
SIGHT MATTERS

Annual Report **FY2017/2018**

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ABOUT US

Established in 1997, the Singapore Eye Research Institute (SERI) is Singapore's national research institute for ophthalmic and vision research. It is the research arm of the Singapore National Eye Centre, and affiliated to the National University of Singapore and the Duke-NUS Medical School. In two decades, SERI has grown from a team of 5 to over 193 staff, encompassing clinician scientists, scientists, fellows, students, support staff, as well as more than 211 distinguished adjunct faculty members to become the largest eye research institute in the Asia-Pacific region. As of Mar 2018, SERI has published 3,170 peer-reviewed papers supported by \$282 million in competitive research grants. SERI has trained more than 187 current and past graduate students; and has been conferred over 477 national & international awards and 129 patents. SERI further undertakes eye research in collaboration with local & international ophthalmic medical centres and research institutions, which has ensured a high level of research competency & skills transfer. Notably, SERI's research has translated to actual patient success stories & significant improvements in eye care delivery. Today, SERI is recognized as a pioneering center for high quality eye research in Asia, with breakthrough discoveries that has translated to significant paradigm shift in eye care delivery.

CHAIRMAN'S MESSAGE



Since its establishment in 1997, SERI has grown from a founding team of five to a faculty of 193 encompassing clinician scientists, scientists, research fellows, PhD students and supporting staff, with an annual budget of approximately S\$35 million.

SERI's success in eye and vision research can be attributed to farsighted leadership, focus on translational research, a robust and optimized shared research core capabilities support structure, the pre-mediated nurturing and cultivation of clinician scientists, a prudent research governance system and a comprehensive network of clinicians and researchers in SERI-affiliated institutions throughout Singapore. SERI has further forged important and strategic research alliances with major academic partners, such as public healthcare Ophthalmology departments, NUS, Duke-NUS, NTU and A*STAR.

SERI and NTU are working towards setting up the SERI-NTU ADVANCED OCULAR ENGINEERING (STANCE) programme, which includes the setting-up of a SERI-NTU Joint Imaging Laboratory. The emphasis of this 3-year program will be on translation medical technology, with significant opportunities for clinical utility and commercialization. For longer-term sustainability, SERI and NTU intent to jointly apply for the IAF funding, in addition to other competitive national grants.

SERI will continue in its efforts to fortify its basic science core, by recruiting candidates with strong track records in internationally competitive fundamental and translational research in the area of Visual Sciences and Vision Disorders. In this regard, SNEC/SERI in collaboration with Duke-NUS has established a joint SingHealth Duke-NUS initiative i.e. the Duke-NUS Center for Vision Research (CVR), in conjunction with the SingHealth and Duke-NUS academic medicine partnership. SERI will leverage on its strategic Academic medicine partnership with Duke-NUS, to recruit 3 tenure-track regular-rank faculty, as part of the Center for Vision Research (CVR), Duke-NUS. It is SERI's constant advocacy for multi-disciplinary, inter-institutional collaborations that has paved the way for greater synergies and diversity in its research, and facilitated the exploration of complex and systemic biomedical themes.

I am also happy to announce that as part of SERI's leadership succession planning, A/Prof Jodhbir Mehta, was appointed as Deputy Executive Director, effective 1 January 2018. A/Prof Mehta, who is concurrently the Head and Senior Consultant, Corneal & External Eye Disease Department, SNEC; and Principal Clinician Scientist, SERI, will work closely with SERI's Executive Director, Prof Aung Tin to jointly lead the overall stewardship of the Institute and its research mission and goals, as well as further advance SNEC/SERI's vision of being trailblazers of world-class eye research.

I would like to thank our distinguished faculty, colleagues. It is only because of your talent, vision and perseverance that SERI is able to have the confidence of working with our partners to conduct innovative and world leading basic science, clinical and translational eye and vision research.



Professor Wong Tien Yin
Chairman

EXECUTIVE DIRECTOR'S MESSAGE



This year marks the 20th anniversary of SERI, and we are reaching ever more exciting stages on our path of translational research in ophthalmology. Our research endeavour over the last 20 years has made strategic advancement of key research foci, including research with direct impact on clinical outcomes, as well as demonstrating clear positive economic impact/ return on investment (ROI).

In this year alone, SERI has secured more than \$52 million in competitive peer-reviewed grants, received 47 national and international awards, published more than 337 scientific papers and filed 10 patents. Our \$25 million TCR flagship programme, Eye Surgery and Innovative Technologies (EyeSITe) underwent the final on-site review by the international Scientific Advisory Board (SAB) in August 2017. The SAB had reiterated that the *“overall achievements of the EyeSITe TCR Flagship Programme at SERI were impressive and impactful”* and *“by any of the NMRC-aligned objective measures, this TCR EyeSITe Flagship Programme has been an outstanding success”*.

Further demonstrating our success in achieving international recognition and prominence, SERI has embarked on a major strategic collaboration with Santen, a large Japanese Ophthalmological pharmaceutical company. This strategic collaboration includes setting up a joint laboratory at SERI with co-investment from both Santen and the Singapore government's Industry Alignment Fund, at a total of \$37 million. This 5 year collaboration will entail multiple R&D projects spanning several ophthalmic domains, with the aim of developing a range of impactful and beneficial new technologies.

This year, we also celebrate the first successful spin-off company from SERI-SNEC Ophthalmic Technologies Incubator programme, plano®. plano® is a parental management app that encourages healthy and safe smart device use in children worldwide. It can help to minimize the potential adverse visual outcomes from using smart devices in young children. Another spin-off from SERI, EyRIS Pte Ltd, was established in February 2018. EyRIS makes use of one of SERI's core technology, an AI-based retinal image analysis programme that can be used for screening of eye diseases. In addition to incorporating this AI innovation into the Singapore National DR Screening framework (Singapore Integrated Diabetic Retinopathy Programme: SIDRP), EyRIS is also currently planning to bring it to use in a much wider market outside Singapore.

Our studies on the development of myopia in Singapore's children over the last 20 years have found that the use of low dose atropine eye drops have achieved close to a 60% reduction in myopia progression. This low dose atropine product (named “Myopine”) has been licensed to a number of industrial partners and will be sold in markets around the world, benefiting myopic children in many countries.

There has been a growing emphasis on commercialization and industrial alignment of academic research in Singapore. There remains a need for SERI to be keenly attuned to the evolving landscape, and consequently, make strategic efforts in areas of research that align with the national funding agenda, by directly addressing national healthcare burden needs, as well as carrying out research that creates economic value for the nation.



Prof Aung Tin
Executive Director

INSTITUTIONAL REPORT

BACKGROUND

The Singapore Eye Research Institute (SERI), affiliated to the Singapore National Eye Centre, the National University of Singapore, and the Duke-NUS Medical School is a non-profit charitable organization tasked to lead and conduct research into vision and eye diseases based in Singapore and focused on Asia. It further works in collaboration with Ophthalmology departments of the various public healthcare entities and biomedical research institutions, as well as major eye centers and research institutes throughout the world. SERI has developed a world-leading reputation in broad-based clinical translational research and epidemiological programs for many eye diseases, specifically eye diseases endemic to Asia, such as myopia, angle closure glaucoma, and corneal diseases.

KEY PERFORMANCE INDICATORS

- SERI is one of the largest research institutes in Singapore and the largest eye research institute in the Asia Pacific, with a faculty of 193, encompassing clinician scientists, scientists, fellows, students and support staff.
- SERI has successfully secured external peer-reviewed competitive grant funding worth approximately S\$ 53.39 million this year, and a cumulative quantum of approximately S\$282 million.
- SERI continues its leading performance in publication, with 339 scientific papers published this year, and with a cumulative publication quantum of 3,170 scientific papers.
- As of March 2018, the SERI faculty has received 477 national and international awards with 129 patent applications being filed during the same period.
- Since 1997, SERI has conducted 1515 studies, encompassing the entire spectrum of eye research, from basic laboratory research, pre-clinical animal research, translational clinical research, and population health research. There are currently 404 ongoing research projects at SERI, of which approximately 70% cover clinical/translational research, 12 % basic research and 18% epidemiology, imaging and health service research.
- SERI has further contributed to the training of research manpower, including over 168 Masters, PhD and post-doctoral students, many of whom are now working in hospitals, biomedical sciences industry, academic institutions and research institutes locally and overseas.

ACHIEVEMENTS & INNOVATIONS

- **\$37 Million Santen-SERI Open Innovation Centre (SONIC), jointly funded by Industry Alignment Fund – Industry Collaboration Projects (IAF-ICP) Grant and Santen**

SERI has embarked on a strategic, five-year collaboration with Santen Pharmaceutical company to develop new technologies in ophthalmology by bringing together the two parties' capabilities in ophthalmic R&D, with a special focus on diseases prevalent in Asia.

SERI and Santen have been actively collaborating using a co-development model over the past two years, with five R&D projects underway in a number of ophthalmic domains. Leveraging on the two parties' existing collaboration, the current collaborative key research programmes will be expanded and extended to include additional therapeutic domains and technologies, and a joint set up of the SERI-Santen research laboratory at the Academia building at the SGH campus. This research focus brings together Santen's asset portfolio and longstanding drug development program, and SERI's novel technologies and translational research capabilities.

These co-development R&D activities will focus on a number of key ophthalmic domains in which SERI and Santen have deep experience and can achieve substantial synergy in working together, such as glaucoma, diabetic retinopathy, ocular infections and myopia, with the goal of establishing a robust pipeline of ophthalmic products which will benefit patients in Singapore, Asia and globally.

- **PLANO: The Third Successful Spin-Off From SERI**

With rapid advancements in technology today, research has shown that the general population has developed a higher dependency on smart devices. This could lead to bad habits that are harmful for general and eye health. For instance, excessive device use can result in ocular symptoms, and increase risk factors associated with myopia, such as time spent on near work, distance of device held from one's eyes, childhood obesity, and the formation of bad body postures that can have long term effects.

To better manage this phenomenon, plano[®] was created to revolutionize the way smart devices (phones and tablets) are used to help minimize the potential adverse outcomes that may result from the inappropriate use of these devices.

Co-funded by the SERI-SNEC Incubator and the National Health Innovation Centre (NHIC) Singapore, plano[®] is a parental management app that encourages healthy and safe smart device use in children worldwide. plano[®] is the first start-up company to be spun off from the SERI-SNEC Ophthalmic Technologies Incubator, and the third spin-off company to be created pursuant to SERI's research.

The SERI-SNEC Ophthalmic Technologies Incubator programme was first introduced in 2013. The programme is dedicated to supporting and nurturing highly promising ophthalmic R&D projects, accelerating them towards commercialization and medical deployment via the creation of start-up companies, such as plano[®]. SERI's Technology Development and Commercialization team worked closely with the plano[®] project team, in providing support in regulatory submissions, Intellectual Property (IP), market research, business planning and financial modelling and other relevant areas.

- **Establishment of the Center for Vision Research (CVR)**

SNEC/SERI, in collaboration with Duke-NUS is pleased to announce a joint SingHealth Duke-NUS initiative, the Duke-NUS Center for Vision Research (CVR), to be established and institutionally recognized in conjunction with the SingHealth and Duke-NUS academic medicine partnership.

By virtue of its institutional recognition, CVR will validate SingHealth and Duke-NUS's commitment to secure a leading position globally in the area of ocular and vision sciences research. It is further envisioned that CVR will serve as a precursor towards the eventual establishment of the 6th SRP i.e. the Ophthalmology and Visual Sciences Signature Research Program (EYE SRP).

- **SERI-NTU ADVANCED OCULAR ENGINEERING (STANCE) Programme**

SERI is collaborating with the Lee Kong Chian School of Medicine, NTU towards the establishment of the SERI-NTU ADVANCED OCULAR ENGINEERING (STANCE) programme, which includes the setting-up of a SERI-NTU Joint Imaging Laboratory. This will also serve as a broader initiative to engage with TTSH/NHG Eye Institute to further consolidate SERI's national role, and to ensure that SERI and eye research continue to be globally competitive.

The emphasis of this program will be on translation medical technology, with significant opportunities for clinical utility and commercialization.

- **Review of SERI's Translational Clinical Research Programme, Eye Surgery and Innovative Technologies (EYESITE), by NMRC-Appointed International Scientific Advisory Board**

SERI was awarded a \$25 million TCR flagship programme, Eye Surgery and Innovative Technologies (EyeSITe) that was built upon the strength of SERI's previous TCR flagship programme, Translational Research Innovations in Ocular Surgery (TRIOS).

EyeSITe intended to develop novel and innovative approaches to diagnose and treat corneal diseases and glaucoma (2 of the major causes of blindness worldwide), and is represented by 5 themes i.e.

Theme 1: Antimicrobial Molecules Against Ocular Pathogens

Theme 2: Novel Ocular Drug Delivery Systems

Theme 3: The Bionic Cornea.

Theme 4: Femtosecond Laser-Assisted Ocular Surgery Systems

Theme 5: Stratified Medicine for Primary Angle-Closure Glaucoma

The EyeSITe program underwent a final on-site review by an NMRC-appointed International Scientific Advisory Board on its fourth year in August 2017.

