Glaucoma Research Society of Canada
News & Information

We Support New Ideas

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GRSC Provides Essential Funds for Future Glaucoma Professionals

Grants from the Glaucoma Research Society of Canada can have a deeper impact on the field of research than you may realize. Seed funding is often what starts the ball rolling on ideas that snowball into big breakthroughs. It is also what makes it possible for some students to continue pursuing higher education to become the next generation of professionals.

After graduating from the University of Toronto with her Master's degree in June, Wongel Bogale, who studied under Dr. Yaping Jin, is on her way to medical school in September. Her thesis was based on a research project funded by the Society in 2019. The results of the project have been recognized by professionals in the field both nationally and internationally.

Aliénor Jamet, a PhD research student of medical neuroscience at Dalhousie University in Halifax, Nova Scotia, received the GRSC's 2023 Mel Mitzel Research Excellence Award after her project under professor Dr. Balwantry Chauhan received the highest professional review rating of all applications submitted, even those from recognized experts in the field!

The future is looking brighter with these young professionals entering the field! We wish them all the best on their endeavors.

Dr. Cindy Hutnik Appointed Inaugural Marcel and Louise Brunette Research Chair in Ophthalmology

GRSC board member, Dr. Cindy Hutnik, BSc, MD, PhD, FRCSC, has been appointed to this prestigious position to advance research efforts at St. Joseph's Health Care London Ivey Eye Institute, in collaboration with Western University's Schulich School of Medicine & Dentistry in London, Ontario.

Dr. Hutnik, with an already distinguished research program, is recognized internationally as a clinical role model and leader. Her titles include Ophthalmologist-in-chief at the Ivey Eye Institute and Professor and Chair of the Schulich School of Medicine & Dentistry.

Dr. Hutnik's new role as Research Chair was prompted when Marcel and Louise Brunette generously bequeathed their estate to St. Joseph's as a gesture of gratitude for the exceptional care they received. The legacy left by the Brunettes, who wanted their estate to benefit others, will now enrich the lives of many through this Research Chair. Funding will be used to attract new research talent and expand the program.

Photo & announcement published online at Western University Schulich School of Medicine and Dentistry

President's Message

The Society is having another successful year in raising funds, making grants and increasing awareness about issues relating to glaucoma through its newsletters, website, webinars and other initiatives, including a recent ad on Zoomer radio.

I'm pleased to let you know that the Society will participate again this year in the Toronto Waterfront Marathon, which will take place virtually during the month of October. Supporters of the Society, including some of its directors, plan to complete the usual 5K walk in North Toronto on Sunday, October 15.

In recognition of Dr. Graham Trope's retirement, the Society has raised over $210,000 for research grants from its generous supporters. Although retired, Dr. Trope remains very active in the Society's affairs and continues to chair the Scientific Advisory Committee.

Dr. Brennan Eadie will give the 13th Albert Waxer lecture at the annual supporters' meeting on October 11.

The Society awarded a total of $374,874.03 in research grants to 16 successful applicants, including $5,000 for the Mel Mitzel Annual Research Excellence Award, presented to the applicant with the highest ranking for a new research project.

The Society will be receiving significant bequests from generous donors who have made provision for it in their wills. This illustrates the importance of considering the Society in estate planning, along with other alternatives, such as donating marketable securities.

The Society and its directors are grateful and thank all of the generous supporters for making the grants possible. With your ongoing financial support, the Society will continue to make a significant difference through its research grants.

James M. Parks, President

Increased Risks of Glaucoma in Untreated Hypertension

Researchers examined how high blood pressure (hypertension) can affect open-angle glaucoma by studying over 360,000 adults over 40 who were not receiving medication for either high blood pressure or glaucoma. They found that people with higher blood pressure levels were more likely to develop glaucoma.

This suggests that people with even a mildly higher blood pressure should get tested for glaucoma regularly to prevent the vision loss that could occur if it's left untreated.

American Journal of Ophthalmology, published online April 7, 2023.

Driving Accidents & Glaucoma

In a study examining how glaucoma affects a person's ability to drive safely, researchers used a driving simulator that presented different scenarios, such as pedestrians or cars unexpectedly cutting in front of the driver, to test both glaucoma patients and people without glaucoma.

The study found that glaucoma patients took longer to react than people without glaucoma. Additionally, the worse the glaucoma, the longer it took the patients to react.

This suggests that people with glaucoma may be more prone to accidents while driving and that using simulators could help identify a glaucoma patient's risk for driving accidents.

