient Centre

The DOVS will open an ophthalmology clinic at the new community outpatient centre being built in Bayer's Lake and is on track to be occupied and operational by the end of 2023. This new clinic will have state of the art examining rooms and equipment, allowing us to provide care to patients closer to home, in a facility purposely built with increased efficiency.





EYESI
eye safety simulator

EYESI



Mishari Dahrab, MD, PhD, FRCSC
Assistant Professor
 Director, Postgraduate Medical Education

We did it! In Person and Live, we all got together to celebrate the end of the 2021-2022 academic year for Dalhousie University's Ophthalmology Residency Program on June 3rd. That evening was filled with an extraordinary amount of admiration and pride on the accomplishments of our graduating residents: Dr. George Talany and Dr. Eri Celso. They were an inseparable dynamic duo that remained together even in fellowship. Both heading to the beautiful city of Montreal; Dr. Talany for a Corneal Fellowship, while Dr. Celso for a Uveitis Fellowship. We also celebrate our solo fellow for that year; Dr. Mathew Palakkamanil on completing his Glaucoma Fellowship. We went on to welcoming Dr. Rodolfo Bonatti as the in-coming Glaucoma fellow and Dr. Michal Blau-Most as the Pediatric Ophthalmology fellow. It was a very enjoyable academic year, and we wished our graduates further successes to come.

Having two spectacular residents leaving us is never easy, but we do lessen the pain by welcoming two bright and energetic stars. We welcomed two of the best medical school graduates Dalhousie University has to offer to our program; Dr. Neetin Prabhu and Dr. Freddy Lee. We wish them all inspirational lives and careers to come.



Pictured above are the graduating residents of 2022, Drs. George Talany and Eri Celso



Pictured above are Dr. Lesya Shuba and Glaucoma Fellow, Dr. Mathew Palakkamanil



Anuradha Mishra, MD, MEd, FRCSC

**Assistant Dean Skilled Clinician & Interprofessional Education
Assistant Professor**

Director, Undergraduate Medical Education Ophthalmology

We had another great academic year with UGME. We have increased our footprint in the core curriculum and have introduced a new lecture in the Skilled Clinician Program. We had successful Med 2 Ophthalmology Evenings at both DMNS and DMNB. Thank you to our department members including both staff and residents who participated. We also welcomed Dr. Erin Demmings as the new ophthalmology component head for DMNB.

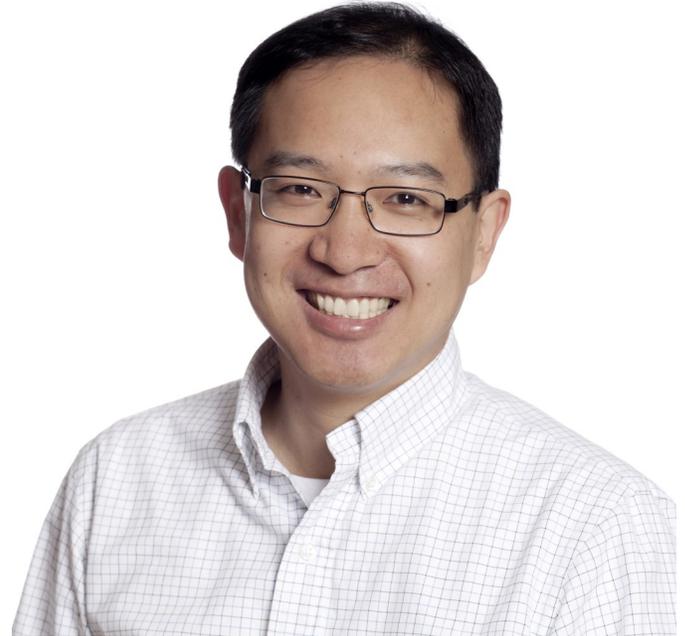
We continued to have a robust elective program as students from across Canada were able to resume in person electives. This led to a busy fall with many Dal and visiting elective students coming to spend time in our department.

In the spring our department participated again in the Dalhousie Pre-Resident Exploration Program. As part of this program we ran a successful half day workshop and had 40 students come and spend a half day in our clinics and ORs over a two week period.

We continue to plan to try and grow the ophthalmology curriculum in the pre-clerkship years and planning has begun for some new initiatives. Thank you to all the staff and residents that support the undergraduate program.

Award Winning Educators

Surgical Teaching Award – 2022 recipient Dr. Alex Tan



This annual award recognizes one staff physician's outstanding contributions to the surgical education of ophthalmology residents. This honour is determined by the ophthalmology resident group, which nominates and then chooses the recipient each year.

Resident nominations highlighted Dr. Tan's teaching excellence in several areas. Residents felt that few surgeons match his dedication and mentorship in the operating room. Dr. Tan's encouragement during difficult cases and ability to handle complications with comfort makes performing surgery under his direction challenging and fun at the same time. Teaching regarding pre-operative evaluation and considerations for intraocular lenses in different cases was especially well received. Furthermore, Dr. Tan's positive feedback is very encouraging for the progression of the residents surgical skills. Because of his surgical expertise, patience, and willingness to educate, residents at all levels of training find Dr. Tan's surgical instructions irreplaceable.

On behalf of all of the ophthalmology residents, we thank Dr. Tan for his dedication to education and congratulate him on receiving this deserving honour. As a symbol of gratitude, Dr. Tan's name has been added to a commemorative plaque, which celebrates the annual winners of our ophthalmology teaching awards.



Clinical Teaching Award – 2022
recipient Dr. Ahsen Hussain

This annual award recognizes one staff physician's outstanding contributions to the clinical education of ophthalmology residents. This honour is decided by the ophthalmology resident group, which nominates and then chooses the recipient each year.

The residents felt that Dr. Hussain's dedication and contribution to their clinical teaching goes above and beyond the call of duty. His teaching is comprehensive and thoughtful, with Dr. Hussain's feedback leaving the residents wanting to do better.

On behalf of all of the ophthalmology residents, we thank Dr. Hussain for his dedication to education and congratulate him on receiving this deserving honour. As a symbol of gratitude, Dr. Hussain's name has been added to a commemorative plaque, which celebrates the annual winners of our ophthalmology teaching awards.

Grand Rounds

Apr 6, 22	Dr. Rami Darwich	Turning Coats
Apr 13, 22	Dr. Mathew Palakkamanil	An Rx for Meditation? - The role of psychological stress in glaucoma
Apr 27, 22	Larissa Derzko-Dzulynsky*	Imaging in Management of Uveitis
May 11, 22	Dr. Harry Dang	Updates on the management of pigment epithelial detachments
May 18, 22	Dr. Veronique Promelle	Too late! When children present with cataract at diagnosis of uveitis
May 25, 22	Dr. Burt Kushner*	Care of the Patient — What I Have Learned From 45 Years of Practice
Sep 14, 22	Dr. Devin Betsch	Eyemergency medicine and Preyemary care: a closer look at Ophthalmology in frontline healthcare
Sep 21, 22	Dr. Rishi Gupta	The Notorious P.E.D. (An 'A to Z' on pigment epithelial detachments)
Sep 28, 22	Dr. André Pollmann	An update on management strategies for neurotrophic keratitis and persistent epithelial defects
Oct 5, 22	Dr. Harry Dang	The dead bag syndrome: A rare cause of late spontaneous intraocular lens dislocation
Oct 12, 22	Dr. Jeff Dahn	The role of energy storage in the war on climate change
Oct 19, 22	Dr. Ahsen Hussain	Pursuing the 'Holy Grail' in managing facial nerve palsy
Oct 26, 22	Dr. Andrzej Grzybowski*	Endophthalmitis Prevention: Update 2022
Nov 2, 22	Dr. Syed Mohammad	Obstructive sleep apnea in Ophthalmology
Nov 9, 22	Dr. Ralph Eagle*	Intraocular Tumor Masquerades
Nov 16, 22	Dr. Marcelo Nicolela	Long-term progression in glaucoma
Nov 23, 22	Dr. Wesley Chan	Idiopathic intracranial hypertension: an update
Dec 7, 22	Dr. Mishari Dahrab	Anterior ciliary vessel sparing strabismus surgery
Jan 11, 23	Dr. Bonnie He	Pain management in ocular disorders
Jan 18, 23	Dr. Gaynor Watson-Creed	Rethinking EDIA (equity, diversity, inclusion, and accessibility) in 2023
Jan 25, 23	Dr. Verina Hanna	Ophthalmology x Psychiatry: Eyes on Mental Health
Feb 1, 23	Dr. Amr Zaki	"Vitreous cells...what next?"
Feb 15, 23	Dr. Paul Rafuse	Game changers in glaucoma
Mar 1, 23	Dr. Alan Cruess	Optical Coherence Tomography Angiography (OCT-A): an imaging biomarker for past infection with Covid-19?
Mar 8, 23	Dr. Jake Blacklaws	Traumatic Glaucoma
Mar 22, 23	Dr. Rodolfo Bonatti	Drops adherence: What can we do? Are we ready for a drop-less glaucoma surgery?
Mar 29, 23	Dr. Janey' Wiggs*	Glaucoma genetics: Disease risk and therapeutic opportunities

*Visiting Professor Program

Visiting Professor Program

Dr. Larissa Derzko-Dzulynsky

Subspecialty: Uveitis

University of Toronto
Imaging in Management of Uveitis
April 27, 2022

Dr. Burt Kushner

Subspecialty: Pediatrics/Genetics

University of Wisconsin
Care of the Patient — What I Have Learned From
45 Years of Practice
May 25, 2022

Dr. Andrzej Grzybowski

Subspecialty: Retina

University of Warmia and Mazury & Institute for
Research in Ophthalmology
Endophthalmitis Prevention: Update 2022
October 26, 2022

Due to the COVID-19 pandemic, the Visiting Professors Program was virtual until June 2022 and switched back to in-person as of September 2022.