The TCR Flagship Programme has achieved its planned objective and KPIs for the first 4 years of the review period (2013-2017). Its research performance has been truly outstanding with over 100 papers in prestigious journals and over 90 presentations at major international conferences. In terms of international standing, the lead PIs and their teams are at the forefront of research in terms of reputation and research productivity. The research manpower quality index has been excellent with 5 PhD students trained and graduated and 12 post-docs employed to date. Lat but not least, two startup companies (SinSa Labs and Peregrine Ophthalmic) were set up based on the research outcomes of this grant.

- **The Eye Ball 2017**

SNEC/ SERI has hosted The EYE Ball 2017, in partnership with the Singapore Tatler, embodying a legacy of strong partnership over a period of 6 years. This event was held on Saturday, 4 November 2016, at the Windsor Ballroom, Goodwood Park Hotel.

Similar to the previous years, the EYE Ball 2017 intends to spread awareness of eye diseases and the fragility of vision, while concurrently raising funds for SNEC/ SERI's VisionSave fund raising campaign. This year's this year's program will once again be led by celebrity Dick Lee, as the creative Director.

As in the previous year, SNEC/ SERI once again presented The Visionary Award at the EYE Ball. The intent of this award is to raise the profile and add prestige to the VisionSave campaign, the EYE Ball, and indirectly, SNEC/ SERI; and to hopefully expand our network of guests, supporters and donors

This award recognizes the resolute commitment by an individual towards a vision that has led to societal benefit in Singapore and beyond. It serves as a unique recognition rendered to individuals whose stellar achievements and selfless spirit have made a positive impact towards a better Singapore, and possibly the region or the world. Importantly, this award serves as a reflection.

This year's awardee is Dr Lee Seng Tee, Chairman, Lee Foundation who is being conferred The Visionary Award for his contributions towards the advancement of Education and Research, as well as promoting the Arts and Asian culture.

PERFORMANCE OVER THE YEARS

- SERI has amassed an impressive array of publications over the years, increasing both in quantity and quality over the past several years.

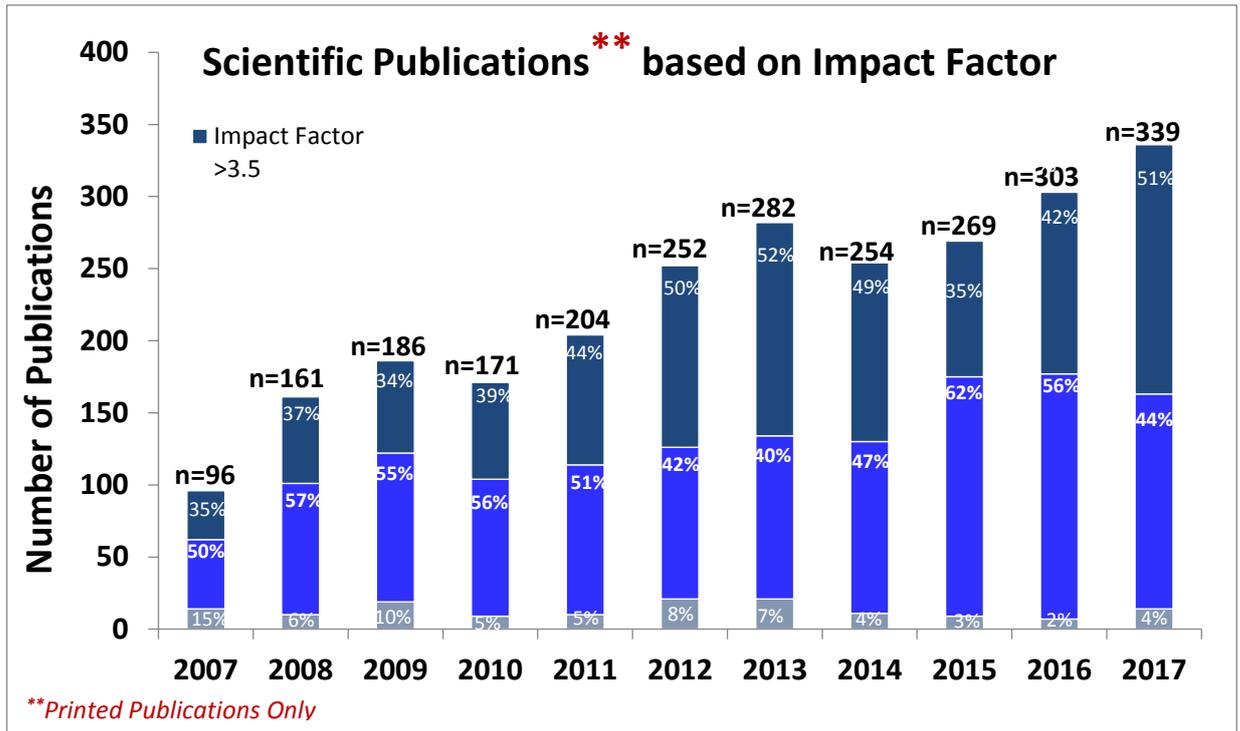


Figure 1: Number of yearly publications published at SERI

- SERI stands out as one of the most productive institutions and well holds up against global heavyweights in the field.

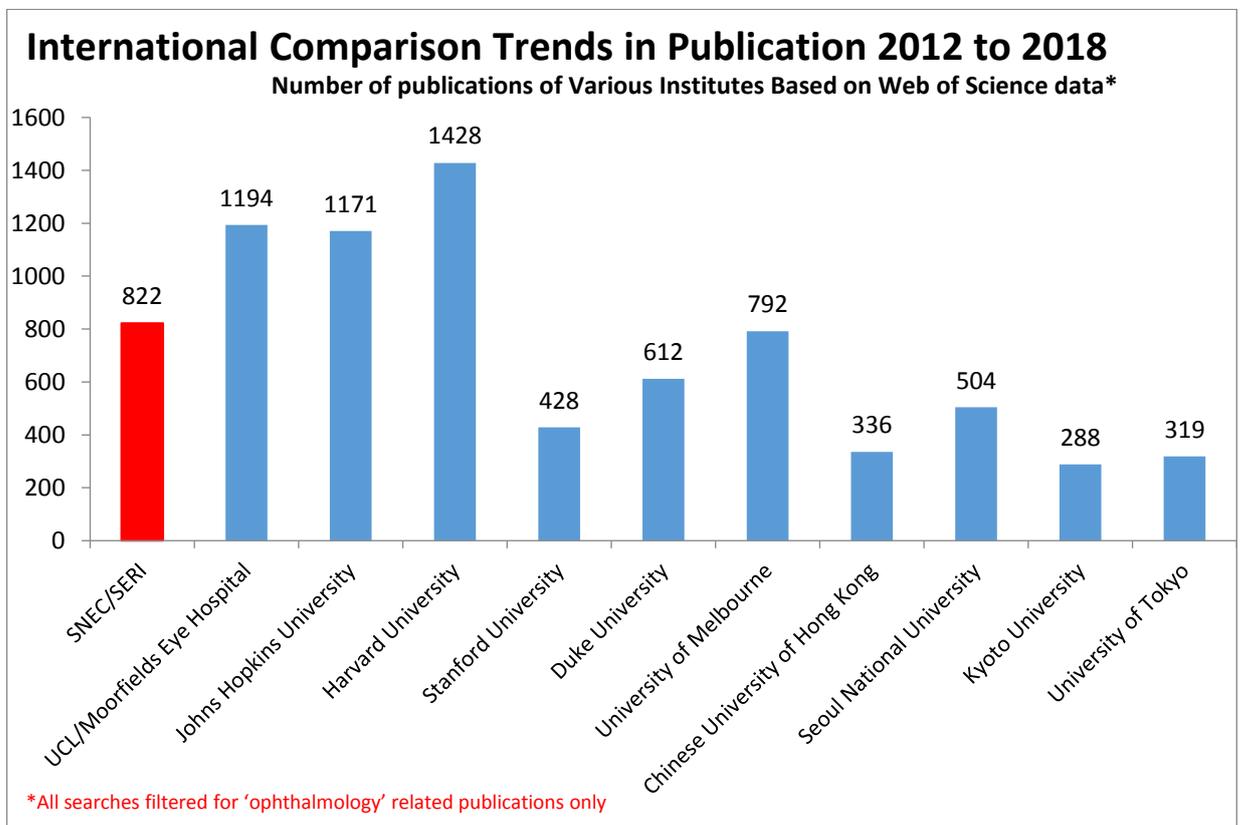


Figure 2: Number of publications by SERI and other institutions around the world, during the period of 2012 – 2018

- SERI's staff strength over the years.

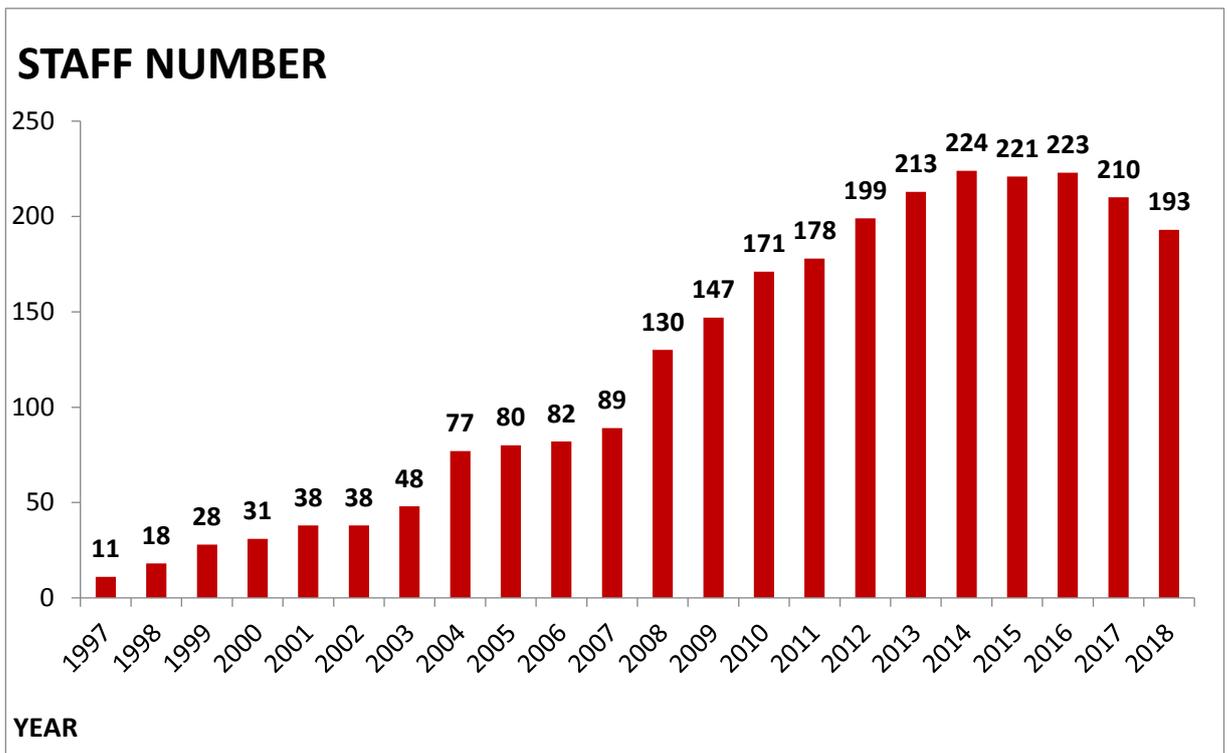


Figure 3: Number of staff members at SERI

- SERI benefits from a diverse and global faculty that serves as melting pot of ideas that propels innovation.



Figure 4: Nationalities of staff members at SERI

- The stellar achievements of SERI have been well endorsed with numerous international and local awards.

