

# INTERVIEW WITH PROFESSOR WONG TIEN YIN

By Dr Jeremy Lim, Editorial Board Member

Prof Wong Tien Yin is Director of the Singapore Eye Research Institute and holds the position of Senior Consultant at the Singapore National Eye Centre and the National University Health System. He is also a Professor at the Department of Ophthalmology at the National University of Singapore, and mentors a generation of would-be clinician scientists embarking on a journey of scientific discovery.

A pioneer in the arena of clinician scientists with a keen interest in research, he has developed diagnostic platforms for retinal imaging to assess a patient's cardiovascular and diabetes risk; findings of great significance to public health benefits for Singapore and other countries where cardiovascular disease and diabetes are the leading causes of death and morbidity.

Prof Wong's involvement in international large-scale epidemiological studies is widely recognised, and the studies are widely cited. He has published more than 500 peer-reviewed papers, and has awards in ophthalmology, cardiovascular disease and diabetes. He is the only ophthalmologist worldwide to receive the Sandra Doherty Award from the American Heart Association for cardiovascular research, and the second ophthalmologist to receive the Novartis Prize in Diabetes Global Award. For his outstanding contributions in translational and clinical research in ophthalmology and his novel approach in linking retinal imaging to diagnose human vascular and metabolic disease, Prof Wong was awarded the 2010 National Outstanding Clinician Scientist Award, as well as the 2010 President's Science Award.

Here, Prof Wong shares his thoughts on his journey as a clinician scientist with Dr Jeremy Lim.



The SMA Council offers its  
heartiest congratulations to  
**Prof Wong Tien Yin**  
On being conferred the 2010  
President's Science Award

**DR JEREMY LIM - JL:** Congratulations on winning the President's award. Can you share what you were doing when you received news of the award?

**PROF WONG TIEN YIN - WTY:** I got the email from the awards secretariat on my Blackberry at 1002am on 12 August. Actually, it was a typical day for me. I was in the middle of a busy retinal clinic at the Singapore National Eye Centre (SNEC) with my fellow and a registrar. I had already had five solid hours of work prior to this. I usually wake up at about 5am, and respond to emails that come in the night before from colleagues and collaborators from the US/Europe. I then spend my time writing papers or grants, as it is the only time of the day that is uninterrupted. I had an early morning meeting at 7am with Profs Tan Ser Kiat and Soo Khee Chee to discuss research

this meeting, to the disappointment of the organisers. I would later arrange to give that lecture via videoconferencing.

Nevertheless, I was in a very good mood for the rest of the day!

**JL:** What first attracted you to research and what were some of the significant moments of the journey thus far?

**WTY:** I never imagined myself choosing a career in this direction, or that I would be so passionate about a career as a clinician scientist.

Like many young doctors, I was hoping to get into a clinical specialist programme after housemanship. I was thinking of general surgery or cardiology. In fact, ophthalmology was not even my first choice. I guess there were two pivotal moments that shaped my

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strategies for SingHealth. At 8am, I had another meeting with a junior medical officer who wanted guidance and advice on choosing ophthalmology as a career. My clinic then began at 9am.

So, in a sense, I was very pleased and excited to see this email. I did not expect it. When NUS Dean Prof John Wong nominated me for the award early this year, I had initially declined, as my colleagues at the Singapore Eye Research Institute (SERI), Profs Donald Tan, Roger Beuerman and Aung Tin received the same award last year in 2009, and I thought it would be quite unlikely that they would give the award to eye doctors for two years in a row. So it was a total surprise!

After I got the email, I forwarded it to my wife, and then to my personal assistant to make sure I was in Singapore during the day of the award – in fact, I had accepted an invitation to give a plenary lecture at an eye conference in Canada. I obviously had to withdraw from

career.

First was a chance meeting with Professor Arthur Lim in early 1990s. He spoke to me for about an hour, and encouraged me to do ophthalmology. He provided a vision of excellence and a bright future for ophthalmology. I thought the “sky was the limit”, and I think this was the moment I was attracted to ophthalmology. I applied and got into the training programme which was to begin in 1996 after my national service. In late 1995, while still in NS, a famous ophthalmologist, Prof Alfred Sommer, from Johns Hopkins University Wilmer Eye Institute and Dean of the School of Public Health, visited Singapore on the invitation of Prof Lim. “Al Sommer” discovered the link between vitamin A deficiency and blindness and mortality, and was recently awarded the Albert Lasker Award, known widely as the American Nobel Prize for this work.

After his lecture at the SNEC, I had the

opportunity to speak to him briefly for about 15 minutes. He ended up saying, “Come to Johns Hopkins and spend a year with us.” I wrote to him and after several months of snail mail, I was accepted into a research fellowship, the Public Health Ophthalmology Programme, at Johns Hopkins. So I spent a year at Hopkins, got a MPH degree, completed a research fellowship, made many friends, and published eight papers. This was the first “bite” of research, and I was hooked! I came back to Singapore to start my clinical training.

My second major career moment came when I finished my basic training in ophthalmology. One of the first clinician scientists and one of few doctors with a Ph.D in Singapore, A/Prof Chew Sek Jin, passed away tragically from brain cancer at a young age in 1998. Sek Jin was the

learnt from overseas that are important for the successful development of academic medicine in Singapore.

