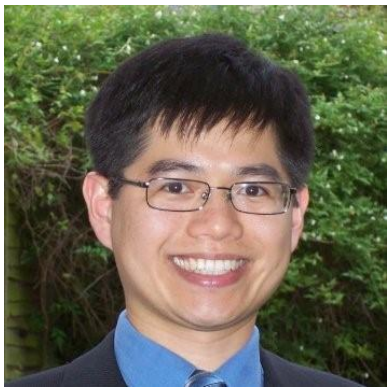
Fred Chen, Lions Eye Institute, Australia

Bio:



Dr Fred K Chen is a surgeon-scientist at the Lions Eye Institute. He returned to Perth in 2010 after advanced training in medical and surgical retina at Moorfields Eye Hospital and completing a PhD in retinal pigment epithelium transplantation for macular degenerations at the University College of London Institute of Ophthalmology. He is currently a consultant vitreoretinal surgeon and the Director of Ocular Tissue Engineering Laboratory at Lions Eye Institute. He is main clinical and translational research interests are treatment clinical trials endpoint validation, randomized controlled trials of new therapies for macular degeneration, high resolution non-invasive cellular and vascular imaging of the retina, monitoring of inherited retinal disease progression and application of stem cell technology in developing personalised medicine through induced pluripotent stem cells. He serves on the Board of Directors for Ophthalmic Research Institute of Australia and is funded by the Australian NH&MRC.

Presentation Title:

'Can Biophotonic Advances Overcome Clinical Challenges in Human Retinal Vascular Imaging?

Abstract:

Diseases of retinal blood supply is an important cause of blindness. Although some of these vascular diseases are treatable, the Australian tax payers spend over $300 million dollars a year paying for drugs used to treat these diseases. Therefore, unnecessary treatment should avoided to reduce cost without compromising outcome. Non-invasive and reproducible techniques to detect and monitor retinal vascular disease progression and response to treatment can play an important role in the management of patients receiving these treatments. Traditional methods of examining retinal blood vessel, flow and leakage requires intravenous injection of fluorescent dyes such as sodium fluorescein and indocyanine green. However dye-based angiography is limited by the potential of allergic reaction to the dye, poor lateral resolution and absence of depth resolution. Biophotonic advances have addressed some of these limitations but further development is urgent needed to overcome motion artefact and segmentation errors to translate these technologies into the clinic. This talk will illustrate examples of common challenging issues in retinal vascular imaging for further group discussion.