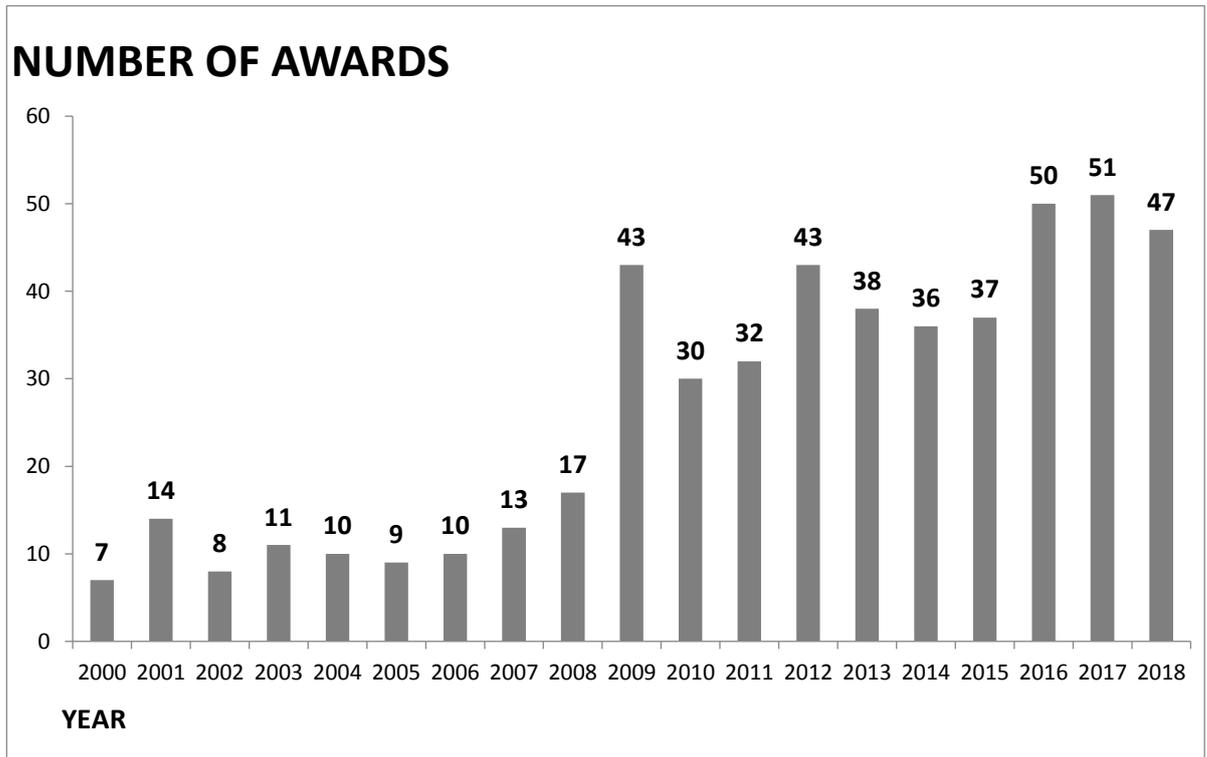


Figure 5: Number of awards received by SERI and its staff (Data from 1997-1999 are not available)

APPRECIATION & ACKNOWLEDGEMENT

SERI owes its success to its people – the honorable SERI Board of Directors, our eminent academic collaborators, the senior management, and clinicians of the Singapore National Eye Centre (SNEC), as well as, very importantly, the SERI faculty and staff members.

However, our greatest gratitude is reserved for our patients and their families. They are the driving force behind all that we do. Indeed, their journey and courage spur us on in our research endeavors and make us determined to make a positive difference to their vision and their lives.

SERI would also like to extend our appreciation to the National Medical Research Council, the Biomedical Research Council, the National Research Foundation, as well as our industry collaborators for their generous funding and support. It enables us to continue in our pursuit of impactful research with the ultimate aim to alleviate vision loss and blinding eye diseases.

OUR PEOPLE

SERI's BOARD OF DIRECTORS

SERI's Memorandum and Articles of Association stipulates that the SERI Board of Directors shall have at least one representative each from the Ministry of Health, the National University of Singapore and the Singapore National Eye Centre. Today, besides representation from the above three organizations, SERI's Board additionally has Directors from the Duke-NUS Graduate Medical School, Lee Kong Chian School of Medicine, SingHealth, National Healthcare Group as well as M C Tong Cardiothoracic Surgery Pte Ltd.



Prof Wong Tien Yin
Medical Director,
Singapore National Eye Centre

Chairman,
Singapore Eye Research Institute



Dr Lim Eng Kok
Director, Performance & Technology Assessment,
Ministry of Health



Prof Ang Chong Lye
Deputy Group CEO
(Clinical Services & Informatics), SingHealth

CEO,
Singapore General Hospital



Prof Soo Khee Chee
Deputy Group CEO (Research & Education),
SingHealth

Director,
National Cancer Centre Singapore



Assoc Prof Yeoh Khay Guan
Dean, Yong Loo Lin School of Medicine,
National University of Singapore



Ms Ooi Chee Kar
Chartered Accountant (Singapore)



Dr Geh Min
Consultant Eye Surgeon,
M C Tong Cardiothoracic Surgery Pte Ltd



Prof Thomas Coffman
Dean
Duke-NUS Medical School



Prof Wang Linfa
Program Director,
Emerging Infectious Diseases
Duke-NUS Medical School



Prof James Best
Dean,
Lee Kong Chian School of Medicine



Prof Lim Tock Han
Deputy Group CEO (Education & Research),
National Healthcare Group

Senior Consultant,
NHG Institute,
Tan Tock Seng Hospital

SERI's DIRECTORS / STRATEGIC PLANNING COMMITTEE

The SERI Directors/ Strategic Planning Committee serves as the highest governing body at SERI, working closely with the Executive Director, SERI to ensure the overall stewardship of the Institute; leading and promoting research within the Institute; ensuring sufficient funding to ensure its future viability; safeguarding overall governance and integrity of the Institute; and proactively increasing the visibility and broadening of research collaborations with national and international agencies.



Prof Aung Tin
Executive Director



Assoc Prof Jodhbir Mehta
Deputy Executive Director



Prof Leopold Schmetterer
Scientific Director



Prof Ecosse Lamoureux
Director, Population Health



Ms Sharmila Kannan
*Director, Administration,
Research Affairs & Support Services*



Dr Danny Belkin
*Director, Technology Development
& Commercialization*



Assoc Prof Eranga Vithana
Director, Laboratory Translational Research

SERI'S MANAGEMENT COMMITTEE

The SERI Management Committee serves as a principle body actively engaged in the review and implementation of SERI's research policies and strategies. It further plays an integral role in conceptualizing SERI's research framework, in consultation with the SERI Senior Leadership, as the Institute moves onwards to face new challenges in its strive for continued research excellence.



Prof Aung Tin
Executive Director



Prof Wong Tien Yin
*Medical Director,
Singapore National Eye Centre*

*Chairman,
Singapore Eye Research Institute*



Assoc Prof Jodhbir Mehta
Deputy Executive Director



Sis Peck Chye Fong
Deputy Director, Research Clinic



Prof Roger Beuerman
Senior Scientific Advisor



Ms Charity Wai
*Chief Operating Officer,
SNEC*



Ms Sharmila Kannan
*Director, Administration,
Research Affairs & Support Services*



Assoc Prof Tina Wong
*Head, Ocular Therapeutics and
Drug Delivery Research Group*



Assoc Prof Eranga Vithana
*Director, Laboratory Translational
Research*



Assoc Prof Louis Tong
*Head, Ocular Surface Research
Group*



Prof Ecosse Lamoureux
Director, Population Health



Prof Saw Seang Mei
Head, Myopia Research Group

SERI's MANAGEMENT COMMITTEE *(continued)*



Dr Danny Belkin
*Director, Technology Development
& Commercialization*



Adj Assoc Prof Audrey Chia
Co-Head, Myopia Research Group



Assoc Prof Cheng Ching-Yu
*Head, Ocular Epidemiology Research
Group & Statistics Unit*



Dr Amutha Barathi
*Head, Translational Pre-Clinical
Model Platform*



Assoc Prof Gemmy Cheung
Head, Retina Research Group



Dr Zhou Lei
*Head, Proteomics Research
Platform*



Dr Michael Girard
*Co-Head, Bioengineering & Devices
Research Group*



Dr Seet Li Fong
*Assistant Director, Laboratory
Translational Research*



Prof Dan Milea
*Head, Visual Neuroscience Research
Group*



Dr Gary Yam
*Head, Experimental Microscopy
Platform*



Prof Chee Soon Phaik
Head, Cataract Research Group



Prof Leopold Schmetterer
Scientific Director

SNEC's RESEARCH COMMITTEE

Terms of reference:

- Plays a pivotal role in the review of research budgets, as well as the evaluation and endorsement of the appropriateness of research projects, including the scientific merit of such projects.
- Oversight over the review/ approval of the SNEC HREF grants for research projects.
- Provides directions for the development of SERI's translational and clinical research capabilities.



Prof Aung Tin
*Deputy Medical Director (Research), SNEC
Senior Consultant, Glaucoma Dept, SNEC*

Executive Director, SERI



Assoc Prof Tina Wong
*Head & Senior Consultant, Glaucoma Dept,
SNEC*

*Head, Ocular Therapeutics and Drug Delivery
Research Group, SERI*



Adj Assoc Prof Lee Shu Yen
*Deputy Head & Senior Consultant,
Surgical Retina Dept, SNEC*



Assoc Prof Jodhbir Mehta
*Head & Senior Consultant, Corneal &
External Eye Disease Dept, SNEC*

Deputy Executive Director, SERI



Adj Assoc Prof Sharon Tow
*Head and Senior Consultant,
Neuro-Ophthalmology Dept, SNEC*

Adjunct Senior Clinician Investigator, SERI



Assoc Prof Gemmy Cheung
*Deputy Head & Senior Consultant, Medical
Retina Dept, SNEC*

Head, Retina Research Group, SERI



Adj Assoc Prof Audrey Chia
*Head and Senior Consultant, Paediatric
Ophthalmology & Adult Strabismus Dept,
SNEC*

Co-Head, Myopia Research Group, SERI



Prof Dan Milea
*Senior Clinician, Neuro-Ophthalmology Dept,
SNEC*

*Head, Visual Neuroscience Research Group,
SERI*



Adj Assoc Prof Shamira Perera
Senior Consultant, Glaucoma Dept, SNEC

*Co-Head, Bioengineering & Devices Research
Group, SERI*



Dr Sunny Shen
*Head & Senior Consultant, Oculoplastic Dept,
SNEC*



Assoc Prof Louis Tong
*Senior Consultant, Corneal & External Eye
Disease Dept, SNEC*

Head, Ocular Surface Research Group, , SERI



Dr Desmond Quek
Consultant, Glaucoma Dept, SNEC

TEACHING & TRAINING

SERI has been actively hosting research seminars, courses and talks which serve as a platform for information transfer and idea sharing, as well as networking conduit between the internal and external research communities. Besides serving as a fertile platform for the incubation of research ideas and generation of collaborative initiatives between the SERI faculty and external academics/ researchers, these activities further promote research-related talent development within SERI that is high value-added and knowledge-based.

The talks presented via these channels at SERI offer discourse on scientific ideas and discoveries in ophthalmology and vision research, as well as in other biomedical disciplines, including bioengineering, genomics, tissue engineering, stem cell therapy and therapeutics, etc.; blending clinical, epidemiological, translational and basic approaches within specific disciplines. These seminars have certainly led to the launch of many new projects and successful collaborative partnership between SERI and local as well as international academic/ research entities.

This initiative serves as an ideal teaching platform for our junior faculty, paving the way for immense synergies as they work together to tackle emerging challenges in the field of ophthalmology.

DATE	TOPIC	SPEAKER
12 Oct 2017	Advances in High-Frequency Ultrasound Transducers and Imaging Approaches for Ophthalmic Imaging	Dr. Ketterling <i>Lizzi Center for Biomedical Engineering at Riverside Research</i>
24 Oct 2017	Molecules to medicine, translating medical research into commercial therapies	Prof Darren Kelly <i>OccuRx Pty. Ltd, University of Melbourne, Centre for Eye Research Australia and St Vincent's Hospital</i>
29 Nov 2017	Alice's Restaurant: A dinner with just dessert? Recent Post-Alice U.S. Federal Circuit Court Decisions Regarding Subject Matter Eligibility and Their Impact on Effective Claim Drafting	Dr Andrew Serafini <i>Kilpatrick Townsend & Stockton LLP</i>
12 Feb 2018	Lifestyle, Ageing and Neuro Recovery in Glaucoma	Prof Jonathan Crowston <i>University of Melbourne and Centre for Eye Research Australia</i>
12 Feb 2018	How about RGCs Under Pressure – Current Challenges in Glaucoma	Prof Jonathan Crowston <i>University of Melbourne and Centre for Eye Research Australia</i>
7 Mar 2018	Updates on AMD	Prof Alan C Bird <i>University College London Institute of Ophthalmology</i>
28 Mar 2018	The Role of Lens and Cataract Surgery in Glaucoma Treatment Algorithm	Dr Shan Lin <i>Glaucoma Research and Education Group (GREG) and the Glaucoma Center of San Francisco (GCSF)</i>

OUR COLLABORATIONS

Local Institution

- Alexandra Health Pte Ltd
- Biomedical Science Institute
- DSO National Laboratories
- Genome Institute of Singapore (GIS)
- Institute for Infocomm Research (I2R)
- Institute of High Performance Computing (IHPC)
- Institute of Materials Research and Engineering (IMRE)
- KK Women's And Children Hospital
- Nanyang Technological University (NTU)
- National Healthcare Group Polyclinics (NHGP)
- National Heart Centre Singapore (NHCS)
- National University Hospital (NUH)
- National University of Singapore (NUS)
- Singapore Chung Hwa Medical Institution
- Singapore General Hospital (SGH)
- Singapore Health Services Pte Ltd
- Singapore Public Sector Organisations
- SingHealth Polyclinics (SHP)
- Tan Tock Seng Hospital (TTSH)

Overseas Institution (Academic)