Journal of Glaucoma, published online May 10, 2023.

Glaucoma Research Society of Canada

You're Invited!

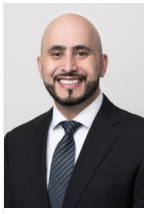
WEDNESDAY, OCTOBER 11, 2023 at 7pm ET

Please join us Online for our Annual Meeting of Supporters

Dr. Brennan Eadie, MD, PhD, FRCSC to present 13th Annual Albert Waxer Lecture

Dr. Brennan Eadie specializes in glaucoma. He is President and CEO of Eadie Tech in Halifax NS whose mission is *to improve the ability of eye care clinicians to effectively diagnose and treat patients with glaucoma through novel approaches to visual field testing*. Dr. Eadie is an assistant professor in the Department of Ophthalmology and Visual Sciences at Dalhousie University, has published dozens of articles in high-quality, peer-reviewed national and international journals, and has presented to national and international audiences.

Dr. Eadie received 2 research grants from Glaucoma Research Society of Canada in 2023. Researchers from both projects plan to join him as well!



Dr. Rami Darwich, BSc, MSs, PhD, MD, CM is a resident at Dalhousie University where he is researching the affects anxiety can have on testing with Dr. Eadie. Dr. Darwich has studied at Laurentian University, the University of Ottawa and McGill.

Dr. Bonnie He, BSc, MD, completed her undergrad at McGill, medical school at UBC and is currently a PGY3 resident at Dalhousie University. Her project with Dr. Eadie looks at the risk of glaucoma with bisphosphonate use.

Following the lecture, Dr. Eadie will join some of Canada's leading glaucoma specialists to answer your questions live!

We hope that you can join us!

To register for the 2023 Annual Supporters' Meeting, Please check our website: www.glaucomaresearch.ca
or contact us at: info@glaucomaresearch.ca
(416) 483-0200 1-877-483-0804

Glaucoma Research Society of Canada Awarded $374,874 in Grants to 16 Research Projects in 2023

Study on Improving Gene Therapy of Retinal Ganglion Cells Wins Mel Mitzel Research Excellence Award

Glaucoma damages the eye's retinal ganglion cells (RGCs) leading to irreversible loss of visual field and potentially blindness.

Scientists are exploring gene therapy of RGCs as a treatment option using adeno-associated viral vectors, which are able to carry genes to targeted cells in the eye.

Researchers will test three different promoters (which act like switches) to activate the therapy genes in the targeted cells of mice to determine which promoter works the best and lasts the longest.

By studying these different promoters, researchers hope to improve how gene therapy is used to treat glaucoma and other eye diseases in the future.

Aliénor Jamet & Dr. Balwantray C. Chauhan, Dalhousie University, Halifax, NS

Studying How Anxiety Affects Visual Field Testing Results

Visual field tests are commonly used to diagnose glaucoma, but they can cause discomfort and anxiety for patients, which might affect the results.

Researchers hope to find better ways to make the tests more accurate and less stressful for patients.

In this study researchers will compare the physiological responses (e.g. blood pressure) during the test and responses to questionnaires about anxiety in groups of glaucoma patients and control groups.

Dr. Brennan Eadie & Hailey Burns, Nova Scotia Health Authority, Halifax, NS

Prevalence of Glaucoma in Canada

Canada lacks data on glaucoma prevalence. This limits our ability to understand the burden glaucoma has nationally, and also impacts Canadian health-related vision policy and planning. Further, Canada is often excluded from international vision research projects requiring prevalence data.

Researchers for this project will study information from eye exams and questionnaire responses to generate original glaucoma specific knowledge on the prevalence of glaucoma in Canada. They will also generate information on glaucoma risks for Canadians and derive other valuable information such as the use of glaucoma eye drops.

This data will allow Canadian researchers and policy analysts to understand glaucoma and its risk factors. It will also help fill the knowledge gap between Canada and other countries regarding glaucoma.

Dr. Yaping Jin, Dr. Yvonne Buys & Dr. Ziad Butty, University of Toronto, Toronto, ON

Examining the Visual Effects of Laser Iridotomy

This team aims to review and analyze all previous studies of the relationship between the location of Laser Peripheral Iridotomy (LPI) and a visual phenomenon called dysphotopsia (visual effects described as halos, lines, and ghost images).

They expect that the combined analysis could reveal significant insights that individual studies might not have captured. This could lead to a better overall understanding of LPI location and dysphotopsia.