Dr. Ralph Eagle

Subspecialty: Ocular-pathology

Wills Eye Hospital
Intraocular Tumor Masquerades
November 9, 2022

Dr. Janey Wiggs

Subspecialty: Glaucoma

Harvard Medical School & Massachusetts Eye
and Ear
Glaucoma genetics: Disease risk and therapeutic
opportunities
March 29, 2023

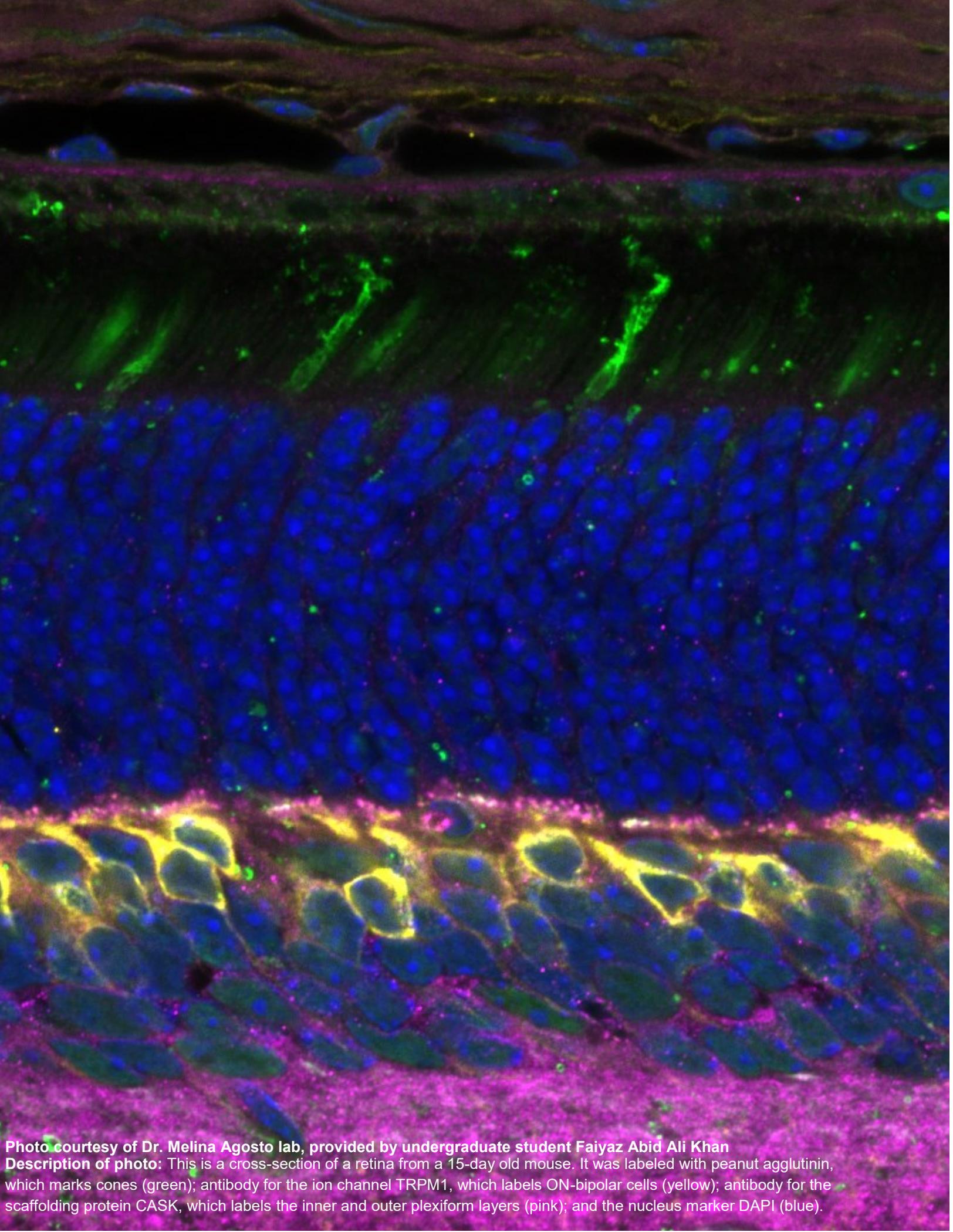


Photo courtesy of Dr. Melina Agosto lab, provided by undergraduate student Faiyaz Abid Ali Khan
Description of photo: This is a cross-section of a retina from a 15-day old mouse. It was labeled with peanut agglutinin, which marks cones (green); antibody for the ion channel TRPM1, which labels ON-bipolar cells (yellow); antibody for the scaffolding protein CASK, which labels the inner and outer plexiform layers (pink); and the nucleus marker DAPI (blue).



Balwantray Chauhan, PhD
Research Director

Emerging from the pandemic, we held our first in-person Research Day since 2019! This felt like a breath of fresh air after meeting after meeting, and conference after conference online. It was an excellent Research Day and underlined the spectrum of research conducted by our students and faculty and the power of face-to-face discussions. The Form and Function in Ocular Disease was not held in 2020 but fortunately all the invited faculty accepted to come to Halifax in October 2022 for a superb multidisciplinary conference. The department also hosted the biennial meeting of the Glaucoma Research Society.

Trainees are vital to our research enterprise and trainees of all backgrounds continue to be attracted to vision and ophthalmology research. We have active participation from undergraduate students, graduate students, residents, and post-doctoral fellows who enrich the diversity and scope of research projects in the department. We are in an enviable position to have excellent endowments, especially the Mathers Endowment which funds individuals from the summer student to faculty level. I am pleased to say we have strong applications in all categories of the Mathers awards, and we continue to attract the very best young minds.

Our New Faculty Research Award provides young faculty members with start-up research funding as a springboard for larger awards at the national level. I am pleased to announce that Dr. Corey Smith, a faculty member in our department and cross-appointed to the Department of Biomedical Engineering was the successful recipient of this award in 2023. Dr. Smith has embarked on a research career that embraces both clinical and basic science approaches to retinal diseases. His engineering background gives him a unique perspective.

I am grateful to the Resident Research Directors, Drs. Johanne Robitaille and Corey Smith. I want to thank Ms. Leah Wood, our Research Manager, who is the cornerstone of our research efforts. Among her many roles, she provides pragmatic support to all students and faculty embarking on research projects. Finally, Ms. Robyn Sharpe has provided excellent administrative support.

I invite you to explore our achievements in the various research areas in this Annual Report. Please do not hesitate to contact me with any questions, queries, or comments. Our objective, as always, is to strive for better.

32nd Annual DOVS Research Day

The 32nd Annual Department of Ophthalmology and Visual Sciences Research Day took place virtually on April 20, 2022. Our keynote speakers, **Dr. Wai-Ching Lam** and **I. Glenn Cohen, JD**, delivered superb lectures and the research presented by trainees and residents was excellent.

Presenters

Devin Betsch, MD
 Rami Darwich, MD, PhD
 Delaney Henderson, MSc
 Douglas Iaboni, MD, MSc
 Michel Nadder, BSc
 Hilary Pearson, MSc
 André Pollmann, MD
 Sunil Ruparelia, BSc
 Sarah van der Ende, BSc
 Emily White, MSc, OC(C),
 COMT
 Tareq Yousef, BSc

Blitz Presenters

Jake Blacklaws, MD
 Harry Dang, MD
 Aliénor Jamet, MSc
 Ryan Matthews, BSc
 Syed Mohammad, MD
 Ashlyn Pinto, MD, MSc
 Shakeel Qazi, MD



**OPHTHALMOLOGY
& VISUAL SCIENCES**

32nd Annual RESEARCH DAY

April 20, 2022 | 9:00am-4:30pm | <https://dalophthal.ca/static/research-day>



Keynote Speaker
Dr. Wai-Ching Lam
 University of Hong Kong
 "The challenge of pediatric vitreo-
 retinal surgery: making a safe entry"

Keynote Speaker
I. Glenn Cohen, JD
 Harvard Law School
 "Heritable and somatic gene editing:
 legal and ethical issues"



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Glaucoma Research Society

Glaucoma Research Society 2022
August 24-27
Halifax, Canada



The Glaucoma Research Society held its biennial meeting in Halifax in August 24-27, 2022. We welcomed the world's foremost glaucoma researchers for a three day conference that took place at King's College. The scientific program consisted of an innovative and diverse series of sessions and workshops. The GRS meeting is limited to members and welcomed 85 delegates from all over the world.