- Aier Eye Hospital Group Co. Ltd
- Centre for Eye Research Australia Ltd
- Centre for Eye Research Australia
- Chongqing Medical University
- Cixi Institute of Biomedical Engineering, Ningbo
Insitute of Materials Technology and
Engineering Chinese Academy of Sciences
- Duke University
- John Hopkins University Applied Physics
Laboratory
- King Khaled Eye Specialist Hospital (KKESH)
- Murdoch Children's Research Institute
- Ruprecht-karls-universitat Heaidelberg,
Medical
Faculty Mannheim
- Sinai Medical
- The University of Liverpool
- The University of Sydney
- University Institute of Pharmaceutical Sciences,
Panjab University
- Vietnam National Institute of Ophthalmology
(VINO)
- Wenzhou Medical University

Industry Collaborations

- A.Menarini Biomarkers Singapore Pte Ltd
- Abbott Medical Optics Inc
- Advanced Tear Diagnostics LLC
- Aerie Pharmaceuticals Inc
- Alchilife SRL; Alchimia SRL
- Alcon Research Ltd
- Allergan Singapore Pte Ltd
- Allgenesis Biotherapeutics Inc
- APIS Therapeutics LLC
- Asia Cornea Foundation (ACF)
- Astellas Pharma Inc
- Attonics Systems Pte Ltd
- Aurolab Trust
- AYOXXA Living Health Technologies Pte Ltd
- Bayer (South East Asia) Pte Ltd
- Bayer AG
- BetaSight
- Buildlabs
- Carl Zeiss Meditec Inc
- CellResearch Corporation Pte. Ltd
- Cicor Asia Pte Ltd
- Clinactis Pte Ltd
- Convance Inc
- Diamond Light Source Ltd
- DKSH Singapore Pte Ltd
- Ecsco Ventures Pte Ltd
- Einst Technology Pte Ltd
- Essilor International
- Etrog Engineering Ltd
- Exonate Limited
- EyeDiagnostics Scandinavia AB
- Eyenovia Inc
- F. Hoffmann-La Roche Ltd
- Gilead Sciences, INC
- Glaukos Corporation
- Histoindex Pte Ltd
- Hi-Tech Electronics Pte Ltd
- I3 Precision Pte Ltd
- IQVIA Inc.
- Kablooe Design
- Leben Care Technologies Pte Ltd
- L'occitane Singapore Pte Ltd
- NanoPass Technologies Ltd
- NGM Biopharmaceuticals, Inc
- NIDEK CO. LTD
- Nikon Corporation
- Novaliq GmbH
- Novartis (Singapore) Pte Ltd
- Novotech Clinical Research Pte Ltd
- Ocuflow, Inc
- Onemaker Group Pte Ltd
- Panasonic Industrial Devices Singapore
- PorMedTech Co Ltd
- Precise Bio Inc
- Quark Pharmaceuticals Inc.
- Rainmaker Labs Private Limited
- RetiMark Co. Ltd
- ReVision Optics
- Rimonci Capital
- Ring-Fence Pte Ltd
- Roche Singapore Pte Ltd
- Rooftop Ventures Pte Ltd
- Santen Incorporated
- Santen Pharmaceutical Co. Ltd
- SCG Chemicals Co. Ltd
- Seoul Semiconductor
- Singapore Innovate Pte Ltd
- Soft Cell Biological Research LLC
- Square Fresco Solutions Pte Ltd
- Stellenbosch Nanofiber Company
- Sun Pharma Advanced Research Company Ltd
- The Electrospinning Company Ltd
- TNR Diagnostics Pte Ltd
- Toor Inc
- Trendlines Medical Singapore Pte Ltd
- Venturecraft Two Pte Ltd
- Vivo Diagnostics Pte Ltd
- XentiQ Pte Ltd
- Ximedica LLC

EVENTS

INTERNATIONAL & LOCAL ACTIVITIES

SERI staff and associates participated actively in both overseas and local conferences during the year to establish links with overseas institutes, meet up with overseas collaborators and to promote and enhance SERI's presence in the international scene. Conferences / meetings participated includes:

INTERNATIONAL ACTIVITIES		
TOPIC	DATE	VENUE
International Ocular Surface Society	6 May 2017	Baltimore, USA
American Society of Cataract and Refractive Surgery (ASCRS)-ASOA Congress	5-9 May 2017	Los Angeles, USA
Association for Research in Vision and Ophthalmology (ARVO) 2017	7-11 May 2017	Baltimore, USA
6th International Congress of Biomedical Technology	11-13 May 2017	Prague, Czech Republic
The Royal College of Ophthalmologists Annual Congress 2017	22-25 May 2017	Liverpool, England
European Society of Human Genetics (ESHG) Conference	27-30 May 2017	Copenhagen, Denmark
30th Asia-Pacific Association of Cataract & Refractive Surgeons (APCRS) Annual Meeting	1-3 June 2017	Hangzhou, China
40th Annual Macula Society Meeting	7-10 June 2017	Singapore, Singapore
VIII International Conference on Ophthalmology	8-9 June 2017	Ufa, Russia
SOE 2017 European Society of Ophthalmology	10-13 June 2017	Barcelona, Spain
25 Years Anniversary of Cornea Transplantation in Vilnius	21-23 June 2017	Santaros, Lithuania
Vision 2017 Congress for Visual Rehabilitation	27 June 2017	Hague, Netherlands
World Glaucoma Congress 2017	28 June-1 July 2017	Helsinki, Finland
Asia Pacific Tele-Ophthalmology Society Meeting 2017	15-16 July 2017	Hong Kong
19th IUPAB and 11 EBSA Congress	16-20 July 2017	Edinburgh, United Kingdom
3rd ASEAN Ophthalmology Society Congress	19-21 July 2017	Jakarta, Indonesia
Gordon Research Conference - Microbial Adhesion and Signal Transduction	23-28 July 2017	Newport, Rhode Island, USA
XV European Biological Rhythms Society (EBRS)	30 July - 3 August 2017	Amsterdam, Netherlands
33rd Pan American Congress of Ophthalmology	9-12 August 2017	Lima, Peru
15th International Congress on Vision Science and Eye	10-11 August 2017	United Kingdom, London
2017 International Congress on Obesity and Metabolic Syndrome (ICOMES)	31 August - 3 September 2017	Seoul, South Korea
ASM/ESCMID Conference on Drug Development to Meet the Challenge of Antimicrobial Resistance	6-8 September 2017	Boston, USA
European Society of Retina Specialists Congress (EURETINA) 2017	7-10 September 2017	Barcelona, Spain
Glaucoma Society of India	15-17 September 2017	Jaipur, India
16th Human Proteome Organisation World Congress (HUPO)	17-21 September 2017	Dublin, Ireland

2017 UIC Cornea Symposium	22 September 2017	Chicago, Illinois, USA
European Association for Vision and Eye Research (EVER) 2017	27-30 September 2017	Nice, France
ISER/BrightFocus 2017 Glaucoma Symposium	5-8 October 2017	Atlanta, Georgia, USA
XXXV Congress of the European Society of Cataract & Refractive Surgeons (ESCRS)	7-11 October 2017	Lisboa, Portugal
Taiwan Macula Society Fall Meeting	8 October 2017	Taipei, Taiwan
Asia-Pacific Strabismus and Paediatric Ophthalmology Society (APSPPOS) in conjunction with Hong Kong Paediatric Ophthalmology Congress (HKPOC) 2017	11-12 October 2017	Hong Kong
6th Modern Solid Phase Peptide Synthesis	12-14 October 2017	Queensland, Australia
10th World Congress on Development Origins of Health and Disease (DOHaD)	15-18 October 2017	Rotterdam, Netherlands
12th Australian Peptide Conference	15-20 October 2017	Queensland, Australia
Asia Dry Eye Summit 2017	20 October 2017	Osaka, Japan
Novartis Ophthalmology Congress	28 October 2017	Penang, Malaysia
RANZCO Congress 2017	28 October-1 November 2017	Perth, Australia
American Academy of Ophthalmology (AAO) 2017	11-14 November 2017	New Orleans, USA
Shanghai Ophthalmology Gong Ji Forum 2017	17-19 November 2017	Shanghai, China
ESASO Asia 14th Module: Medical & Surgical Retina	25-29 November 2017	Beijing, China
4th Indonesian Society of Cataract and Refractive Surgery (INASCERS) Biennial Meeting	2-3 December 2017	Jakarta, Indonesia
11th Asia-Pacific Vitreo-retina Society (APVRS) Congress	8-10 December 2017	Kuala Lumpur, Malaysia
33rd Asia-Pacific Academy of Ophthalmology Congress (APAO 2018)	8-11 February 2018	Hong Kong
Zermatt Glaucoma Winter Meeting	25-28 January 2018	Zurich, Switzerland
LOCAL ACTIVITIES		
Inaugural Singhealth-Duke Blood Cancer Symposium (SDBCC)	22 April 2017	Singapore
Macula Symposium Singapore	10-11 June 2017	Singapore
International Union of Microbiological Societies	17-21 July 2017	Singapore
9th Annual Symposium on Models of Physiology and Disease	19-20 September 2017	Singapore
13th Asian-Pacific Congress of Hypertension	6-8 October 2017	Singapore
CARE's 2017 Population Ageing Conference: Ageing and Resilience in the 21st Century	11-13 October 2017	Singapore
3rd Annual Peptide and Protein society of Singapore Symposium	4-5 December 2017	Singapore
Glaucoma Research Joint Retreat	1 February 2018	Singapore

GALA FUND RAISING DINNER, THE EYE BALL 2017 – What A Night!

The EYE Ball 2017 was a spectacular affair this year, graced by more than 370 friends, donors and supporters of the Singapore National Eye Centre (SNEC) and the Singapore Eye Research Institute (SERI). The rousing support from all present, resulted in donations contributing cumulatively to a quantum of approximately \$1.5 million for the VisionSave campaign this year.

The VisionSave campaign was launched in July last year, and serves as a novel initiative to leverage on philanthropic investment to innovate eye care delivery medicine in the most impactful manner, so as to ensure the best and optimal outcome for every patient.

The EYE Ball is a signature fundraising event organized by SNEC/ SERI, in conjunction with the VisionSave campaign. It serves as an integral bastion in SNEC/SERI's efforts to save sight and improve the lives of our patients. The Eye Ball this year featured a series of short videos that demonstrated how past donations had translated to actual patient impact.

Its organizing committee, chaired by Adjunct Associate Professor Ho Ching Lin, was truly humbled by the overwhelming response to the EYE Ball this year, with all tables sold almost 1.5 months prior to the event. The Windsor Ballroom at the Goodwood Hotel was filled to its maximum capacity on the day of the event, with some of SNEC/ SERI's strongest supporters and advocates who truly appreciated the splendor **yet** fragility of Vision and Sight.

"The estimated prevalence of avoidable vision loss has increased due to population growth and ageing. There is still a large gap between target in our fight against blindness and what has been achieved. A lot more needs to be done and with VisionSave, this gap can be minimized", said Adjunct Associate Professor Ho.

A landmark moment for The EYE Ball 2017, was the inauguration of the VisionSave Inspirational Patient Award, which recognizes the resilience, extraordinary courage and strength of character demonstrated by a patient in the face of adversity and healthcare challenges.

This award was conferred to national para-athlete, Mr. Jason Chee, who truly embodies the qualities of strength, courage and great tenacity as inscribed by this award.

Another signature moment was the conferment of The Visionary Award, which lauds the resolute commitment by an individual towards a vision that has led to societal benefit in Singapore and beyond. This year's award was conferred to Dr Lee Seng Tee, for his commendable far-sightedness and stellar contributions in promoting the power of Education towards the advancement and betterment of society; his commitment towards promoting the Asian culture, and practices, as well as his passion in promoting the Arts.

The Eye Ball 2017 was truly a night to remember, and this was attributable to many parties. Firstly, celebrity extraordinaire Dick Lee, who was true force behind the evening's program, from conceptualization to the actual fronting of this important event. It was especially poignant as this was to be Dick's last year as the VisionSave ambassador.

Heartfelt appreciation was further rendered to Mr. Eric Khoo, who was instrumental in SNEC/ SERI securing a full sponsorship from the Goodwood Park to host the Eye Ball 2017. Kudos indeed to the generosity of Mr. Khoo, and the staff and management of the Goodwood Park Hotel.

The overwhelming success of the event was made possible by the sustained faith, support and guidance of SNEC/ SERI's partner for the EYE Ball, Ms. Corinne Ng and the SG Tatler team, as well as the inspiring and gracious patronage of so many outstanding individuals who directly contributed to the success of the evening's programme. They included the beautiful and multi-talented, Tay Kewei and Mandy Kee, soulful and evergreen artistes, Mr. Vernon Cornelius and Ms. Rahimah Rahim Fernandez, and the gracious and charming, Nikki Muller, who was the emcee for the evening.

Indeed, the Eye Ball 2017 proved to be a stellar affair, with rousing support, generosity and good will from all present.



