

PRESIDENT'S SCIENCE AWARD 2019

Team comprising:

Associate Professor Audrey Chia

Co-Head, Myopia Research, Singapore Eye Research Institute
Co-Director, Myopia Centre @ Bedok, Singapore National Eye Centre
Vice-Chair, Ophthalmology & Visual Sciences Academic Clinical Programme (ACP),
Duke-NUS Medical School
Head, Paediatric and Strabismus Service, Singapore National Eye Centre & KK
Women's and Children's Hospital

Professor Saw Seang Mei

Co-Head, Myopia Research, Singapore Eye Research Institute
Professor, Saw Swee Hock School of Public Health, National University of Singapore
Joint Professor, Duke-NUS Medical School

Professor Roger Beuerman

Senior Scientific Advisor, Singapore Eye Research Institute
Professor, SRP in Neuroscience and Behavioural Disorders,
Professor, Emerging Infectious Diseases,
Professor, Ophthalmology & Visual Sciences ACP,
Duke-NUS Medical School

Adjunct Professor Donald Tan

Adjunct Professor, Ophthalmology & Visual Sciences ACP, Duke-NUS Medical School
Senior Scientific Advisor, Singapore Eye Research Institute
Visiting Senior Consultant, Singapore National Eye Centre
Senior Partner, Eye & Retina Surgeons, Camden Medical Centre

“For their dedicated research spanning over three decades in the field of myopia, which resulted in public health strategies and interventional myopia control therapies which help decrease the rates of myopia/high myopia, and myopia-related blindness in Singapore”

There is rapidly growing interest around the world in myopia and strategies for its prevention. Among young adults in urban East Asian cities, such as Singapore, the prevalence of myopia has risen to more than 80 per cent, and high myopia by more than 15 per cent. Myopia rates are also increasing in the West. By 2050, it is estimated that half the world's population will be myopic.

The team from the Singapore Eye Research Institute (SERI) has worked through the Ministry of Health's National Myopia Prevention Programme since 2001 to initiate public health messages that encourage more outdoor activity and better eye habits amongst children in kindergartens and schools. The team is also working on wearables and phone apps to help children and parents better manage outdoor activities and use of mobile devices.

As co-leaders of the Consortium for Refractive Error and Myopia consortium which has pooled together genetic information of more than 50,000 adults, the team has contributed to the identification of new gene clusters associated with myopia. They plan to leverage this research capability to identify genetic markers that will help predict response to intervention and novel therapeutic options.

In terms of interventional clinical studies, the team has conducted a range of trials involving glasses, contact lens, and pharmacological agents. In particular, the Atropine Treatment of Myopia (ATOM) studies, are instrumental in demonstrating the efficacy of atropine eye drops. They are also the first to identify low-dose atropine as a viable treatment option that is both safe and effective for long-term use in children. This work has triggered many other interventional trials globally. The team has now embarked on its third ATOM study to see if myopia onset can be prevented in pre-myopic children who are at risk of developing high myopia.

Moving forward, there are ongoing major, large-scale industry collaborative programmes on myopia therapeutics with global companies, such as Santen and Johnson & Johnson Vision Care. These aim to work on new therapeutic agents, delivery systems, and the management of preventing myopic complications and blindness over the next decade. Together with local and international collaborators, the team hopes to develop better clinical guidelines to manage myopia in childhood, as well as identify and prevent myopic complications and blindness in adulthood.

For their dedicated research spanning over three decades in the field of myopia, which has resulted in public health strategies and interventional myopia control therapies to help decrease the rates of myopia/high myopia, and myopia-related blindness in Singapore, Professor Chia and team are awarded the 2019 President's Science Award.