Pictured above: GRS delegates on the steps of King's College.



One of the meeting highlights is the Goldmann Lecture which was delivered by Dr. Anja Tuulonen from Tampere, Finland.

Pictured left: Dr. Anja Tuulonen receiving the Goldmann Medal from incoming GRS President, Dr. Ki Ho Park

Form & Function in Ocular Disease

The Dalhousie University Department of Ophthalmology & Visual Sciences hosted the 9th Biennial Form & Function in Ocular Disease Symposium on October 28-29, 2022, after being cancelled in 2020 and 2021, due to the COVID-19 pandemic. This multi-disciplinary clinical and basic science symposium featured local and guest faculty who are world-class leaders in diverse areas of ophthalmology from ocular imaging to gene therapy to AI in ophthalmology. This year's guest faculty included:

Christine Curcio, PhD, University of Alabama at Birmingham

Why AMD affects the macula: Visual neuroscience meets drusen biology

Reza Dana, MD, Harvard Medical School

New ways of doing the old things: Corneal immune modulation and pro-regenerative treatments

Ross Ethier, PhD, Georgia Institute of Technology & Emory University School of Medicine

Under stress: The role of Mechanics in ocular disease

Andrzej Grzybowski, MD, PhD, University of Warmia and Mazury & Institute for Research in Ophthalmology

Promises and hazards of AI in ophthalmology

Jonathan Horton, MD, PhD, Beckman Vision Center, University of San Francisco

Ambulatory monitoring with wearable eye trackers in exotropia

Christina Schwarz, PhD, University of Tübingen

2P or not 2P? - Two-photon ophthalmology and its potential for clinical application

Val Sheffield, MD, PhD, University of Iowa

Treatments for inherited blindness

Richard Spaide, MD, Vitreous Retina Macula Consultants of New York

Choroidal venous overload



Pictured above left to right: Dr. Val Sheffield, Dr. Ross Ethier, Dr. Christine Curcio, Dr. Reza Dana, Dr. Jonathan Horton, Dr. Andrzej Grzybowski, Dr. Christina Schwarz, Dr. Richard Spaide

12th Annual Atlantic Eye Symposium

The 12th Annual Atlantic Eye Symposium was held on November 4 & 5, 2023 at the Halifax Marriott Harbourfront Hotel. We had another outstanding Symposium, highlighted by an impressive list of guest speakers:

Dr. Davin Johnson, Kingston Ontario, Cornea, Cataract, and Refractive Surgery

Dr. Darrell Lewis, Dalhousie University, Cornea, Cataract, and Refractive Surgery

Dr. Catherine Baril, Centre universitaire d'ophtalmologie in Quebec and Université Laval, Glaucoma

Dr. Brennan Eadie, Dalhousie University, Glaucoma

Dr. Cindy Hutnik, Schulich School of Medicine and Dentistry, Glaucoma

Dr. Paul Rafuse, Dalhousie University, Glaucoma

Dr. Jithin Yohannan, Wilmer Eye Institute, Johns Hopkins University, Glaucoma

Dr. Valerie Biousse, Emory University School of Medicine, Neuro-Ophthalmology

Dr. Nancy J. Newman, Emory University School of Medicine, Neuro-Ophthalmology

Dr. Sri Kala Gore, Great Ormond Street Hospital for Children, London, paediatric Ophthalmic and Oculoplastic

Dr. Alan Cruess, Dalhousie University, Retina

Dr. Rishi Gupta, Dalhousie University, Retina

Dr. Mostafa Hanout, Apex Eye Institute and Western Memorial Regional Hospital, Retina

Dr. Amin Kherani, University of Calgary, Calgary Retina Consultants and the Southern Alberta Eye Center, Retina

Dr. Judy E. Kim, School of Biomedical Sciences, Medical College of Wisconsin (MCW), Retina

Dr. Rishi P. Singh, Cleveland Clinic Florida, Lerner College of Medicine, Retina

Dr. Harry Dang, Dalhousie University, Department of Ophthalmology Resident

Dr. André Pollmann, Dalhousie University, Department of Ophthalmology Resident

During this year's event we are honoured to present the third Dr. Aditya Mishra Lecture in Neuro-Ophthalmology, in memory of our beloved colleague, to be delivered by Dr. Vivek Patel.

Dr. Vivek R. Patel, is Professor of Clinical Ophthalmology and Chief of Neuro-ophthalmology at the University of California, Irvine, Gavin Herbert Eye Institute



Resident Research

Name	Year	Supervisor(s)	Project Title
Dr. Devin Betsch	PGY4	Dr. Rishi Gupta	Dexamethasone Intravitreal Implant Migration Into the Anterior Chamber: Case Series and Review of the Literature
Dr. Devin Betsch	PGY4	Dr. Ahsen Hussain	Onabotulinum toxin A to improve direct brow lift outcomes
Dr. Devin Betsch	PGY4	Dr. Rishi Gupta	Case of macular atrophy
Dr. Devin Betsch	PGY4	Dr. Rishi Gupta	Multimodal imaging of extensive serous ciliochoroidal detachments and macular subretinal and intraretinal fluid following laser peripheral iridotomy
Dr. Devin Betsch	PGY4	Dr. Michael Thorne	Predicting visual outcomes in patients with tumors of the sellar region
Dr. Harry Dang	PGY4	Dr. Bashar Bata	Medical errors in ophthalmology
Dr. André Pollmann	PGY4	Dr. Rishi Gupta	Case of macular atrophy
Dr. André Pollmann	PGY4	Dr. Rishi Gupta	Gore-Tex suture exposure following transscleral fixation of an intraocular lens
Dr. André Pollmann	PGY4	Dr. Rishi Gupta	Utilization of preoperative mid-peripheral optical coherence tomography for tailored surgical management of proliferative vitreoretinopathy
Dr. André Pollmann	PGY4	Dr. Ahsen Hussain	Congenital aberrant lacrimal gland ductules presenting as a nonhealing upper eyelid lesion
Dr. André Pollmann	PGY4	Dr. Darrell Lewis	Quantifying risk factors associated with Descemet stripping automated endothelial keratoplasty
Dr. Rami Darwich	PGY3	Dr. Balwantray Chauhan	Comparison analysis of optic nerve head structures using spectral-domain and swept-source optical coherence tomography
Dr. Douglas Iaboni	PGY3	Drs. Johane Robitaille & Rishi Gupta	Atypical familial exudative vitreoretinopathy with white granules, multi-modal imaging and genetic study

Resident Research

Name	Year	Supervisor(s)	Project Title
Dr. Douglas Iaboni	PGY3	Dr. Jayme Vianna	Quality of meta-analyses in therapeutic studies in glaucoma
Dr. Syed Mohammad	PGY3	Dr. Ahsen Hussain	Utility of eyedrops-facilitated taste test for the assessment of a patent nasolacrimal duct system: A pilot study
Dr. Syed Mohammad	PGY3	Dr. Ahsen Hussain	A novel report of suspected prostate adenocarcinoma to orbital roof meningioma metastasis
Dr. Syed Mohammad	PGY3	Dr. Ahsen Hussain	Comparison of outcome in conjunctival-Müller's muscle resection ptosis surgery with and without epinephrine in local anesthetic
Dr. Ashlyn Pinto	PGY2	Dr. Rishi Gupta	Latrogenic retinal damage and vitreous hemorrhage secondary to YAG laser
Dr. Jake Blacklaws	PGY2	Drs. Johane Robitaille and Darren Oystreck	EyeCare@Home: COVID-19 and beyond; Development and pilot study
Dr. Ashlyn Pinto	PGY2	Dr. Ahsen Hussain	Intersectionality of gender and visible minority status among Canadian ophthalmology residents
Dr. Verina Hanna	PGY1	Dr. Anuradha Mishra	Preoperative educational videos for patients undergoing cataract surgery
Dr. Bonnie He	PGY1	Dr. Brennan Eadie	Risk of angle closure glaucoma with bisphosphonates in osteoporosis patients
Dr. Bonnie He	PGY1	Dr. Ahsen Hussain	Incidence of sympathetic ophthalmia after intraocular surgery: A systematic review and meta-analysis
Dr. Ashley Whelan	PGY1	Dr. Carolina Francisconi	The relationship between contrast sensitivity and OCT imaging findings following retinal reattachment