ACHIEVEMENTS

OUR AWARDS

Local Awards

- **SGH 22nd Annual Scientific Congress Meeting 2017: Outstanding Research Award (Clinical Research)** [Apr 2017]
Dr Danny Cheung Ning
- **SGH 22nd Annual Scientific Congress Meeting 2017: Young Investigator Award (Clinical Research)** [Apr 2017]
Dr Daniel Ting
- **National Medical Research Council: Clinician Scientist Award (Senior Category)** [May 2017]
“Deep Phenotyping and Genetic Landscaping of Primary Angle Glaucoma”
A/Prof Cheng Ching-Yu
- **SingHealth GCEO Excellence Awards: Outstanding Clinician Researcher Award** [May 2017]
Dr Gavin Tan
- **SingHealth GCEO Excellence Awards: Distinguished Champion of Change Leader Award** [May 2017]
A/Prof Edmund Wong
- **SingHealth Healthcare Management Congress: Poster Presentation Award** [Aug 2017]
“Improving Discharge Rate in Subsidised General Eye Clinic (Clinic 1)”
Dr Audrey Looi and ECS team
- **Nanyang Technological University National Level 3 Minute Thesis 2017: Runner Up** [Aug 2017]
Vidhya Venkatraman
- **AM-ETHOS Academic Administrator Fellowship FY2017/18** [Aug 2017]
Ms Sharmila Kannan
- **3rd SingHealth Duke-NUS Education Conference: Merit Poster Award** [Sep 2017]
Ms Karen Zhang
- **3rd Singhealth Duke-NUS Education Conference: 2nd Runner Up – Best Oral Presentation Award**
“Beware of Sharps in Residents Training Programme” [Sep 2017]
Ms Aw Ai Tee
- **National Medical Research Council: Clinician Scientist Award** [Oct 2017]
“Role of polarized macrophages and long noncoding RNAs in the pathogenesis of polypoidal choroidal vasculopathy”
A/Prof Yasuo Yanagi
- **AMC Research Forum: SingHealth Publish! Award** [Oct 2017]
“Meta-analysis of gene-environment-wide association scans accounting for education level identifies additional loci for refractive error”
Dr Amutha Barathi
- **AMC Research Forum: SingHealth Publish! Award** [Oct 2017]
“Bio-inspired in situ crosslinking and mineralization of electrospun collagen scaffolds for bone tissue engineering”
Dr Chetna Dhand
- **Wong Hock Boon Society Symposium (WHBSS): Oral Presentation – 1st Prize** [Nov 2017]
“Antimicrobial Contact Lenses”
Mr Edward Lim
- **Wong Hock Boon Society Symposium (WHBSS): Oral Presentation - People's Choice Award** [Nov 2017]
“Antimicrobial Contact Lenses”
Mr Edward Lim

- **National Medical Research Council: Transition Award** [Sep 2017]
“The applications of Terahertz scanning system on corneas”
Dr Liu Yu-Chi
- **National Volunteer & Philanthropy Centre: President's Volunteerism & Philanthropy Award** [Nov 2017]
Dr Marcus Ang
- **3rd SingHealth Duke-NUS Education Conference: First in Oral Presentation** [Sep 2017]
Dr Kiew Sieh Yien
- **National Medical Research Council: Clinician Scientist Award (Senior Category)** [Dec 2017]
“Translational program in ocular surface and dry eye”
A/Prof Louis Tong

International Awards

- **The Ophthalmologist: Top 50 “Rising Stars” of 2017** [Apr 2017]
Dr Marcus Ang
- **The Ophthalmologist: Top 50 “Rising Stars” of 2017** [Apr 2017]
Dr Chelvin Sng
- **ARVO 2017: Travel Grant** [May 2017]
Dr Tham Yih Chung
- **ARVO 2017: Travel Grant** [May 2017]
Dr Ong Hon Shing
- **Macula Society: Young Investigator Award** [Jun 2017]
A/Prof Gemmy Cheung
- **The Glaucoma Foundation: The Dr Robert Ritch Award for Excellence and Innovation in Glaucoma** [Jun 2017]
Prof Aung Tin
- **2nd Asia Pacific Tele-Ophthalmology Society (APTOS) Symposium: APTOS Young Innovator Travel Grant** [Jul 2017]
Dr Daniel Ting
- **2017 International Congress on Obesity and Metabolic Syndrome (ICOMES): Travel Grant** [Aug 2017]
A/Prof Charumathi Sabanayagam
- **American Academy of Ophthalmology 2017: Achievement Award** [Nov 2017]
A/Prof Cheng Ching-Yu
- **American Academy of Ophthalmology 2017: Achievement Award** [Nov 2017]
Dr Choo Chai Teck
- **11th Asia-Pacific Vitreo-retina Society (APVRS) Congress: 2nd Prize of e-poster** [Dec 2017]
“Comparison of OCT Angiographic Changes After Anti-VEGF Monotherapy Alone or in Combination With Photodynamic Therapy in Polypoidal Choroidal Vasculopathy”
Dr Kelvin Teo
- **Asia-Pacific Academy of Ophthalmology 2018: APAO Achievement Award 2018** [Feb 2018]
Dr Marcus Ang
- **Asia-Pacific Academy of Ophthalmology 2018: APAO Achievement Award 2018** [Feb 2018]
Dr Choo Chai Teck
- **Asia-Pacific Academy of Ophthalmology 2018: APAO Achievement Award 2018** [Feb 2018]
Dr Ti Seng Ei
- **Australia and New Zealand Corneal Society 2018: Douglas Coster Medal Lecture** [Feb 2018]
A/Prof Jodhbir Mehta

- **Education Academy of Computational Life Sciences International Summer School 2017: 2nd Place Best Poster Award** [Sep 2017]
“TGIFp-associated corneal dystrophy: exploring structure-based drug development strategies for disease prevention and treatment”
Vidhya Venkatraman
- **EVER-Acta Lecture: Acta Ophthalmologica Gold Medal** [Sep 2017]
Prof Leopold Schmetterer
- **18th Australasian Research Management Society Conference (ARMS) 2017: Travel Award** [Sep 2017]
Ms Sharmila Kannan
- **The 22nd Congress of Chinese Ophthalmological Society: 2017 International Gold Award of Chinese Ophthalmological Society** [Sep 2017]
Prof Wong Tien Yin
- **American Academy of Ophthalmology 2017: Senior Achievement Award** [Nov 2017]
A/Prof Jodhbir Mehta
- **American Academy of Ophthalmology 2017: Achievement Award** [Nov 2017]
A/Prof Gemmy Cheung
- **Asia-Pacific Academy of Ophthalmology 2018: APAO Senior Achievement Award 2018** [Feb 2018]
Prof Aung Tin
- **Asia-Pacific Academy of Ophthalmology 2018: APAO Achievement Award 2018** [Feb 2018]
Dr Gary Yam
- **Asia-Pacific Academy of Ophthalmology 2018: Distinguished Service Award** [Feb 2018]
Dr Mohamad Rosman
- **Asia-Pacific Academy of Ophthalmology 2018: Fellow of AAPPO (Academy of Asia-Pacific Professors of Ophthalmology)** [Feb 2018]
Prof Chee Soon Phaik
- **19th Global Ophthalmology Summit: Conference Series – Best Young Researcher Award 2018** [Feb 2018]
“Oral presentation on “Antimicrobial coated lenses: Crosslinked organosilane and gelatin films”
Mr Edward Lim
- **The 6th Fuchs Symposium: 2018 Charles Tillet Lecturer** [Mar 2018]
Prof Donald Tan

OUR GRANTS

NMRC

- **“Deep Phenotyping and Genetic Landscaping of Primary Open Angle Glaucoma”.**
A/Prof Cheng Ching Yu; S\$1,750,000.00
- **“The applications of Terahertz scanning system on corneas”.**
Dr Liu Yu Chi; S\$378,000.00
- **“Novel Multimodal Imaging in Moderate Diabetic Retinopathy to Predict Vision-Threatening Stages of Retinopathy”.**
Dr Gavin Tan; S\$375,000.00
- **“Quantification of blood flow based on OCT-angiography”.**
Prof Leopold Schmetterer; S\$850,000.00
- **“Optimization of Core Platform Technologies for Ocular Research (INCEPTOR)”.**
Prof Aung Tin; S\$16,000,000.00
- **“Role of polarized macrophages and long noncoding RNAs in the pathogenesis of polypoidal choroidal vasculopathy”.**
A/Prof Yasuo Yanagi; S\$674,966.00

- **“Singapore Imaging Eye Network SIENA”.**
Prof Leopold Schmetterer; S\$3,823,708.00
- **“Liposomes as a Drug Delivery Mechanism for the Treatment of Proliferative Vitreoretinopathy”.**
Dr Wong Chee Wai; S\$209,850.00
- **“Visually-disabling pathologic myopia in the SEED and SCORM high myopia cohorts: Longitudinal changes, novel biomarkers and impact on health-related quality of life”.**
Prof Saw Seang Mei; S\$1,190,025.78
- **“DYNAMO: Diabetes Study on Nephropathy and other microvascular complications. Theme 3: Retinal microvasculature as a “window” to study mechanisms and pathways in DN”.**
Prof Wong Tien Yin; S\$4,999,850.00
- **“Translational Program in Ocular Surface and Dry Eye”.**
A/Prof Louis Tong; S\$1,749,909.00
- **“Harnessing LOXL1 as a therapeutic candidate for exfoliation syndrome and exfoliation glaucoma”**
Prof Aung Tin; S\$1,445,238.15
- **“Safety and Efficacy of Tissue Engineered Endothelial Keratoplasty (TE-EK)”**
A/Prof Jodhbir Mehta; S\$1,249,975.00

A*Star/ Duke-NUS/ MOH/ Others

- **“Effect of aging of the innate immune system on intracellular system network”.**
A/Prof Yasuo Yanagi; S\$250,000.00
- **“SERI Santen Strategic Collaboration and Joint Ophthalmic Research Laboratory”.**
Prof Aung Tin; S\$13,650,000.00
- **“The Molecular Therapeutics Programme”.**
A/Prof Jodhbir Mehta; S\$3,448,229.00
- **“Investigating the effect of blood pressure and intraocular pressure modulation on the neurovascular unit of the eye”.**
Dr Rachel Chong; S\$171,307.00
- **“Innovations in High Resolution Corneal Imaging for the Clinic”.**
Prof Leopold Schmetterer; S\$100,000.00
- **“Developing a Novel Retinopexy Device to Improve Visual Outcome of Retinal Detachment Surgery”.**
Dr Cheung Ning; S\$50,000.00
- **“A simultaneous extractor-injector device”.**
Dr Marcus Ang; S\$30,000.00
- **“A Handheld Pupillometer for a Fast and Cost-effective Ocular Disease Screening”.**
Prof Dan Milea; S\$208,290.00
- **“A Longitudinal Study on the Structural-functional Correlations of Perifoveal Capillary Network Integrity in Diabetes Using Optical Coherence Tomography Angiography”.**
Dr Andrew Tsai; S\$25,000.00
- **“A polymer product and preparation thereof”.**
A/Prof Lakshminarayanan Rajamani; S\$40,000.00
- **“Identification of a dental pulp stem cell (DPSC) sub population as a novel source for retinal stem cell transplantation”.**
Dr Shweta Singhal; S\$20,000.00

SingHealth

- **“Replacement of OAHFA in human tear using an over-the-counter eyedrop medical device to prevent dry eye”.**
Dr Hou Aihua; S\$100,000.00
- **“Storage and transport of constructs for corneal endothelial transplantation”.**
Dr Matthew Lovatt; S\$149,892.00
- **“Developing a Predictive Model for Non-Adherence to Recommended Ophthalmic Referrals in Persons with Diabetes (PM-OR)”.**
Dr Ryan Man; S\$149,829.00
- **“Targeting Lipid A for Antibiotic Synergy”.**
Dr Koh Jun Jie; S\$50,000.00

Commercial

- **“A Comparison of Bimatoprost SR to Selective Laser Trabeculoplasty in Patients with Open-Angle Glaucoma or Ocular Hypertension”.**
A/Prof Shamira Perera; S\$139,066.33
- **“Efficacy study of CMP molecules in rat model”.**
Dr Amutha Barathi Veluchamy; S\$58,807.31
- **“A Phase 2/3, Randomized, Double-Masked, Sham-Controlled Trial of QPI-1007 Delivered By Single or Multi-Dose Intravitreal Injection(s) to Subjects With Acute Nonarteritic Anterior Ischemic Optic Neuropathy (NAION)”**
A/Prof Sharon Tow; S\$113,473.39
- **“Drug safety evaluation of IBI302 and IBI304 from Biologics, through intra-vitreous injection, in NZW rabbit eyes (12 New Zealand White)”.**
Dr Yong Li; S\$31,909.54
- **“A Phase II, Randomized, Double-Masked, Placebo-Controlled, Parallel-Group Study Assessing the Efficacy and Safety of DE-127 Ophthalmic Solution 0.0025%, 0.005% and 0.01% Compared with Placebo in Subjects with mild or moderate Myopia”.**
A/Prof Audrey Chia; S\$700,566.29
- **“Drug efficacy evaluation of IBI302 and IBI304 from Biologics, through intra-vitreous injection, in 12 PRNV rabbits”.**
Dr Yong Li; S\$70,189.86
- **“SERI Santen Strategic Collaboration and Joint Ophthalmic Research Laboratory (I1601E0008)”**
Prof Aung Tin; S\$6,842,800.00
- **“Investigating the Role of the Iris in pSeudoexfoliation syndrome (IRIS) study”**
Dr Anita Chan; S\$145,837.04

OUR PUBLICATIONS

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- Fan X, Jiang S, Li Z, Loh XJ. **Conjugation of poly(ethylene glycol) to poly(lactide)-based polyelectrolytes: An effective method to modulate cytotoxicity in gene delivery.** *Mater Sci Eng C Mater Biol Appl.* 2017 Apr 1;73:275-284.
- Tan TE, Liu YC, Jayasinghe LS, Mehta JS. **Intraoperative Optical Coherence Tomography Vault Measurement in Posterior Chamber Phakic Intraocular Lens Implantation.** *J Refract Surg.* 2017 Apr 1;33(4):274-277.
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FINANCIAL REPORT

DIRECTORS' REPORT

We are pleased to submit this annual report to the member of the Company together with the audited financial statements for the financial year ended 31 March 2018.