Michael Balas & Dr. David Mathew, University Health Network, Toronto, ON

The Impact of Size and Sex on Outflow Pathways of the Eye

Glaucoma is linked to factors like age and eye pressure. For this project, researchers will explore drainage pathways in the eyes to determine if they are affected by the size of the eye or the person's sex.

They will use various sized tracers (tracking compounds) developed in the laboratory and non-invasive imaging to track the drainage process in both male and female mice.

By comparing different tracers and sexes, researchers hope to better understand how drainage pathways work and whether it could lead to new treatments for glaucoma in humans.

Dr. Yeni Yücel & Dr. Neeru Gupta, Unity Health Toronto, St. Michael's Hospital, Toronto, ON

Understanding How MIGS Affects IOP Fluctuations

Microinvasive glaucoma surgery (MIGS) is a treatment to reduce high intraocular pressure (IOP).

However, follow-up testing may not always show accurate results. IOP fluctuates, and testing IOP during doctor's visits can miss spikes. 24-hour home monitoring devices may produce more accurate results.

This study will use 24-hour home monitoring systems to measure IOP before and after the surgeries to better understand how MIGS affects IOP fluctuation.

The results of this study could lead to a better understanding of baseline risk factors associated with MIGS outcomes and have the potential to dramatically improve surgical outcomes and overall patient satisfaction.

Dr. Ike Ahmed, Dr. Matthew B. Schlenker, Dr. Irfan N. Kherani, Dr. Mike Yang, & Dr. Anastasiya Vinokurtseva, University of Toronto, Toronto, ON

Gaze Behavior When Analyzing Visual Fields

Glaucoma often progresses from a patient's peripheral vision to their central vision. A common diagnostic test is visual perimetry, where patients click a button when they see lights in their field of vision. An ophthalmologist then analyzes test results to determine if there is glaucoma damage.

Previous studies show that ophthalmology residents are twice as likely to incorrectly analyze test results when compared with experienced ophthalmologists' analyses.

This study will compare the evaluations of visual field test results made by glaucoma professionals and ophthalmology residents to try to determine why residents are currently not providing more accurate analyses. It also aims to determine the optimal analysis of a visual field report.

Rodolfo Bonatti, Dr. Lesya Shuba & Dr. Brennan Eadie, Dalhousie University, Halifax, NS

Protecting Eyes Using PEA Molecule

Glaucoma damages the optic nerve and retinal ganglion cells (RGCs) of the eye, potentially leading to blindness. Current treatments target eye pressure, but some patients still lose vision.

A molecule called Palmitoylethanolamide (PEA) shows promise in protecting eyes and is already used in some countries in Europe, but some details are lacking.

This team seeks to determine if they can increase PEA and other related molecules, using mice as test subjects. The study will also look at how age and disease affect these molecules.

This research could lead to new treatments to reduce inflammation, contribute to cell survival, and prevent nerve loss, thus protecting eyesight.

Dr. Melanie Kelly, Dalhousie University, Halifax, NS

Improving Tissue Healing After Glaucoma Surgery

Some glaucoma surgeries to reduce eye pressure can be less successful due to abnormal tissue healing. The goal of this research project is to improve the success of glaucoma surgeries by studying the effects of a number of different compounds.

Researchers will use a special 3D model they developed to mimic the eye's tissue and fluid flow. They will use human cells in the model and simulate conditions of real surgeries to examine the structure and changes in the cells after using different compounds.

The team anticipates finding a compound that could improve tissue healing. This study could help make glaucoma surgery safer and more successful.

Dr. Cindy Hutnik, Dr. James Armstrong, Dr. Anastasiya Vinokurtseva & Richard Zhang, Lawson Health Research Institute, London, ON

Studying the Gene Pathways in Eyes with Glaucoma

The intraocular eye pressure (IOP) associated with both primary open angle glaucoma (POAG) and pseudoexfoliation glaucoma (PXFG) can be linked to issues with the trabecular meshwork (TM). This project aims to understand molecular changes of the TM in patients with POAG and PXFG by determining if the genes in the TM are different in patients with these forms of glaucoma. Researchers will collect TM samples during glaucoma surgeries to be examined at Duke University using advanced techniques for studying genes.

Researchers hypothesize that the gene patterns in eyes with PXFG will differ from those with POAG and also with those of non-glaucoma eyes. They are optimistic that results can lead to improved glaucoma treatments.