Trainee Research

Name	Program	Supervisor(s)	Project Title
Emily Bruce	Undergraduate	Dr. Melina Agosto	Role of mGluR6 glycosylation in trafficking and function
Dhruv Gupta	Undergraduate	Dr. Corey Smith	Innovative methods for retinal image analysis
Michael Miller	Undergraduate	Dr. Melina Agosto	Role of mGluR6 glycosylation in trafficking and function
Antwan Morcos	Undergraduate	Dr. Corey Smith	Three-dimensional analysis of retinal imaging
Juliet Noppers	Undergraduate	Dr. Melina Agosto	Characterization of night blindness mutations in mGluR6
Courtney Phinney	Undergraduate	Dr. Corey Smith	Incidence of retinal detachment admissions during a 10 year period in the maritimes
Mustansir Pindwarawala	Undergraduate	Dr. Melina Agosto	Characterization of night blindness mutations in mGluR6
Victoria Smith	Undergraduate	Dr. Balwantray Chauhan	Age-related retinal ganglion cell axonal and somal loss
Ryan Matthews	MSc	Dr. Balwantray Chauhan	Optical coherence tomography angiography in experimental ratinal artery occlusion
Ahmed Abdelaal	Medical student	Dr. Ahsen Hussain	Role of ultrasound in the management of paediatric periocular dermoid cysts
Adil Al-Mehiawi	Medical student	Dr. Ahsen Hussain	Management of upper eyelid retraction: a scoping review
Mohammad Al-Qadi	Medical student	Dr. Ahsen Hussain	Influence of orbital decompression on upper eyelid retraction in Graves' orbitopathy: A systematic review and meta-analysis
Mostafa Bondok	Medical student	Dr. Ahsen Hussain	Exploring the gender gap in ophthalmology applicants: A mixed methods study
Adam Deveau	Medical student	Dr. Ahsen Hussain	Periocular invasive melanoma manifestation in a patient using bimatoprost: case report and literature review
Arjan Dhoot	Medical student	Dr. Rishi Gupta	Unusual OCT sign in patient treated with brolocizumab
Julia Dugandzic	Medical student	Dr. Ahsen Hussain	Corneal deterioration following cataract surgery in patients with a history of orbital radiotherapy
Tyler Herod	Medical student	Dr. Ahsen Hussain	Factors associated with extrusion of orbital implants after infective enucleation/evisceration surgery
Kevin Hodgson	Medical student	Dr. Ahsen Hussain	Outcomes of endonasal dacryocystorhinostomy performed for functional nasolacrimal obstruction with delay on dacryoscintigraphy
Kevin Hodgson	Medical student	Dr. Ahsen Hussain	Corneal deterioration following cataract surgery in patients with a history of orbital radiotherapy
Kevin Hodgson	Medical student	Dr. Ahsen Hussain	Congenital aberrant lacrimal gland ductules presenting as a nonhealing upper eyelid lesion
Kevin Hodgson	Medical student	Dr. Ahsen Hussain	A systematic review and metanalysis of factors that affect survival of full thickness skin grafts in the periocular region
Kevin Hodgson	Medical student	Dr. Ahsen Hussain	Nasal pepsinogen and pH in primary acquired nasolacrimal duct obstruction

Trainee Research

Name	Program	Supervisor(s)	Project Title
Eisa Mohamed	Medical student	Dr. Ahsen Hussain	Perceived role of oculoplastics in the management of facial nerve palsy
Neetin Prabhu	Medical student	Dr. Ahsen Hussain	Onabotulinum toxin A to improve direct brow lift outcomes
Brooklyn Rawlyk	Medical student	Dr. Balwantray Chauhan	Floor effects in optical coherence tomography
Liam Redden	Medical student	Drs. Johane Robitaille & Rishi Gupta	Atypical familial exudative vitreoretinopathy with white granules, multi-modal imaging and genetic study
Liam Redden	Medical student	Drs. Johane Robitaille & Rishi Gupta	Atypical familial exudative vitreoretinopathy with white granules, multi-modal imaging and genetic study
Sunil Ruparelia	Medical student	Drs. Jeremy Murphy, Marcelo Nicolela, Paul Rafuse, Brennan Eadie, Balwantray Chauhan & Lesya Shuba	24-hour intraocular pressure fluctuation in treated glaucoma patients: A prospective comparative study
Dominique Salh	Medical student	Dr. Ahsen Hussain	Management of upper eyelid retraction: a scoping review
Dominique Salh	Medical student	Dr. Balwantray Chauhan	Central visual field progression in glaucoma
Madeline Tweel	Medical student	Dr. Ahsen Hussain	Management of upper eyelid retraction: a scoping review
Delaney Henderson	PhD	Dr. Balwantray Chauhan	Viral labelling of retinal ganglion cells
Aliénor Jamet	PhD	Dr. Balwantray Chauhan	Neuroprotective effects of BDNF/Trk B in experimental glaucoma
Sarah van der Ende	PhD	Dr. Johane Robitaille & Christopher McMaster	Discovering genes for familial exudative vitreoretinopathy
Darcie Wilson	Medical student	Dr. Ahsen Hussain	A novel report of suspected prostate adenocarcinoma to orbital roof meningioma metastasis
Darcie Wilson	Medical student	Dr. Ahsen Hussain	The effect of the COVID-19 on the mental well-being of pre-clerkship medical students: during the pandemic and beyond
Tareq Yousef	PhD	Dr. William Baldrige	Nitric oxide neuromodulation of vertebrate gap junction-coupled retinal horizontal cells
Hirad Feridooni	Postdoctoral Fellow	Dr. Johane Robitaille & Christopher McMaster	Development of novel therapeutics for the treatment of rare ocular developmental vascular disorders
Yong-Woo Kim	Postdoctoral fellow	Dr. Balwantray Chauhan	Retinal curvature correction in optical coherence tomography

Research Profile—Dr. Melanie Kelly



Dr. Melanie Kelly is a Professor in the Department of Pharmacology with cross appointments in the Departments of Ophthalmology and Visual Sciences, and Anesthesia, Perioperative Medicine & Pain Management at Dalhousie University. Dr. Kelly began her academic career at the University of Southampton, UK where she completed her Bachelor of Science and PhD in Neurophysiology. Her postdoctoral studies brought her to Canada where she studied at the University of Alberta, University of Calgary, University of Toronto and University of Western Ontario and pursued her research in Pharmacology, Medical Physiology and Biophysics. In 1991 she was contacted by a colleague who encouraged her to apply to a newly posted position at Dalhousie University. Dr. Kelly's application was successful, and she has not looked back. She has moved her research forward by leading a team in a collaborative research laboratory at Dalhousie University. Her research expertise is in translational pharmacology and

drug discovery and over the last decade Dr. Kelly has focused on the functional role of the endocannabinoid system in the eye and in the development of drugs that target this system.

Professor Kelly pursued her interest in translating research findings into useable medications for people by starting to work on models of ocular inflammation. Her team found that they could achieve remarkable effects by activating the a type of receptor found on immune cells, the type 2 cannabinoid receptor (CB2). Over the years, she has worked in academia and industry to further this research. She has published over 100 papers on her findings. Professor Kelly became a co-founder of a small drug company based in Halifax that was working to leverage their research discoveries into Health Canada approved drugs for those suffering from chronic neurodegenerative and inflammatory diseases. She is an inventor on multiple patents including for the use of cannabinoid drugs for ocular inflammatory conditions, neuropathic pain and dry eye. Dr. Kelly's work has always remained focused on her main research goal which is to provide new insights into pathways that can be modulated to promote ocular health and reduce vision loss and disease progression. She believes that multi-modal approaches to ocular health are essential in the approach to chronic age-related eye disease.