Directors

The directors (who are also the charity trustees) in office at the date of this report are as follows:

Associate Professor Yeoh Khay Guan

Doctor Geh Min

Professor Ang Chong Lye

Professor Wang Linfa

Doctor Lim Eng Kok

Professor Soo Kee Chee

Ms Ooi Chee Kar

Professor Wong Tien Yin

Associate Professor Lim Tock Han

Professor James D Best

Professor Thomas M Coffman

Directors' Interests

The Company has no share capital and its members' liability is limited by guarantee.

Neither at the end of, nor at any time during the financial year, was the Company a party to any arrangement whose objects are, or one of whose objects is, to enable the directors of the Company to acquire benefits by means of the acquisition of shares in or debentures of the Company or any other body corporate.

Share options

The Company does not have any share capital and accordingly has not issued any share options.

Auditors

The auditors, KPMG LLP, have indicated their willingness to accept re-appointment.

On behalf of the Board of Directors



Professor Wong Tien Yin

Director



Ms Ooi Chee Kar

Director

STATEMENT BY DIRECTORS

In our opinion:

- (a) the financial statements set out on pages FS1 to FS24 are drawn up so as to give a true and fair view of the financial position of the Company as at 31 March 2018 and the financial performance and cash flows of the Company for the year ended on that date in accordance with the provisions of the Singapore Companies Act, Chapter 50, the Singapore Charities Act, Chapter 37 and Singapore Financial Reporting Standards; and
- (b) at the date of this statement, there are reasonable grounds to believe that the Company will be able to pay its debts as and when they fall due.

The Board of Directors has, on the date of this statement, authorised these financial statements for issue.

On behalf of the Board of Directors



Professor Wong Tien Yin
Director



Ms Ooi Chee Kar
Director

INDEPENDENT AUDITORS' REPORT

Member of the Company
Singapore Eye Research Institute

Report on the audit of the financial statements

Opinion

We have audited the financial statements of Singapore Eye Research Institute ('the Company'), which comprise the balance sheet as at 31 March 2018, the statement of comprehensive income and statement of cash flows for the year then ended, and notes to the financial statements, including a summary of significant accounting policies, as set out on pages FS1 to FS24.

In our opinion, the accompanying financial statements are properly drawn up in accordance with the provisions of the Companies Act, Chapter 50 ('the Companies Act'), the Charities Act, Chapter 37 and other relevant regulations ('the Charities Act and Regulations'), and Financial Reporting Standards in Singapore ('FRSs') so as to give a true and fair view of the financial position of the Company as at 31 March 2018 and of the financial performance, and cash flows of the Company for the year ended on that date.

Basis for opinion

We conducted our audit in accordance with Singapore Standards on Auditing ('SSAs'). Our responsibilities under those standards are further described in the '*Auditors' responsibilities for the audit of the financial statements*' section of our report. We are independent of the Company in accordance with the Accounting and Corporate Regulatory Authority *Code of Professional Conduct and Ethics for Public Accountants and Accounting Entities* ('ACRA Code') together with the ethical requirements that are relevant to our audit of the financial statements in Singapore, and we have fulfilled our other ethical responsibilities in accordance with these requirements and the ACRA Code. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Other information

Management is responsible for the other information contained in the annual report. Other information is defined as all information in the annual report other than the financial statements and our auditors' report thereon.

We have obtained the Directors' statement prior to the date of this auditors' report.

Our opinion on the financial statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Responsibilities of management and those charged with governance for the financial statements

Management is responsible for the preparation of financial statements that give a true and fair view in accordance with the provisions of the Companies Act, the Charities Act and Regulations and FRSs and for devising and maintaining a system of internal accounting controls sufficient to provide a reasonable assurance that assets are safeguarded against loss from unauthorised use or disposition; and transactions are properly authorised and that they are recorded as necessary to permit the preparation of true and fair financial statements and to maintain accountability of assets.

In preparing the financial statements, management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so.

Those charged with governance comprises the directors. Their responsibilities include overseeing the Company's financial reporting process.

Auditors' responsibilities for the audit of the financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with SSAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with SSAs, we exercise professional judgement and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal controls.
- Obtain an understanding of internal controls relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Charity's internal controls.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditors' report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditors' report. However, future events or conditions may cause the Company to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

We communicate with the directors regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal controls that we identify during our audit.

Report on other legal and regulatory requirements

In our opinion, the accounting and other records required to be kept by the Company have been properly kept in accordance with the provisions of the Companies Act, and the Charities Act and Regulations.

During the course of our audit, nothing has come to our attention that causes us to believe that during the year:

- (a) the Company has not used the donation moneys in accordance with its objectives as required under Regulation 11 of the Charities (Institutions of a Public Character) Regulations; and
- (b) the Company has not complied with the requirements of Regulation 15 of the Charities (Institutions of a Public Character) Regulations.

KPMG LLP
*Public Accountants and
Chartered Accountants*

Singapore

FINANCIAL STATEMENTS

Balance sheet

As at 31 March 2018

	Note	2018 \$	2017 \$
Assets			
Property, plant and equipment	4	6,378,299	5,962,464
Intangible assets	5	162,418	392,914
		<u>6,540,717</u>	<u>6,355,378</u>
Non-current assets			
Trade and other receivables	6	15,977,543	15,336,242
Prepayments		56,375	51,856
Cash and cash equivalents	8	10,117,110	6,908,578
Current assets		<u>26,151,028</u>	<u>22,296,676</u>
Total assets		<u>32,691,745</u>	<u>28,652,054</u>
Accumulated fund			
	9	<u>(546,878)</u>	<u>1,184,500</u>
Non-current liability			
Deferred income	10	4,451,576	4,055,622
		<u>4,451,576</u>	<u>4,055,622</u>
Current liabilities			
Trade payables	11	6,218,883	4,410,017
Other payables	12	19,879,954	16,221,093
Deferred income	10	1,952,790	2,044,822
Employee benefits	13	735,420	736,000
		<u>28,787,047</u>	<u>23,411,932</u>
Total liabilities		<u>33,238,623</u>	<u>27,467,554</u>
Total accumulated fund and liabilities		<u>32,691,745</u>	<u>28,652,054</u>

Statement of comprehensive income

Year ended 31 March 2018

	Note	2018 \$	2017 \$
Operating expenditure grants	14	25,276,731	25,274,424
Amortisation of capital grants	10	1,708,451	1,799,684
Government subvention	17	1,747,274	–
Other income	15	4,300,996	3,343,081
		<u>33,033,452</u>	<u>30,417,189</u>
Staff costs		(17,437,165)	(17,176,591)
Supplies and consumables		(4,085,463)	(4,203,556)
Depreciation of property, plant and equipment	4	(1,599,016)	(1,750,146)
Amortisation of intangible assets	5	(248,623)	(305,200)
Rental and utilities		(2,696,268)	(1,476,951)
Purchased and contracted services		(5,683,486)	(5,489,394)
Repairs and maintenance		(1,170,695)	(526,980)
Other operating expenses		(1,841,508)	(1,376,521)
Results from operating activities		<u>(1,728,772)</u>	<u>(1,888,150)</u>
Finance costs	16	(2,606)	(2,494)
Deficit before tax		<u>(1,731,378)</u>	<u>(1,890,644)</u>
Tax expense	18	–	–
Deficit for the year	19	<u>(1,731,378)</u>	<u>(1,890,644)</u>
Other comprehensive income for the year, net of tax		–	–
Total comprehensive income for the year		<u>(1,731,378)</u>	<u>(1,890,644)</u>
Accumulated fund brought forward		1,184,500	3,075,144
Accumulated fund carried forward		<u>(546,878)</u>	<u>1,184,500</u>

The Company had no other changes in accumulated fund except for deficit for the year of \$1,731,378 for the financial year ended 31 March 2018 (2017: \$1,890,644).

Statement of Cash Flows

Year ended 31 March 2018

	Note	2018 \$	2017 \$
Cash flows from operating activities			
Deficit for the year		(1,731,378)	(1,890,644)
Adjustments for:			
Depreciation of property, plant and equipment	4	1,599,016	1,750,146
Loss on disposal of property, plant and equipment	19	16,938	29,364
Amortisation of intangible assets	5	248,623	305,200
Amortisation of deferred income	10	(1,708,451)	(1,799,684)
		<u>(1,575,252)</u>	<u>(1,605,618)</u>
Changes in working capital:			
Trade and other receivables		(641,301)	4,872,732
Prepayments		(4,519)	(9,530)
Trade and other payables		5,467,727	(4,541,895)
Employee benefits		(580)	56,000
		<u>3,246,075</u>	<u>(1,228,311)</u>
Net cash (used in)/from operating activities			
Cash flows from investing activities			
Purchase of property, plant and equipment		(2,053,189)	(1,408,586)
Purchase of intangible assets		(18,127)	(200,729)
Proceeds from disposal of property, plant and equipment		21,400	1
Grants for capital expenditure		2,012,373	1,580,932
		<u>(37,543)</u>	<u>(28,382)</u>
Net cash used in investing activities			
Net decrease in cash and cash equivalents			
Cash and cash equivalents at beginning of the year		6,908,578	8,165,271
Cash and cash equivalents at end of the year	8	<u>10,117,110</u>	<u>6,908,578</u>

During the year, the Company acquired property, plant and equipment and intangible assets with an aggregate cost of \$2,071,316 (2017: \$1,609,315), of which \$2,012,373 (2017: \$1,580,932) was acquired using grants received.

NOTES TO THE FINANCIAL STATEMENTS

These notes form an integral part of the financial statements.

The financial statements were authorised for issue by the Board of Directors on

1. Domicile and activities

Singapore Eye Research Institute (the Company) is incorporated in the Republic of Singapore. The address of the Company's registered office is 31 Third Hospital Avenue, #03-03 Bowyer Block, Singapore 168753.

The principal activities of the Company are to carry out eye-related medical research projects.

The immediate, intermediate holding companies and ultimate holding party during the financial year are Singapore National Eye Centre Pte Ltd, Singapore Health Services Pte Ltd and MOH Holdings Pte Ltd, and Minister for Finance respectively. These companies were incorporated in the Republic of Singapore.

The Company, limited by guarantee, has been registered as a Charity, under the Charities Act, Cap. 37 with effect from 27 November 2002.

2. Basis of preparation

2.1 Statement of compliance

The financial statements have been prepared in accordance with Singapore Financial Reporting Standards (FRS).

2.2 Basis of measurement

The financial statements have been prepared on the historical cost basis except for certain financial assets and financial liabilities which are measured at fair values.

2.3 Functional and presentation currency

The financial statements are presented in Singapore dollars, which is the Company's functional currency.

2.4 Use of estimates and judgements

The preparation of financial statements in conformity with FRSs requires management to make judgements, estimates and assumptions that affect the application of accounting policies and the reported amounts of assets, liabilities, income and expenses. Actual results may differ from these estimates.

Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised in the period in which the estimates are revised and in any future periods affected.

There are no critical judgements in applying accounting policies that have significant effect on the amount recognised in the financial statements and no assumptions and estimation uncertainties that have a significant risk of resulting in a material adjustment within the next financial year.

Measurement of fair values

A few of the Company's accounting policies and disclosures require the measurement of fair values, for both financial and non-financial assets and liabilities.

When measuring the fair value of an asset or a liability, the Company uses market observable data as far as possible. Fair values are categorised into different levels in a fair value hierarchy based on the inputs used in the valuation techniques as follows:

- Level 1: quoted prices (unadjusted) in active markets for identical assets or liabilities.
- Level 2: inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly (i.e., as prices) or indirectly (i.e., derived from prices).
- Level 3: inputs for the asset or liability that are not based on observable market data (unobservable inputs).

If the inputs used to measure the fair value of an asset or a liability might be categorised in different levels of the fair value hierarchy, then the fair value measurement is categorised in its entirety in the same level of the fair value hierarchy as the lowest level input that is significant to the entire measurement (with Level 3 being the lowest).