First, it is the need to instill a culture that “academic medicine” is now critical to the development and progress of medicine in general in Singapore. We need to recognise why it is important for Singapore. We need to ask ourselves and understand what our patients need in 20 years time. Does Singapore medicine need to reinvent itself, and to differentiate and excel from hospitals and healthcare systems in surrounding countries? We need to understand why Johns Hopkins and Duke are successful and how we can emulate their culture – this is one of the key reasons why we brought Duke into Singapore in the first place – and how we can model Duke to develop our own unique Singapore “brand”

patients. But now, I think there is a slow realisation that we need innovative solutions to healthcare, to tackle chronic complex diseases of an aging population, to meet the growing needs of patients who demand better, more cost-effective and high quality health care. There is this realisation that investing in biomedical research in Singapore transforms the way we practice medicine, and will ultimately improve care and saves lives. This cannot be delivered if we just continue “doing the same”. However, we have to be realistic. An academic medicine culture takes time – you cannot expect this to happen in our Singapore hospitals and systems in two to three years. You need a clear vision, long-term strategic planning and the courage and resolve to see rewards that will only occur in five or ten years.

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Director of the SERI, then a fledgling research institute in its infancy. I remember having a conversation with then-Medical Director of SNEC, Dr Vivian Balakrishnan, who asked me to consider taking over the reins of SERI. I said that I needed further training and more time to establish myself. So in 1999, I left for my second stint at Johns Hopkins, this time to pursue a Ph.D. This was followed by a fellowship at the University of Wisconsin-Madison. I got my first NIH grant, a pivotal paper in the Lancet in 2001 and my career as a clinician scientist was set.

My advice to younger doctors is that we cannot plan our lives too much. We should take opportunities that come, and do the best we can with those opportunities.

**JL:** You’ve lived in the United States, Australia and Singapore and worked in many different academic centers. Drawing from these experiences, what are your thoughts on what makes for a successful academic center?

**WTY:** There are three elements that I have

of academic medicine. Academic medicine can possibly answer all these questions and more. Academic medicine will create a “buzz” in our healthcare systems and hospitals seen in Johns Hopkins, Duke and Mayo clinics. It will provide an exciting environment to work, an environment that recognises different roles of doctors, and ultimately it will serve to retain the best doctors by providing varied career development opportunities.

Of course, we also need to debate about the possible problems. Will academic medicine be too costly? Will it lead to more expensive use of diagnostics and treatment? Do we then need to train more doctors? There are many questions, but we are at least now asking these questions and slowly tackling them. I recently told Permanent Secretary (Health) Ms Yong Ying-I that we are now, for the first time, able to speak openly of academic medical centres (AMC) in Singapore, at SingHealth and NUHS, without AMCs as being seen as “politically incorrect”. For a long time, we feared this would give the impression to the public that AMCs would only mean greater costs to our

Second, it is people. We need the right people to make academic medicine work. We need to identify, nurture and groom a new generation of young doctors who accept academic medicine as part of Singapore’s training and healthcare system. We need young doctors who do not see pure clinical service as the only way they can contribute to our healthcare system, but are recognised and rewarded for their contribution to academic medicine, be it in innovative research or teaching. We need young doctors (and their family and relatives) who do not see private practice as the ultimate endpoint in their careers. I still have many relatives and friends who ask me “so when you going to private practice?” We need new role models who are like the eminent giants such as Profs Seah Cheng Siang, Wong Hock Boon and others. However, we cannot keep referring back to them as the only role models for the future. We need “heroes” who embody academic medicine, clinician scientists and key thought leaders who have made connections between discovery and treatment, and science and



clinical practice, challenging but enjoyable research, and administrative duties that focus on institute development, and training and career development of younger researchers and clinician scientists.

**JL:** You pursued both a Masters in Public Health and a Ph.D from Johns Hopkins. What sort of training should a clinician scientist have? And more generally, what would be your advice for the budding clinician scientist?

**WTY:** One cannot be a well-trained clinician without years of training and a post-graduate clinical degree. Why should research be different? I think there is no substitute for formal training in research, with a minimum of a Masters degree, like MPH, or the MCI course run at NUS, and at least two years of research training.

My advice to budding clinician scientists is to first ask yourselves the following questions when thinking about career – Are you ambitious and want to influence and change medicine? Do you want to do something in your life that is different from the well-trodden path? Do you want to be a thought leader who can influence clinical practice? Do you want to make a major breakthrough in medicine and perhaps contribute towards the discovery of the cure for diabetes or cancer? If the answers are all yes, you may wish to explore a clinician scientist career pathway. Second, give research a try. Do a project with an outstanding researcher or clinician scientist. See if you like it.

**JL:** You said before that it was a “privilege to be a clinician scientist”, what are some of the responsibilities and duties that come with this privilege?

**WTY:** It is our responsibility to ensure that the research funds we are given are used judiciously and appropriately. It is our responsibility to ensure that young researchers and students who work for us are given high quality training, close mentorship and career guidance. Finally, it is our duty to the patients who participate in clinical trials that we conduct our research to the highest ethical standards, and that their data is used to improve understanding of diseases, discover cures, and improve healthcare. **SMA**

medicine.

Finally, we need a supporting environment and system. Both SingHealth and NUHS are making substantial progress in this area. Top leadership now recognises that the major hospitals need major university partners. All major teaching hospitals in US, UK and Australia have this close partnership. There is the need for the next “level” of leadership to support academic medicine. Thus, over time, heads of departments in teaching hospitals must have to have a strong academic mission, instead of having KPIs based purely on clinical work. Then, there must be a clear system to

reward and recognise research and teaching. Currently, the system is too heavily slanted towards recognising only clinical service. We are, however, making considerable progress in these areas.

**JL:** How do you juggle the heavy demands of clinical practice, ground-breaking research, increasing administrative duties and the life of a family man? Do you sleep?

**WTY:** In fact, I would say that I have a fairly good work-life balance! I think this balance is important to juggle a career that combines