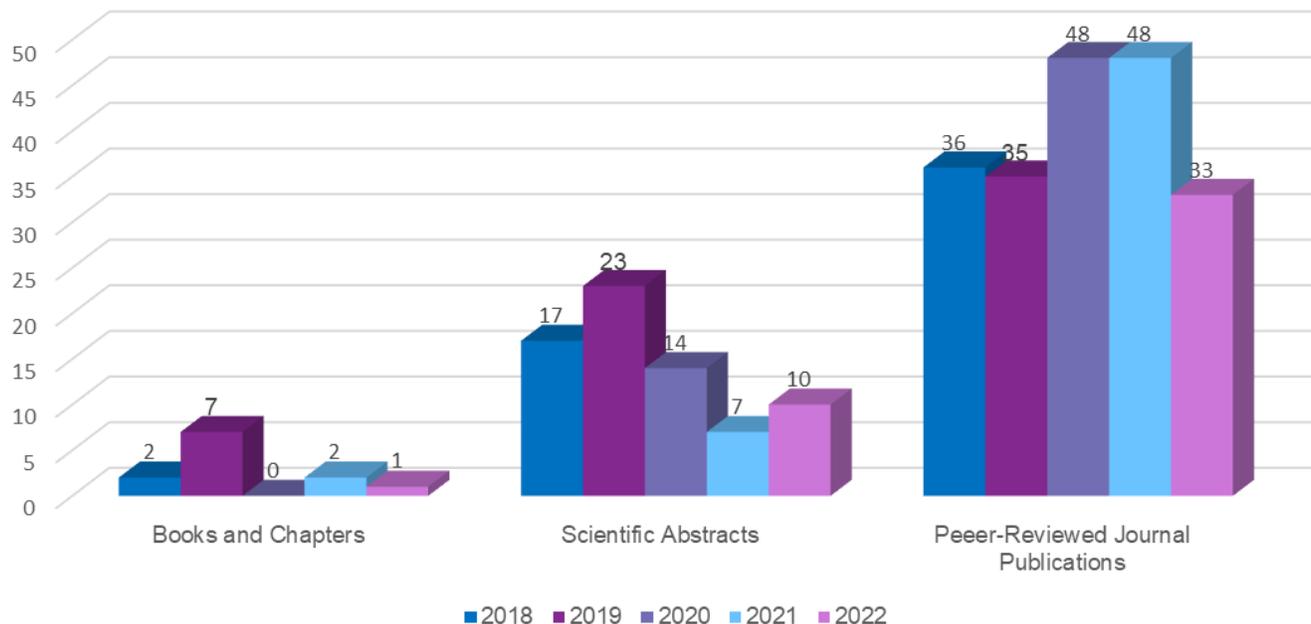
In 2021, Professor Kelly was added to the Cannabis Scientist Power List where she was recognized by experts in the field for her contributions to research and development of novel cannabinoid-based therapeutics.

In addition to her research and industry portfolios, Dr. Kelly has a passion for education and has participated in curriculum development in medicine and pharmacy. This is done at the undergraduate and graduate levels as well for professional development. She has supervised the research of multiple graduate students, residents and health care professionals and considers mentorship as one of the most rewarding aspects of her career.

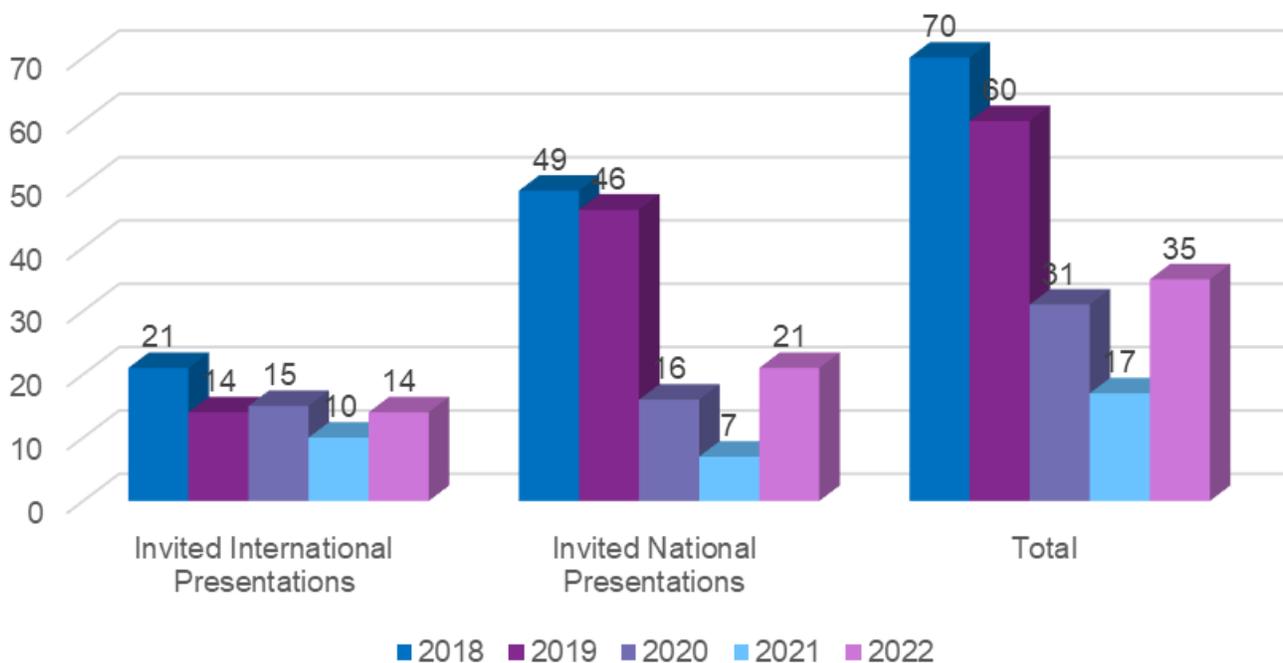


Publication Facts and Figures

Number of Books and Chapters, Scientific Abstracts, and Peer-reviewed Articles by Department Members over 5 years



Number of National and International Presentations by Department Members over 5 years



Peer Reviewed Journal Publications

1. **Promelle V**, Muthusami P, Kletke SN, Shaikh F, Gallie BL, Mallipatna A (2022). Correspondence on 'Intra-arterial chemotherapy for retinoblastoma: an updated systematic review and meta-analysis' by Ravindran . *Journal of Neurointerventional Surgery*. [Letter to the Editor - Published] PubMed ID: [35017205](#).
2. Wright GR, **Archibald CW**, Fontaine D, Dakin-Hache K, Walsh NM (2022). Epithelioid fibrous histiocytoma with chondroblastoma-like features: Report of a rare entity and discussion of related diagnostic challenges. *American Journal of Dermatopathology*. [Case Report - Published] PubMed ID: [34086645](#).
3. Shapira Y, Juniat V, Dave T, **Hussain A**, McNeely D, Watanabe A, Yoneda A, Saeed P, Woo KI, Hardy TG, Price B, Drummond K, Selva D (2022). Orbito-cranial schwannoma-a multicentre experience. *Eye (London, England)*. [Case Series - Published] PubMed ID: [34999720](#).
4. Forner D, Leslie PK, Aldaihani A, Bezuhly M, Noel CW, Horne D, Walling S, **Robitaille J**, MacLellan DL, El-Hawary R, Logan K, Romao R, **LaRoche R**, Sett S, Urquhart R, Hong P (2022). Psychosocial distress in parents with children awaiting surgery during the COVID-19 pandemic. *Children (Basel, Switzerland)*, 9(1). [Published] PubMed ID: [35053712](#).
5. **Betsch D**, Sarraf D, **Francisconi C** (2022). Exudative retinal detachment following intravitreal brovacizumab injection. *Retinal Cases & Brief Reports*. [Case Report - Epub] DOI: [10.1097/ICB.0000000000001219](#).
6. Mishra Amit, **Pollmann AS**, Choudhry N, **Gupta RR** (2022). Preoperative mid-peripheral optical coherence tomography guided surgical management of proliferative vitreoretinopathy. *Retinal Cases and Brief Reports*. [Published].
7. Palakkamanil MM, **Nicolela MT** (2022). The rates of visual field progression in glaucoma and its clinical importance. *Revista Brasileira de Oftamologia*, 81, 01-12. [Review - Published] DOI: [10.37039/1982.8551.20220102](#).
8. Ravi PY, Walsh NM, **Archibald C**, Pasternak S (2022). Endocrine mucin-producing sweat gland carcinoma: Emerging evidence of multicentric cutaneous origin and occasional concurrence with analogous breast tumors. *American Journal of Dermatopathology*. [Case Series - Epub] PubMed ID: [35170475](#).
9. Kim YW, **Sharpe GP**, **Hutchison DM**, **Rafuse PE**, **Shuba LM**, **Nicolela MT**, **Vianna JR**, **Chauhan BC** (2022). Impact of Glaucoma Severity on Rates of Neuroretinal Rim, Retinal Nerve Fiber Layer, and Macular Ganglion Cell Layer Thickness Change. *American Journal of Ophthalmology*. [Epub] PubMed ID: [35122748](#).
10. Hodgson K, **Pollmann AS**, McFadden H, **Hussain A** (2022). Congenital aberrant lacrimal gland ductules presenting as a non-healing upper eyelid lesion. *Ophthalmic Plastic and Reconstructive Surgery*. [Published].
11. **Pollmann AS**, Zhang A, **Shuba LM** (2022). Intraocular pressure fluctuations in a professional woodwind musician with advanced glaucoma. *Canadian Journal of Ophthalmology*. [Published].
12. Ruparelia S, **Mishra A**, Kepes M, **Shuba LM** (2022). Perspectives of eye care providers on potential population eye health initiatives in Nova Scotia. *Canadian Journal of Ophthalmology*. [Published] PubMed ID: [35123947](#).
13. **Gupta RR**, Jiang S, **Seamone ME**, **Iaboni DSM**, Choudhry N, Levin MH (2022). Diagnostic and therapeutic challenges. *Retina (Philadelphia, Pa.)*, 42(3), 584-587. [Case Report - Published] PubMed ID: [33965995](#).
14. van der Ende SR, Meyers BS, Capasso JE, Sasongko M, Yonekawa Y, Pihlblad, M, Huey J, Bedoukian EC, Krantz ID, Ngo MH, McMaster CR, Levin AV, **Robitaille JM** (2022). Severe familial exudative vitreoretinopathy (FEVR), congenital hearing loss and developmental delay in a child with biallelic variants in FZD4. *JAMA Ophthalmology*. [Published].