The Company recognises transfers between levels of the fair value hierarchy as of the end of the reporting period during which the change has occurred.

Further information about the assumptions made in measuring fair values is included in note 19.

3. Significant accounting policies

The accounting policies set out below have been applied consistently to all periods presented in these financial statements, and have been applied consistently by the Company.

3.1 Foreign currency

Foreign currency transactions

Transactions in foreign currencies are translated to the functional currency of the Company at exchange rates at the dates of the transactions. Monetary assets and liabilities denominated in foreign currencies at the reporting date are retranslated to the functional currency at the exchange rate at that date. The foreign currency gain or loss on monetary items is the difference between amortised cost in the functional currency at the beginning of the year, adjusted for effective interest and payments during the year, and the amortised cost in foreign currency translated at the exchange rate at the end of the year.

Non-monetary assets and liabilities denominated in foreign currencies that are measured at fair value are retranslated to the functional currency at the exchange rate at the date that the fair value was determined. Non-monetary items in a foreign currency that are measured in terms of historical cost are translated using the exchange rate at the date of the transaction. Foreign currency differences arising on retranslation are recognised in surplus or deficit.

3.2 Financial instruments

Non-derivative financial assets

The Company initially recognises loans and receivables on the date that they are originated. All other financial assets (including assets designated at fair value through profit or loss) are recognised initially on the trade date, which is the date that the Company becomes a party to the contractual provisions of the instrument.

The Company derecognises a financial asset when the contractual rights to the cash flows from the asset expire, or it transfers the rights to receive the contractual cash flows on the financial asset in a transaction in which substantially all the risks and rewards of ownership of the financial asset are transferred, or it neither transfers nor retains substantially all of the risk and rewards of ownership and does not retain control over the transferred asset. Any interest in transferred financial assets that is created or retained by the Company is recognised as a separate asset or liability.

Financial assets and liabilities are offset and the net amount presented in the balance sheet when, and only when, the Company has a legal right to offset the amounts and intends either to settle on a net basis or to realise the asset and settle the liability simultaneously.

The Company classifies non-derivative financial assets into the following categories: loans and receivables.

Loans and receivables

Loans and receivables are financial assets with fixed or determinable payments that are not quoted in an active market. Such assets are recognised initially at fair value plus any directly attributable transaction costs. Subsequent to initial recognition, loans and receivables are measured at amortised cost using the effective interest method, less any impairment losses.

Loans and receivables comprise trade and other receivables, and cash and cash equivalents.

Cash and cash equivalents comprise cash and bank balances.

Non-derivative financial liabilities

The Company initially recognises all financial liabilities on the trade date, which is the date that the Company becomes a party to the contractual provisions of the instrument.

The Company derecognises a financial liability when its contractual obligations are discharged, cancelled or expire.

Financial assets and liabilities are offset and the net amount presented in the balance sheet when, and only when, the Company has a legal right to offset the amounts and intends either to settle on a net basis or to realise the asset and settle the liability simultaneously.

The Company classifies non-derivative financial liabilities into other financial liabilities category. Such financial liabilities are recognised initially at fair value plus any directly attributable transaction costs. Subsequent to initial recognition, these financial liabilities are measured at amortised cost using the effective interest method.

Other financial liabilities comprise employee benefits, trade payables and other payables.

The Company do not have any financial assets and financial liabilities that:

- are offset in the balance sheet; or
- are subject to an enforceable master netting arrangement, irrespective of whether they are offset in the balance sheet.

3.3 Property, plant and equipment

Recognition and measurement

Items of property, plant and equipment are measured at cost less accumulated depreciation and accumulated impairment losses.

Cost includes expenditure that is directly attributable to the acquisition of the asset. The cost of self-constructed assets includes:

- the cost of materials and direct labour;
- any other costs directly attributable to bringing the asset to a working condition for its intended use;
- when the Company has an obligation to remove the asset or restore the site, an estimate of the costs of dismantling and removing the items and restoring the site on which they are located; and
- capitalised borrowing costs.

Purchased software that is integral to the functionality of the related equipment is capitalised as part of that equipment.

Low value assets costing less than \$1,000 individually are written off in the period of outlay.

When parts of an item of property, plant and equipment have different useful lives, they are accounted for as separate items (major components) of property, plant and equipment.

The gain or loss on disposal of an item of property, plant and equipment (calculated as the difference between the net proceeds from disposal and the carrying amount of the item) is recognised in surplus or deficit.

Subsequent costs

The cost of replacing a component of an item of property, plant and equipment is recognised in the carrying amount of the item if it is probable that the future economic benefits embodied within the component will flow to the Company, and its cost can be measured reliably. The carrying amount of the replaced component is derecognised. The costs of the day-to-day servicing of property, plant and equipment are recognised in surplus or deficit as incurred.

Depreciation

Depreciation is calculated based on the cost of an asset, less its residual value. Significant components of individual assets are assessed and if a component has a useful life that is different from the remainder of that asset, that component is depreciated separately.

Depreciation is recognised as an expense in surplus or deficit on a straight-line basis over the estimated useful lives of each component of an item of property, plant and equipment, unless it is included in the carrying amount of another asset.

Depreciation is recognised from the date that the property, plant and equipment are installed and are ready for use, or in respect of internally constructed assets, from the date that the asset is completed and ready for use.

The estimated useful lives for the current and comparative years are as follows:

Building improvements	10 years
Medical and laboratory equipment	8 years
Computers	3 years
Office equipment	5 years
Furniture and fittings	8 years

Depreciation methods, useful lives and residual values are reviewed at each financial year-end and adjusted if appropriate.

3.4 Intangible assets

Computer software, which is not an integral part of the related hardware, is accounted for as an intangible asset and is stated at cost less accumulated amortisation and accumulated impairment losses.

Subsequent expenditure

Subsequent expenditure is capitalised only when it increases the future economic benefits embodied in the specific asset to which it relates. All other expenditure, including expenditure on internally generated goodwill and brands, is recognised in surplus or deficit as incurred.

Amortisation

Amortisation is calculated based on the cost of asset, less its residual value.

Amortisation of computer software is recognised in surplus or deficit on a straight-line basis over its estimated useful life of 3 to 5 years, from the date that they are available for use.

Amortisation methods, useful lives and residual values are reviewed at each financial year-end and adjusted if appropriate.

3.5 Impairment

i. Non-derivative financial assets

A financial asset not carried at fair value through profit or loss is assessed at the end of each reporting period to determine whether there is objective evidence that it is impaired. A financial asset is impaired if objective evidence indicates that a loss event(s) has occurred after the initial recognition of the asset, and that the loss event(s) had a negative effect on the estimated future cash flows of that asset that can be estimated reliably.

Objective evidence that financial assets are impaired can include default or delinquency by a debtor, restructuring of an amount due to the Company on terms that the Company would not consider otherwise, indications that a debtor or issuer will enter bankruptcy, adverse changes in the payment status of borrowers or issuers in the group, economic conditions that correlate with defaults or the disappearance of an active market for a security.

Loans and receivables

The Company considers evidence of impairment for loans and receivables at both specific asset and collective level. All individually significant loans and receivables are assessed for specific impairment. All individually significant loans and receivables found not to be specifically impaired are then

collectively assessed for any impairment that has been incurred but not yet identified. Loans and receivables that are not individually significant are collectively assessed for impairment by grouping together loans and receivables with similar risk characteristics.

In assessing collective impairment, the Company uses historical trends of the probability of default, timing of recoveries and the amount of loss incurred, adjusted for management's judgement as to whether current economic and credit conditions are such that the actual losses are likely to be greater or less than suggested by historical trends.

An impairment loss in respect of a financial asset measured at amortised cost is calculated as the difference between its carrying amount and the present value of the estimated future cash flows discounted at the asset's original effective interest rate. Losses are recognised in surplus or deficit and reflected in an allowance account against loans and receivables. Interest on the impaired asset continues to be recognised. When the Company considers that there are no realistic prospects of recovery of the asset, the relevant amounts are written off. If the amount of impairment loss subsequently decreases and the decrease can be related objectively to an event occurring after the impairment was recognised, then the previously recognised impairment loss is reversed through surplus or deficit.

ii. Non-financial assets

The carrying amounts of the Company's non-financial assets are reviewed at each reporting date to determine whether there is any indication of impairment. If any such indication exists, then the asset's recoverable amount is estimated. An impairment loss is recognised if the carrying amount of an asset or its related cash-generating unit (CGU) exceeds its estimated recoverable amount.

The recoverable amount of an asset or CGU is the greater of its value in use and its fair value less costs to sell. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset or CGU. For the purpose of impairment testing, assets that cannot be tested individually are grouped together into the smallest group of assets that generates cash inflows from continuing use that are largely independent of the cash inflows of other assets or CGU.

Impairment losses are recognised in surplus or deficit. Impairment losses recognised in respect of CGUs are allocated to reduce the carrying amounts of the other assets in the CGU (group of CGUs) on a *pro rata* basis.

Impairment loss recognised in prior periods is assessed at each reporting date for any indications that the loss has decreased or no longer exists. An impairment loss is reversed if there has been a change in the estimates used to determine the recoverable amount. An impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortisation, if no impairment loss had been recognised.

3.6 Employee benefits

Defined contribution plans

A defined contribution plan is a post-employment benefit plan under which an entity pays fixed contributions into a separate entity and will have no legal or constructive obligation to pay further amounts. Obligations for contributions to defined contribution pension plans are recognised as an employee benefit expense in surplus or deficit in the periods during which related services are rendered by employees.

Short-term employee benefits

Short-term employee benefit obligations are measured on an undiscounted basis and are expensed as the related service is provided. A liability is recognised for the amount expected to be paid under short-term cash bonus or profit-sharing plans if the Company has a present legal or constructive obligation to pay this amount as a result of past service provided by the employee and the obligation can be estimated reliably.

3.7 Provision

A provision is recognised if, as a result of a past event, the Company has a present legal or constructive obligation that can be estimated reliably, and it is probable that an outflow of economic benefits will be required to settle the obligation. Provisions are determined by discounting the expected future cash flows at a pre-tax rate that reflects current market assessments of the time value of money and the risks specific to the liability. The unwinding of the discount is recognised as finance cost.

3.8 Income recognition

Grant income

Grant income designated for research purposes is recognised in surplus or deficit when the relevant qualifying costs are incurred. The deferral of certain grant income is described in note 3.9.

Grants which are designated for property, plant and equipment, and intangible assets purchases whose individual value of more than \$1,000 is taken to deferred income in the period of receipt. The deferred income is amortised over the useful life of the property, plant and equipment and intangible assets by crediting to the surplus or deficit an amount so as to match the related depreciation and amortisation expense.

Programme fees

Programme fees relate to fees or income which the Company receives when it carries out activities through direct service provision to undertake the work that contributes to its objectives. Programme fees are recognised in surplus or deficit when the relevant milestone is achieved.

3.9 Government grants

Government grants related to property, plant and equipment are taken to deferred income or to the surplus or deficit for assets which are written off in the year of purchase. Such government grant recognised in deferred income is recognised in the surplus or deficit over the periods necessary to match the depreciation and write off the property, plant and equipment purchased with the related grants. Upon the disposal of the property, plant and equipment, the balance of the related deferred income is recognised in the surplus or deficit to reflect the net book value of the assets disposed.

Government subvention

Government subvention is accounted for on an accrual basis in the surplus or deficit when there is reasonable assurance that the Company has complied with all the terms and conditions attached to the subvention and that there is reasonable certainty that the subvention will be received. Government subvention is a subsidy from the Ministry of Health for expenses incurred in relation to the Temporary occupation licence.

3.10 Research

Expenditure on research activities, undertaken with the prospect of gaining new scientific or technical knowledge and understanding, is recognised in surplus or deficit as incurred.

3.11 Lease payments

Payments made under operating leases are recognised in surplus or deficit on a straight-line basis over the term of the lease. Lease incentives received are recognised as an integral part of the total lease expense, over the term of the lease.

3.12 Finance income and finance cost

Finance income comprises interest income on funds invested and net foreign currency gains that are recognised in surplus or deficit. Interest income is recognised as it accrues in surplus or deficit, using the effective interest method.

Finance costs comprise net foreign currency losses that are recognised in surplus or deficit.

Foreign currency gains and losses on financial assets and financial liabilities are reported on a net basis as either finance income or finance cost depending on whether foreign currency movements are in a net gain or net loss position.

3.13 Tax

The Company has been registered as a Charity, under Charities Act, Cap. 37 with effect from 27 November 2002. No provision for taxation has been made in the financial statements as the Company is a registered charity with income tax exemption.

3.14 Adoption of new standards

A number of new standards and amendments to standards are effective for annual periods beginning after 1 April 2017 and earlier application is permitted; however the Company has not early applied the following new or amended standards in preparing these statements.

The following standards are expected to have a material impact on the Company's financial statements in the period of initial application.

Applicable to 2019 financial statements

FRS 109 Financial Instruments

FRS 109 replaces most of the existing guidance in FRS 39 *Financial Instruments: Recognition and Measurement*. It includes revised guidance on classification and measurement of financial instruments, a new expected credit loss model for calculating impairment on financial assets, and new general hedge accounting requirements. It also carries forward the guidance on recognition and derecognition of financial instruments from FRS 39.

