Professor Tien Y Wong, Centre for Eye Research Australia, University of Melbourne, Department of Ophthalmology

I am currently a NHMRC PRF and Professor at the Centre for Eye Research Australia, University of Melbourne. I completed medical school in 1992, clinical training in ophthalmology in 1999 and my Ph.D. in Epidemiology from the Johns Hopkins University, USA, in 2002.

My research has identified a novel biomarker of cardiovascular risk based on an assessment of the tiny blood vessels in the retina. These vessels are accessible to direct non-invasive examination, and damage to these vessels may mirror similar damage elsewhere in the heart and brain. In the last 6 years since my PhD, my research has been focused on determining if measurement of retinal vessel damage may help in the diagnostic prediction of cardiovascular diseases. I and my team have developed novel methods to image and quantify subtle damage in the retinal blood vessels, and have shown that such damage indicates future risk of stroke, heart disease, diabetes, and hypertension. This predictive nature is independent of traditional tests, and appears useful even in people at low risk of cardiovascular disease.

I have published >150 papers in the last 6 years (2001 onwards, see CV), including papers in the highest impact general medical journals, such as the *New England Journal of Medicine (2004), the Lancet (2001, 2006), the Journal of the American Medical Association (2002, 2005), the British Medical Journal (2004, 2006), Annals of Internal Medicine (2004, 2006), and Archives of Internal Medicine (2005, 2006).* Our research has been cited in international clinical guidelines, such the *Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure, 7th report,* which used this research to show the value of a retinal examination for risk stratification.

I have received grants in excess of $14M from the National Health and Medical Research Council (NH&MRC), the National Institutes of Health (NIH), USA, and the National Heart Foundation to pursue this line of research. My research team is one of few groups funded by NIH in Australia. Currently, I am the Principal or Chief Investigator of multi-centered projects in Australia, the US and Singapore further investigating the link between retinal damage and cardiovascular diseases. In 2005, I received a Science, Technology and Innovation Grant from the Victorian State Government to build a $6M Retinal Vascular Imaging Centre to undertake translational research capability in this field.

For research in this area, I have been honored with numerous awards in the field of ophthalmology, cardiovascular medicine and diabetes. The following demonstrates the breadth and impact of my work. I have been awarded the Ten Outstanding Young Person of the World for “academic leadership in people younger than 40 years of age” and the Sandra Doherty Award from the American Heart Association for excellence in “cardiovascular disease and hypertension epidemiology”. I have been recognized as the top researcher in any field from two Universities: the Outstanding Researcher Award from the National University of Singapore for my work in Singapore prior to my appointment in Melbourne and the Woodward Medal in Science and Technology from the University of Melbourne.

In 2006 alone, my research received three prestigious awards. I was the recipient of Alcon Research Institute Award, one of few outside the U.S.A. to receive this award for “outstanding contribution to vision and ophthalmology research”. I was awarded the Novartis Prize in Diabetes (Young Investigator) to “recognize innovative patient-oriented research in the fields of physiology, pathophysiology or epidemiology of diabetes mellitus and its complications”. Finally, I was awarded the 2006Commonwealth Health Minister’s Award for Excellence in Health and Medical Research.

I believe my research may provide a novel means to prevent and treat cardiovascular disease by more precisely identifying people who are at risk earlier. We are working towards the goal to determine if a retinal imaging may be used for screening these cardiovascular diseases in the community.