Dr. Brennan Eadie, Dr. Changseok Lee & Dr. Emma-Lee Rhyno, Nova Scotia Health Authority, Halifax, NS

Optic Nerve and CSF Changes in Pseudoexfoliation Glaucoma

This study will use advanced MRI scans to examine changes in the optic nerve and cerebrospinal fluid (CSF) in people with pseudoexfoliation glaucoma (PFXG).

Researchers believe that the buildup of abnormal proteins in patients with this condition might affect the flow of CSF around the optic nerve, leading to damage.

The team plans to use specialized MRI techniques on both glaucoma patients and a control group, then compare the results to better understand how the disease affects the optic nerve and CSF movement.

This study could provide valuable insights into the causes of optic nerve damage in PFXG patients and lead to better treatments.

Dr. Neeru Gupta & Dr. Yeni Yücel, Unity Health Toronto, St. Michael's Hospital, Toronto, ON

Regeneration of the Trabecular Meshwork via Stem Cell Activation

Damage caused by high intraocular pressure (IOP) can lead to irreversible blindness.

A recent treatment discovery involves injecting certain protein factors (TMRPs) into the eyes following laser treatment to activate stem cells with the ability to reduce IOP.

For this project, the team will use a different type of laser than has been used in the procedure before to perform the test in rats. Researchers will focus on changes in stem cells and IOP following the test.

If the laser and TMRPs work successfully together to lower IOP, it could lead to better treatments for glaucoma in the future and help prevent eye damage that leads to vision loss.

Dr. Mark Lesk & Dr. Denis Claude Roy, University of Montreal, Montreal, QC.

Two Studies Examining the Impact of Meditation and of Breathing Exercises on Improving Quality of Life of Glaucoma Patients

This team is continuing with research started during the pandemic with two new projects funded this year. Researchers will conduct a 12-week pilot study for both projects.

Glaucoma patients are susceptible to having lower quality of life partly due to the added stress that can come with vision loss. Earlier studies have proven that both meditation and breathing exercises can reduce stress and improve the overall well-being for many glaucoma patients.

The first project will compare a group doing meditation with a group getting the usual care, and measure stress, quality of life, and future outlook using questionnaires.

The second project will compare glaucoma patients who receive the breathing intervention with those who receive the usual care. They will measure the effects on mental health, stress levels, and future outlook using questionnaires.

If effective, this could lead to better care for glaucoma patients and improve their mental and physical well-being.

Dr. Monali Malvankar & Dr. Cindy Hutnik, Lawson Health Research Institute, London, ON

A New Role for Histamine in Optic Nerve Regeneration

Glaucoma can lead to blindness when retinal ganglion cells (RGCs) in the eye are damaged. In an attempt to restore vision, researchers are exploring ways to regenerate RGCs.

A substance called Zymosan has shown promise in promoting regeneration, but with negative side effects that outweigh the benefits, preventing its use in humans. This study aims to better understand how Zymosan works and if it can be used to develop a safe treatment for glaucoma. Previously, the team found that mast cells play a role in Zymosan's effects and that histamine, a chemical produced by mast cells, helps RGCs regenerate.

This project will study if the histamine and its receptors can aid RGC regeneration and test if blocking histamine with drugs harms RGC regeneration. The study could lead to safer and better treatments for glaucoma and potentially help restore vision.

Dr. Philippe Monnier, University Health Network, Toronto, ON

RENEWAL: Studying Associated Glaucoma Gene Using Zebrafish

This renewal project has already received two grants from the Glaucoma Research Society of Canada in 2016 and 2019 to study glaucoma using zebrafish. Zebrafish make an excellent model to study glaucoma as their eyes are highly similar to that of humans, and certain mutations in genes can be easily produced in the researcher's laboratory.

The 2016 study looked at a gene called FOXC1 and the gene GMDS was the focus of the 2019 renewal – both uncovered links with glaucoma.

This second renewal in 2023 will focus on the zebrafish version of the GMDS gene that has been associated with primary open angle glaucoma (POAG) risk in human populations. The researcher hopes to further explore the relationship between the gene and glaucoma in the fish to help doctors better understand and treat glaucoma in humans.

Dr. Curtis French, Memorial University of Newfoundland, St. John's, NL

ATTENTION RESEARCHERS:

GRSC's online research portal will open on October 16th for submissions to the 2024 grant campaign.

www.glaucomaresearch.ca

Plan Now to Take Part in October's Virtual Marathon!

The GRSC's 2020 fundraising team, including participants from Aequus Pharmaceutical & the Birches.

The GRSC's 2019 fundraising team.

Last year the Society raised $50,050 for glaucoma research from the Marathon. With your help, we'd love to beat that in 2023!

You can sponsor the team with a donation
(please see our website for details)

OR

You can join the team as a fundraiser and start collecting money for glaucoma research by asking your family and friends to sponsor you
In-person participation takes place at the waterfront on October 15th. Virtual participants can choose their own route anywhere in Canada and schedule their own time anytime in October.

ALL MONEY RAISED WILL GO TO FUNDING GLAUCOMA RESEARCH

For more details, check our website: **www.glaucomaresearch.ca**
call us: (416) 483-0200, 1-877-483-0804
or email: info@glaucomaresearch.ca

Dr. Rajiv Bindlish Answers Your Questions about Glaucoma

If a glaucoma patient completely loses their sight, do they still need to use eyedrops?

The benefit of using glaucoma eye drops even after all sight is lost is for eye comfort and to preserve the look of the eye. If the patient stops using drops, eye pressure can rise which can become painful. Other issues can also arise such as swelling of the cornea, or stroke in the back of the eye.

As long as the patient can tolerate the use of prescribed glaucoma eye drops, I suggest they continue to use them.

I take two different eye drops to control the pressure in my eyes, but my eyes get uncomfortably dry after a few months. What are the best eye drops to prevent this?

Ocular surface disease is very common amongst glaucoma patients. I would suggest switching to preservative free Cosopt if possible. Using artificial tear drops, many of which are preservative free may also help.

Patients can also manage dry-eye and Blepharitis by applying 5-minute daily hot compresses on the eyes and cleaning the base of the eye lashes with a mild cleanser. Taking Omega 3 fatty acid may also help.

Email Your Questions about Glaucoma to:

info@glaucomaresearch.ca

Perception of Marijuana as Glaucoma Treatment

A study into the public's perception of using marijuana to treat glaucoma symptoms resulted in 72% of public respondents in favour of the treatment while 18% were opposed. Non-medical professionals made up the majority of those in favour, while the majority of those opposed were ophthalmologists, other vision/health care workers, and members of the health care media.

This discrepancy between the public and medical professionals shows a need for better public education on the use of marijuana to treat glaucoma.

Journal of Glaucoma, published online July 2023.

Retirement Fundraiser for Glaucoma Research Surpasses $210,000!

Thank You So Much!

We received even more donations towards Dr. Trope's retirement fund-raiser after publishing a donor list in our 2023 Spring newsletter! Thank you to the following for helping us surpass $200K for glaucoma research:

Leslie Bowland
Dr. Stephen Kraft
Dr. Mark Lesk
John Ware
Michael Webb
Steve Taylor
Peter Griffis
Ami Frieberg
Dr. Sheldon Jafine
Ian Dunbar
Dr. Ken Spreen
Jerry Wiseblott
Dr. Brian Jafine
Dr. Howard Rosen
Mike Capo
Dr. Paul Bhatti
Dr. Brian Tenaschuk
Dr. Graeme Hibberd

On behalf of Dr. Graham E. Trope, Renée Wolfe (GRSC's Fundraising Chair), the Society's Board of Directors, and everyone with glaucoma, thank you!

Legacy Gifts: Benefits of Including the Glaucoma Research Society of Canada in Your Will

Making a difference: Naming the Glaucoma Research Society of Canada (GRSC) as a beneficiary in your will can help pay for research into finding a cure for glaucoma, the leading cause of irreversible blindness.

Tax benefits: Leaving a donation of stocks, bonds or cash in your will to the GRSC will bring your estate significant tax savings.

Simplicity & Flexibility: Naming the GRSC in your will can be easy with the help of a lawyer and will give you the chance to choose how to make your gift (e.g. whether to donate cash, securities, etc.)

Honouring a loved one: Some people name the GRSC in their will as a way to honour a loved one who suffered from glaucoma.

Encouraging others to do the same: By naming the GRSC in your will, you can also inspire others to do the same, helping to build a culture of philanthropy and giving.

Providing for the future: Making a bequest can help to ensure that the GRSC will continue to be able to fund this vital research.

Please discuss the best plans with your loved ones. If you've already left a gift to the GRSC in your will or if you are thinking of doing so, please reach out to let us know or to discuss it further. Our contact information is adjacent, and if you prefer we can put you in touch with our **Legacy Gifts Consultant, Martin Chasson, CA, CPA.**

Eyes Open Photography

For an update on Jordan Tidd's second annual solo-photography exhibition for glaucoma awareness, check her website (it's worth seeing for yourself!):
www.eyesopenexhibition.com

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