FRS 109 is effective for annual periods beginning on or after 1 January 2018, with early adoption permitted. Retrospective application is generally required, except for hedge accounting. For hedge accounting, the requirements are generally applied prospectively, with some limited exceptions. Restatement of comparative information is not mandatory. If comparative information is not restated, the cumulative effect is recorded in opening equity as at 1 January 2018. The Company plans to adopt the new standard on the required effective date in 2019 without restating comparative information.

The revised guidance on the classification and measurement of financial instruments, a new expected credit loss model for calculating impairment on financial assets of FRS 109 that would have an impact on the Company, with effect from annual periods beginning on or after 1 January 2018, are as described below.

Classification and measurement

The Company does not expect a significant change to the measurement basis arising from adopting the new classification and measurement model under FRS 109. Loans and receivables that are currently accounted for at amortised cost will continue to be accounted for using amortised cost model under FRS 109.

Impairment

FRS 109 replaces the 'incurred loss model' with a forward-looking expected credit loss (ECL) model. The new impairment model will apply to financial assets measured at amortised cost or FVOCI, except for investments in equity instruments, and certain loan commitments and financial guarantee contracts.

Under FRS 109, loss allowances of the Company will be measured on either of the following bases:

- 12-month ECLs. These are ECLs that result from possible default events within the 12 months after the reporting date; or
- Lifetime ECLs. These are ECLs that result from all possible default events over the expected life of a financial instrument.

The Company plans to apply the simplified approach and record lifetime ECL on all trade receivables arising from the application of FRS 115.

Trade and other receivables

The estimated ECLs were calculated based on actual credit loss experience over the past three years. The Company performed the calculation of ECL rates for corporates.

Exposures within each entities were segmented based on common credit risk characteristic such as credit risk grade, geographical region and industry – for corporates; and delinquency status, geographic region, age of relationship and type of product/service purchased – for individuals.

The Company estimated that application of FRS 109's impairment requirements at 1 April 2018 results in increase of \$106,662 over the impairment recognised under FRS 39.

The Company is currently finalising the testing of its expected credit loss model and the quantum of the final transition adjustments may be different upon finalisation.

Cash and cash equivalents

The cash and cash equivalents are held with bank and financial institution counterparties, which are rated A- to AA-, based on S&P's ratings as at 31 March 2018.

The estimated impairment on cash and cash equivalents was calculated based on the 12-month expected loss basis and reflects the short maturities of the exposures. 12-month and lifetime probabilities of default were based on historical data supplied by S&P for each credit rating and were recalibrated based on current bond yields and CDS prices. The Company considers that its cash and cash equivalents have low credit risk based on the external credit ratings of the counterparties.

The Company does not expect significant financial impact on the application of FRS 109's impairment requirements on cash and cash equivalent as at 1 April 2018.

Applicable to 2020 financial statements

FRS 116 *Leases*

FRS 116 eliminates the lessee's classification of leases as either operating leases or finance leases and introduces a single lessee accounting model. Applying the new model, a lessee is required to recognise right-of-use (ROU) assets and lease liabilities for all leases with a term of more than 12 months, unless the underlying asset is of low value.

FRS 116 substantially carries forward the lessor accounting requirements in FRS 17 *Leases*. Accordingly, a lessor continues to classify its leases as operating leases or finance leases, and to account for these two types of leases using the FRS 17 operating lease and finance lease accounting models respectively. However, FRS 116 requires more extensive disclosures to be provided by a lessor.

When effective, FRS 116 replaces existing lease accounting guidance, including FRS 17, INT FRS 104 *Determining whether an Arrangement contains a Lease*; INT FRS 15 *Operating Leases-Incentives*; and INT FRS 27 *Evaluating the Substance of Transactions Involving the Legal Form of a Lease*.

FRS 116 is effective for annual periods beginning on or after 1 January 2019, with early adoption permitted if FRS 115 is also applied.

The Company has performed a preliminary assessment of the new standard on its existing operating lease arrangements as a lessee. There are several existing non-cancellable operating lease agreements in which the Company is a lessee. Overall, the Company expects these operating leases to be recognised as ROU assets with corresponding lease liabilities under the new standard. Such operating lease commitments on an undiscounted basis amount to approximately \$2,192,975 as at 31 March 2018 (note 21).

The Company plans to adopt the standard when it becomes effective in 2020 and expects to apply the standard using the modified retrospective approach. The Company will perform a detailed analysis of the standard, including the transition options and practical expedients in 201.

4. Property, plant and equipment

	Building improvements \$	Medical and laboratory equipment \$	Computers \$	Office equipment \$	Furniture and fittings \$	Motor vehicle \$	Construction -in-progress \$	Total \$
Cost								
At 1 April 2016	1,047,102	15,993,302	1,310,050	117,846	278,845	–	–	18,747,145
Additions	–	1,231,743	129,709	2,675	44,459	–	–	1,408,586
Disposals	–	(378,756)	(59,951)	–	–	–	–	(438,707)
At 31 March 2017	1,047,102	16,846,289	1,379,808	120,521	323,304	–	–	19,717,024
Additions	–	1,334,090	110,338	–	63,733	401,661	143,367	2,053,189
Disposals	–	(1,295,665)	(4,090)	–	–	–	–	(1,299,755)
Transfer	–	126,994	–	–	–	–	(126,994)	–
At 31 March 2018	1,047,102	17,011,708	1,486,056	120,521	387,037	401,661	16,373	20,470,458
Accumulated depreciation								
At 1 April 2016	1,030,927	9,975,676	1,112,470	111,986	182,697	–	–	12,413,756
Depreciation charge for the year	5,261	1,560,773	153,178	4,194	26,740	–	–	1,750,146
Disposals	–	(349,391)	(59,951)	–	–	–	–	(409,342)
At 31 March 2017	1,036,188	11,187,058	1,205,697	116,180	209,437	–	–	13,754,560
Depreciation charge for the year	4,378	1,396,723	125,124	2,090	30,535	40,166	–	1,599,016
Disposals	–	(1,257,327)	(4,090)	–	–	–	–	(1,261,417)
At 31 March 2018	1,040,566	11,326,454	1,326,731	118,270	239,972	40,166	–	14,092,159
Carrying amounts								
At 1 April 2016	16,175	6,017,626	197,580	5,860	96,148	–	–	6,333,389
At 31 March 2017	10,914	5,659,231	174,111	4,341	113,867	–	–	5,962,464
At 31 March 2018	6,536	5,685,254	159,325	2,251	147,065	361,495	16,373	6,378,299

5. Intangible Assets

	Computer software
	\$
Cost	
At 1 April 2016	1,514,679
Additions	200,729
At 31 March 2017	<u>1,715,408</u>
Additions	18,127
At 31 March 2018	<u><u>1,733,535</u></u>
Accumulated amortisation	
At 1 April 2016	1,017,294
Amortisation charge for the year	305,200
At 31 March 2017	<u>1,322,494</u>
Amortisation charge for the year	248,623
At 31 March 2018	<u><u>1,571,117</u></u>
Carrying amounts	
At 1 April 2016	<u>497,385</u>
At 31 March 2017	<u>392,914</u>
At 31 March 2018	<u><u>162,418</u></u>

6. Trade and other receivables

	Note	2018	2017
		\$	\$
Deposits and other receivables	7	13,017,656	14,666,356
Trade amounts due from:			
- Immediate holding company		2,025,662	215,602
- Intermediate holding company		722,139	392,486
- Related corporations		212,086	61,798
		<u>15,977,543</u>	<u>15,336,242</u>

Outstanding balances with related parties are unsecured. There are no allowance for doubtful debts arising from these outstanding balances.

The Company's exposure to credit and currency risks is disclosed in note 20.

7. Deposits and other receivables

	Note	2018 \$	2017 \$
Deposits		16,895	15,568
Receivables from funding bodies		12,347,354	13,984,661
Grant receivables from third parties		545,768	622,127
Sundry receivables		107,639	44,000
	6	13,017,656	14,666,356

Receivables from funding bodies are non-interest bearing and have no credit terms.

8. Cash and cash equivalents

	2018 \$	2017 \$
Cash at bank and in hand	10,117,110	6,908,578

9. Accumulated fund

The Company is limited by guarantee and has no share capital. In the event of a winding up of the Company, the liability of each member of the Company is limited to such amount as may be required, but not exceeding the sum of one hundred dollars (\$100). The accumulated fund represents the cumulative surplus of the Company.

The Company's reserve policy is to maintain funds at a minimum sufficient to cover budgeted operating and capital cost for the current fiscal year. In the event of an operating deficit or a shortfall of current assets over current liabilities, the Company will obtain appropriate financial support from its immediate holding company to pay liabilities, as and when they fall due.

Capital management

Capital comprises the accumulated fund of the Company. The Company's operation is funded primarily from grants from various funding bodies and loan from immediate holding company. There was no change in the Company's approach to capital management during the year. The Company is not subject to externally imposed capital requirements.

10. Deferred income

	2018	2017
	\$	\$
At cost	21,220,003	20,492,413
Less: Accumulated amortisation:		
At 1 April	14,391,969	12,892,032
Amortisation for the year	1,708,451	1,799,684
Disposal of assets funded by grants	(1,284,783)	(299,747)
At 31 March	14,815,637	14,391,969
	<u>6,404,366</u>	<u>6,100,444</u>
Non-current	4,451,576	4,055,622
Current	1,952,790	2,044,822
	<u>6,404,366</u>	<u>6,100,444</u>

Deferred income relates to capital expenditure grants (note 14) received for the purchase of property, plant and equipment ("PPE") and intangible assets ("IA"). Deferred income is amortised over the periods necessary to match the depreciation of the PPE and amortisation of the IA purchased with the related grants.

11. Trade payables

	2018	2017
	\$	\$
Trade payables	2,714,656	2,435,440
Amounts due to:		
- Immediate holding company (trade)	456,044	520,744
- Intermediate holding company (trade)	2,745,994	1,324,822
- Related corporations (trade)	302,189	129,011
	<u>6,218,883</u>	<u>4,410,017</u>

The Company's exposure to currency and liquidity risks related to trade payables is disclosed in note 20.

12. Other payables

	2018	2017
	\$	\$
Accrued operating expenses	2,960,579	2,895,097
Loans from immediate holding company	6,000,000	6,000,000
Research grants received in advance from government	3,514,533	211,787
Research grants received in advance from third parties	3,068,956	4,893,576
Research grants received in advance from related corporation	4,334,946	2,219,693
Refundable deposits	940	940
	<u>19,879,954</u>	<u>16,221,093</u>

Loans from immediate holding company are unsecured, interest-free and repayable on demand.

The Company's exposure to currency and liquidity risks related to other payables is disclosed in note 20.

13. Employee benefits

	2018	2017
	\$	\$
Liability for short-term accumulating compensated absences	<u>735,420</u>	<u>736,000</u>

14. Operating/capital expenditure grants

These grants are received mainly from National Medical Research Council, Biomedical Research Council, SingHealth Foundation, Singapore Health Services Pte Ltd, Singapore National Eye Centre Pte Ltd and SNEC Health Research Endowment Fund for research projects.

15. Other Income

	2018	2017
	\$	\$
Other research grants and programme fees	3,597,279	2,896,584
Other miscellaneous income	703,717	446,497
	<u>4,300,996</u>	<u>3,343,081</u>

16. Finance costs

	2018	2017
	\$	\$
Exchange loss (net)	<u>(2,606)</u>	<u>(2,494)</u>

17. Government subvention

During the year, the Ministry of Health granted approval to the Company to claim government subvention for expenses incurred in relation to the Temporary occupation licence (“TOL”) for financial years 2018, 2017, 2016 and 2015. Prior to that, TOL was funded through the operating expenditure grants from National Medical Research Council.

Government subvention is recognised in the surplus or deficit when conditions attached to its recognition are met by the Company. The Government is currently reviewing and finalising the subvention paid and payable to the Company in respect of the current year, no adjustment has been made in the financial statements for this component in the current financial year.

18. Tax expense

The Company is a non-profit organisation registered with the Commissioner of Charities under the Singapore Charities Act. With effect from Year of Assessment 2008, all registered and exempt charities will enjoy automatic income tax exemption. Thus, no provision for taxation was made in the financial statements.

19. Deficit for the year

The following items have been included in arriving at deficit for the year:

	Note	2018 \$	2017 \$
Temporary occupation licence (“TOL”) and other operating lease expense		2,226,850	2,149,782
Contributions to defined contribution plan included in staff costs		1,702,294	1,683,330
Loss on disposal of property, plant and equipment		16,938	29,364
Reversal of accrued rental and utilities expenses no longer required *		—	(818,242)
		<hr/>	<hr/>

*Reversal of accrued rental and utilities expenses were related to the downward revision of rental and utilities charges effective from February 2014 based on Sub-Tenancy Agreement dated 16 May 2017 signed between the intermediate holding company and the Company.

20. