

Dr. Robert Campbell

Queen's University -

[Link to Queen's profile at](#)

<http://ophthalmology.queensu.ca/faculty/physicians/glaucoma/campbell>

HDH Department – Ophthalmology - Eye Physician and Surgeon - Glaucoma Subspecialist

Fields of Specialization: Ophthalmology, Glaucoma surgery, Cataract surgery, Health services research

Keywords: health services research, health policy research, quality of care, drug and surgical safety

Research Story

According to the National Coalition for Vision Health, at least 300,000 Canadians suffer from glaucoma, including 50% who are not yet aware of their disease.¹ The cost of glaucoma in Canada has been estimated at over half a billion dollars per year².

In a collaboration with the Mechanical Engineering Department at Queen's University, Dr. Rob Campbell, Associate Professor of Ophthalmology at Queen's University and an ophthalmic surgeon at Hotel Dieu Hospital, has developed a device for glaucoma surgery which promises to lead to better outcomes for glaucoma patients. Variable results in current surgical procedures have created a need for improved techniques for these patients. The device, called a Laser Adjustable Suture, would allow surgeons to use laser technology to more precisely adjust the pressure in the eyes of glaucoma patients after their surgery. This would enable an individual's eye pressure to be fine-tuned after glaucoma surgery with a degree of precision that did not exist prior to the development of the device. This collaboration has been done in partnership with PARTEQ, a not-for-profit organization created by Queen's University to commercialize intellectual property (e.g. inventions) arising from university-generated research. The Laser Adjustable Suture has been patented, and PARTEQ is now working toward a license agreement. It is hoped that the device can be built on a commercial scale and will be brought to market after industry-sponsored clinical trials. Ontario government financial assistance was provided for this collaboration via PARTEQ, through proof of principle funding. NSERC and CIHR grants also supported this research. The enterprise of Dr. Campbell and his colleagues has the potential to result in a significant quality of life increase for the growing population of glaucoma patients.

Additionally, Dr. Campbell's experience as an ophthalmic surgeon, as well as his research expertise, has led to his appointment to Ontario's Vision Strategy Task Force. Through the Institute for Clinical Evaluative Sciences (ICES), which is based in Toronto with a satellite at Queen's Health Services Research Facility, Dr. Campbell and colleagues across Ontario are investigating the relationship between clinical outcomes for patients requiring different types of eye surgery and the subspecialization and experience of their surgeon. In particular, Dr. Campbell and colleagues have shown that the proportion of general ophthalmologists in Ontario who perform glaucoma surgery has decreased significantly over the last decade, so that the proportion of this type of surgery performed by "high-volume" surgeons has more than doubled. Dr. Campbell's ongoing research program is investigating the effects of these changes on patient outcomes. The direction of medical and surgical education, as well as accessibility

issues for patients depending on their geographic location, are impacted by these findings. The following article published on this topic provides further detail:

Campbell RJ, Bell CM, Gill SS, Trope GE, Buys YM, Whitehead M, El-Defrawy SR.
Subspecialization in glaucoma surgery. *Ophthalmology*. Nov 2012, 119(11), 2270-3. doi:
10.1016/j.ophtha.2012.05.043. Epub 2012 Jul 26.

References

1. The National Coalition for Vision Health. 2013. Data & statistics. [The link is as follows:
http://www.visionhealth.ca/data.htm#Eye%20Diseases](http://www.visionhealth.ca/data.htm#Eye%20Diseases)
2. Access Economics Pty Limited. 2009. The Cost of Vision Loss in Canada: Report by Access Economics Pty Limited for the CNIB and the Canadian Ophthalmological Society. [The link is as follows:
http://view.officeapps.live.com/op/view.aspx?src=http%3A%2F%2Fwww.cnib.ca%2Feng%2Fcnib%2520document%2520library%2Fresearch%2Fcovl_full_report.doc](http://view.officeapps.live.com/op/view.aspx?src=http%3A%2F%2Fwww.cnib.ca%2Feng%2Fcnib%2520document%2520library%2Fresearch%2Fcovl_full_report.doc)