15. **Francisconi CLM**, Marafon SB, Figueiredo NA, Juncal VR, Shaikh S, Bhambra N, Ta Kim DT, Brosh K, Qian J, Chaudhary V, Berger AR, Giavedoni LR, Wong DT, Altomare F, Chow DR, Di Simplicio S, Kadhim MR, Deonarain D, Hillier RJ, Muni RH (2022). Retinal displacement after pneumatic retinopexy versus vitrectomy for rhegmatogenous retinal detachment (ALIGN). *Ophthalmology*, 129(4), 458-461. [Published] PubMed ID: [34929256](#).
16. Heathcote JG, **Archibald CW**, Valenzuela AA (2022). Oncocytic lesions of the ocular adnexa: A review of two cases with a brief discussion of the pathogenesis. *Saudi Journal of Ophthalmology*, 35(3), 179-185. [Case Series - Published].
17. **Betsch D, Zaki A, Murphy J, Lakosha H, Gupta R** (2022). Multimodal imaging of extensive serous ciliochoroidal detachments and macular subretinal and intraretinal fluid following laser peripheral iridotomy. *American Journal of Ophthalmology Case Reports*, 26. [Case Report - Published] PubMed ID: [35313475](#).
18. **Giammaria S, Hutchison DM, Rafuse PE, Shuba LM, LeBlanc RP, Nicolela MT, Chauhan BC** (2022). Rates of visual field change in patients with glaucoma and healthy individuals: Findings from a median 25-year follow-up. *JAMA Ophthalmology*, 140(5), 504-511. [Published] PubMed ID: [35389449](#).
19. **Betsch D, Gupta RR**, Study Collaborators [Rohowetz L, Yannuzzi N, Berrocal N, Patel N, Sridhar J, Fortun J, Tourville E, Sheidow T, Bourgault S, Lévasseur S, Mandelcorn E, Kalevar A, Seamone M, Greve M, Williams G, Kherani A, Samad A, Galic J, Berger A, Hammamji K, Chang E, Kirker A, Rezende F, Steinle N, Duval R] (2022) Management and complications of dexamethasone intravitreal implant migration into the anterior chamber. *Journal of Vitreoretinal Diseases*, 6(6), 432-436. [Case Report - Published] PubMed ID: [37009539](#).
20. **Giammaria S, Sharpe GP, Dyachok O, Rafuse PE, Shuba LM, Nicolela MT, Vianna JR, Chauhan BC** (2022). Elucidating macular structure-function correlations in glaucoma. *Scientific Reports*, 12(1), 10621. [Published] PubMed ID: [35739208](#).
21. Gary A, McKay BR, **Francisconi CLM**, Muni RH (2022). Toxoplasmosis chorioretinitis mimicking cytomegalovirus retinitis in an immunocompromised pediatric patient following bone marrow transplantation. *GMS Ophthalmology Cases*. [Case Report - Published] PubMed ID: [35912126](#).
22. Long C, Islam E, Law C, Nathoo N, Rawlings N and **Mishra A** (2022). Perspectives of Canadian medical students on ophthalmology education: A needs assessment. *Canadian Journal of Ophthalmology*. [Published] DOI: [10.1016/j.ijcio.2022.06.011](#).
23. **Pollmann AS, Mishra AV, Gupta RR** (2022). Gore-Tex suture exposure following transscleral fixation of an intraocular lens. *Canadian Journal of Ophthalmology*. [Published].
24. **Pinto A, Mishra AV, Gupta RR** (2022). Iatrogenic retinal damage and vitreous hemorrhage secondary to YAG laser. *Canadian Journal of Ophthalmology*. [Case Report - Published].
25. **De Larocheilière E**, Langley JM, **Bata BM** (2022). Unilateral ptosis and mydriasis secondary to presumed Lyme neuroborreliosis. *Journal of the American Association for Pediatric Ophthalmology and Strabismus*, 26(5), 278-280. [Case Report - Published] PubMed ID: [36108883](#).
26. **Pollmann AS, Vianna JR, George SP, Seamone CD**, Chan E, **Lewis DR** (2022). Graft dislocation following Descemet stripping automated endothelial keratoplasty: A comparative cohort analysis of Optisol GS and organ culture preserved corneas. *Cell and Tissue Banking*. [Published].
27. **Betsch D, Gupta R** (2022). Management and complications of dexamethasone intravitreal implant migration into the anterior chamber. *Journal of Vitreoretinal Diseases*, 6(6), 432-436. [Case Series - Published] PubMed ID: [37009539](#).
28. Stubeda H, Quach J, Gao J, **Shuba LM, Nicolela MT, Chauhan BC, Vianna JR** (2022). Comparing five criteria for evaluating glaucomatous visual fields. *American Journal of Ophthalmology*, 237, 154-163. [Published] PubMed ID: [34695395](#).

29. **Eadie BD, Mishra AV, Betsch D, Smith CA, Nicolela MT, Chauhan BC** (2022). Transsynaptic vascular hypoperfusion in the retina of a patient with a post-chiasmal lesion and homonymous hemianopia. *Journal of Neuro-Ophthalmology*, 43(4), 349-351. [Case Report - Published] PubMed ID: [36730892](#).
30. Melo IM, **Francisconi CLM**, Marafon SB, Figueiredo NA, Juncal VR, Bhambra N, Ta Kim, DT, Brosh K, Berger AR, Giavedoni LR, Wong DT, Altomare F, Chow DR, Hillier RJ, Muni RH (2022). Optical coherence tomography angiography morphology following rhegmatogenous retinal detachment repair: ALIGN post-hoc analysis. *Retina*. [Epub] DOI: [10.1097/IAE.0000000000003713](#).
31. Bhambra N, **Francisconi CLM**, Marafon SB, Figueiredo NA, Juncal VR, Brosh K, Hillier RJ, Muni RH (2022). A novel method of quantifying retinal displacement using ultra-widefield fundus autofluorescence imaging. *American Journal of Ophthalmology*, 244, 1-10. [Published] PubMed ID: [35870492](#).
32. Ruparelia S, **Rafuse PE, Eadie BD** (2022). Efficacy and safety of ab interno trabeculectomy revision with 5-fluorouracil in advanced glaucoma due to subconjunctival fibrosis. *Canadian Journal of Ophthalmology* [Published] PubMed ID: [36481183](#).
33. **Bata BM**, Khalili S, Ali A, Wan MJ, Mireskandari K (2022). Late surgery for unilateral persistent fetal vasculature: long-term visual and anatomic outcomes. *Journal of the American Association for Pediatric Ophthalmology and Strabismus*, 26 (6), 296.e1-296.e5. [Published] PubMed ID: [36265751](#).

Scientific Abstracts

- Promelle V**, Lyons CJ. Outcomes of glaucoma valve implantation with Mitomycin-C after failure of a first glaucoma valve in pediatric glaucoma. [Poster] AAPOS 47th Annual Meeting (Scottsdale, Arizona, US), March 2022.
- Bata BM**, Khalili S, Ali A, Wan MJ, Mireskandari K. Late surgery for unilateral persistent fetal vasculature: Long-term visual and anatomic outcomes. [Poster] American Association of Pediatric Ophthalmology and Strabismus Annual Meeting 2022 (Scottsdale, Arizona, USA), March 2022.
- laboni DSM, Celo E, Vianna J**. Evaluation of meta-analyses in the glaucoma literature. [Podium] Dalhousie Ophthalmology Research Day (Halifax NS), April 2022.
- Hodgson K, **Pollmann AS**, MacFadden K, **Hussain A**. Congenital aberrant lacrimal gland ductules presenting as a non-healing upper eyelid lesion. [Podium] Canadian Ophthalmological Society Meeting (Halifax, NS, Canada), June 2022.
- Betsch D, Gupta R** for the Dexamethasone intravitreal implant migration study group* *Rohowetz L, Yannuzzi N, Berrocal N, Patel N, Sridhar J, Fortun J, Tourville E, Sheidow T, Bourgault S, Lévassieur S, Mandelcorn E, Kalevar A, Seamone M, Greve M, Williams G, Kherani A, Samad A, Galic J, Berger A, Hammamji K, Chang E, Kirker A, Rezende F, Steinle N, Duval R. Dexamethasone intravitreal implant migration into the anterior chamber: case series and review of the literature. [Podium] 2022 Dalhousie University Department of Ophthalmology and Visual Sciences Research Day (Halifax, NS), April 2022.
- Pollmann AS, Vianna J, Seamone CD, George SP**, Chan E, **Lewis DR**. Association between corneal storage media and graft dislocation following Descemet stripping automated endothelial keratoplasty: A retrospective cohort analysis. [Podium] Canadian Ophthalmological Society Meeting (Halifax, NS, Canada), June 2022.

7. Mathew M Palakkamanil, Angela Zhang, **Oksana Dyachok**, **Corey Smith**, **Lesya Shuba**. The effect of ginkgo biloba extract (GBE) on optic nerve head perfusion examined using ocular coherence tomography angiography (OCT-A): A prospective study. [Poster] ARVO Annual meeting (USA), May 2022.
8. **Betsch D**, **Gupta R** for the Dexamethasone intravitreal implant migration study group* *Rohowetz L, Yannuzzi N, Berrocal N, Patel N, Sridhar J, Fortun J, Tourville E, Sheidow T, Bourgault S, Lévasseur S, Mandelcorn E, Kalevar A, Seamone M, Greve M, Williams G, Kherani A, Samad A, Galic J, Berger A, Hammamji K, Chang E, Kirker A, Rezende F, Steinle N, Duval R. Dexamethasone intravitreal implant migration into the anterior chamber: case series and review of the literature. [Podium] 2022 COS Annual Meeting and Exhibition (Halifax, NS), June 2022.
9. Di Pierdomenico J, Henderson DCM, **Smith CA**, Hooper ML, **Chauhan BC**. Intracameral injection of cross-linking hydrogel polymer as an animal model of IOP increase. [Podium] European Association for Vision and Eye Research Festival (Valencia, Spain), October 2022. Published: December 2022, *Acta Ophthalmologica*, 100
10. van der Ende S, Meyers BS, Capasso JE, Sasongko M, Yonekawa Y, Pihlblad M, Huey J, Bedoukian EC, Krantz ID, Ngo NH, McMaster C, Levin AV, **Robitaille JM**. A syndrome of hearing loss and FEVR in a girl with biallelic FZD4 mutations. [Podium] Canadian Ophthalmology Society Conference (Virtual), June 2022.

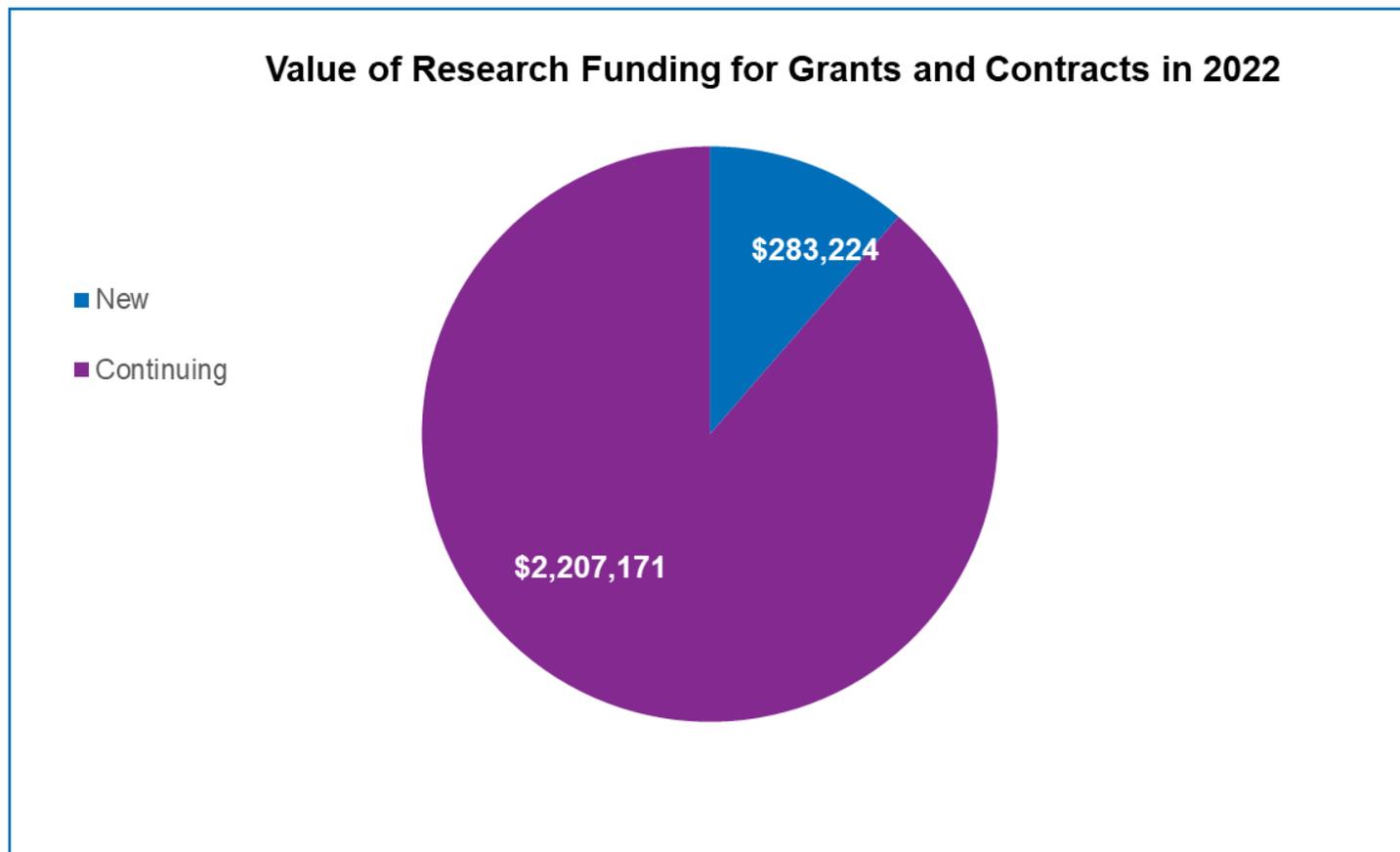
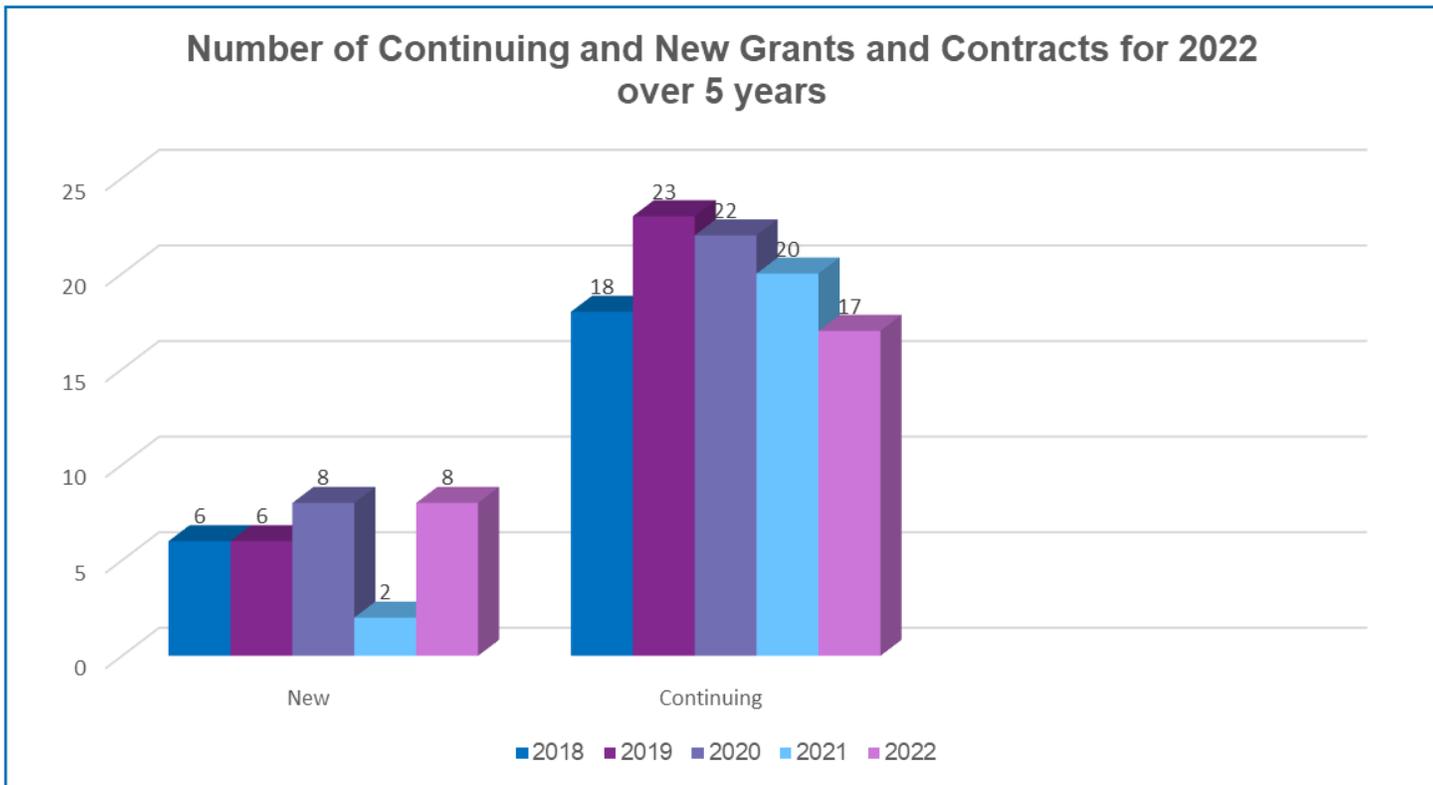
Books and Chapters

1. **Robitaille JM** and Black GCM (2022). Familial vitreoretinopathies [Book Chapter]. In: Graeme CM Black, Jane L Ashworth, Panagiotis I Sergouniotis (Eds), *Clinical Ophthalmic Genetics and Genomics* (pp. 324-333). Elsevier: San Diego, California.

Other Publications

1. **laboni DSM**, Seamone ME, **Gupta RR** (2022) *Hang in there! Management of ectopia lentis* - Canadian Retina Society [Online Resource]
2. **Gupta RR**, **laboni DSM**, Seamone ME (2022) *Check your blind spot! Perfluoropropane gas in the optic nerve head* - Canadian Retina Society [Online Resource]
3. **laboni DSM**, Seamone ME, **Gupta RR** (2022) *Plaque in black: ICG-A in persistent placoid maculopathy* - Canadian Retina Society [Online Resource]

Research Funding Facts & Figures



New Research Grants and Contracts

1. **Agosto MA** (2022 - 2023). New faculty research grant [Grant] - Department of Ophthalmology & Visual Sciences - \$30,000.
2. **Agosto MA** (2022 - 2025). Operating grant [Grant] - Plum Foundation - \$34,500 (USD).
3. **Chauhan BC** (2022 - 2024). Assessing neuroprotection in glaucoma with in vivo single retinal ganglion cell imaging [Grant] - Fighting Blindness Canada - \$192,095.
4. **Agosto MA** (2022 - 2027). Formation of trans-synaptic complexes at the first visual synapse [Grant] - NSERC - \$155,000.
5. **Agosto MA** (2022 - 2023). Capital equipment grant [Grant] - Dalhousie University- \$30,000.
6. **Nicolela MT, Chauhan BC**, Glaucoma myopia phenotyping consortium members (2022 - 2023). Glaucoma Myopia Phenotyping Consortium [Industry Contract] - Heidelberg Engineering, GmbH - \$47,721.
7. **Agosto MA** (2022 - 2023). CFI matching funds [Grant] - NSHRF - \$125,000.
8. **Agosto MA** (2022 - 2023). Molecular dissection of circuits in the visual system [Grant] - CFI - \$125,000.

Continuing Research Grants and Contracts

1. **Francisconi C, Darwich R** (2021 - present). Choroidal thickness in treatment naïve eyes receiving unilateral intravitreal anti-VEGF injections [Grant] – Dalhousie University - \$29,628.
2. **Smith CA** (2021 - 2026). QEII foundation scholar in retina research - startup funding [Grant] - QEII Foundation - \$100,000.
3. **Kim Y-W, Sharpe GP, Chauhan BC** (2021 - 2022). Impact of glaucoma severity on progression rates of peripapillary retinal nerve fiber layer, neuroretinal rim and macular ganglion cell layer thickness [Grant] - Glaucoma Research Society of Canada - \$19,300.
4. **Dickinson J, Cruess A, Gupta RR** (2021 - 2024). A multicenter, open-label extension study to evaluate the long-term safety and tolerability of faricimab in patients with diabetic macular edema (Rhone X) [Industry Contract] - Roche - \$164,917.
5. **Bedard K** (nominated PI), **Vandersteen A, Brock J, Dyack S** (co-PIs), **Robitaille J** (applicant) (2020 - 2023). Genomic applications partnership program (GAPP): Implementation of clinical exomes in a pre- and peri-natal setting [Grant] - Genome Canada - \$4,758,489.
6. **Nicolela MT, Shuba LM, Eadie BD** (2019 - 2022). An extension trial to evaluate the long-term safety and efficacy of bimatoprost SR in patients with open angle glaucoma or ocular hypertension [Industry Contract] - Allergan Inc. - \$100,000 (USD).
7. **McMaster CM, Robitaille J**, Industry partner: **AGADA Biosciences** (2019 - 2022). MITACS accelerate grant: Scientific and clinical hub for orphan drug development [Industry Contract] - MITACS - \$333,333.
8. **Chauhan BC** (2018 - 2023). Novel imaging targets for detecting early progression of glaucoma [Grant] - CIHR - \$730,576.
9. **Chauhan BC** (2018 - 2023). Optic nerve changes in glaucoma (unrestricted funding) [Grant] - Heidelberg Engineering - \$650,000.
10. **Baldrige WH** (2017 - 2022). Modulation of horizontal cells in the vertebrate retina [Grant] - NSERC - \$130,000.
11. **Chauhan BC** (2017 - 2022). Calcium dynamics in retinal ganglion cells [Grant] - National Science and Engineering Council - \$140,000.
12. **McMaster C, Robitaille JM** (2016 - 2023). A treatment for the inherited childhood blinding disorder familial exudative vitreoretinopathy [Grant] - CIHR - \$750,000.
13. **He B, Eadie BD, Etminan M** (2022-2024). Exploration of the Association between Bisphosphonates and Glaucoma [Grant] - Glaucoma Research Society of Canada - \$20,000.
14. **Eadie BD (2021-2022)**. Evaluation of a custom head mounted visual field testing device for glaucoma [Grant] - Dalhousie University- \$28,824.
15. **Eadie BD, Vianna JR (2021-2024)**. Refinement of eye movement perimetry [Grant] - Glaucoma Research Society of Canada - \$19,400.
16. **Talany G, Francisconi C, Gupta RR, Dunsworth S and Mishra A (2021-2022)**. The effect of preoperative educational videos on patients undergoing cataract surgery [Grant] – NSHA TRIC Grant.
17. **Agosto MA** (2021 - 2024). New faculty startup funds [Grant] – Dalhousie University - \$300,000.

The Harald Weiland Centre for Learning & Innovation in Glaucoma

In 1996 the Royal Arch Masons of Nova Scotia and Prince Edward Island launched a fundraising initiative to support research and education in glaucoma at the Department of Ophthalmology and Visual Sciences (DOVS) at Dalhousie University and the QEII Health Sciences Centre. The initiative was led by Most Excellent Companion, Harald Weiland, in partnership with former DOVS Head, Dr. Raymond LeBlanc. Mr. Weiland became a tireless advocate for glaucoma awareness and support for research and encouraged participation of all Masonic Chapters across Nova Scotia and Prince Edward Island. When considering the expansion of our research space, the DOVS thought it would be fitting to commemorate the memory of Mr. Harald Weiland by creating the Harald Weiland Centre for Learning & Innovation in Glaucoma.

The Harald Weiland Centre for Learning & Innovation in Glaucoma will become an integral component of our glaucoma research community that will support additional trainees (graduate, post-graduate, and medical/other student trainees) to work, interact, conduct their research, and be mentored by the glaucoma clinical and research faculty. This newly renovated space is located on the 5th floor of the Bethune Building, QEII Health Sciences Centre.

We were thrilled to celebrate the opening of this new space with several members of the Royal Arch Masons of Nova Scotia and Prince Edward Island and members of Harald Weiland’s family on June 12, 2023.



Supporters

The academic and clinical missions of the Department of Ophthalmology & Visual Sciences are enabled by generous supporters and partnerships with a number of Foundations and private groups. The Department continues to thrive thanks to the visionary forethought of several philanthropic donors who created endowments that enable our research and education mandates through studentships, scientist support and opportunities to optimize our existing budgets. In addition to the endowments and established funds listed here, the DOVS benefits from numerous private donations, large and small, which allow us to continue to innovate in Eye Care. We are grateful to all our supporters.

Endowments

Dalhousie Advancement

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Dr. R. Evatt and Rita Mathers Scholarship Fund

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Should you wish to make a donation to support the Department of Ophthalmology & Visual Sciences, you may do so through one of our partners below.





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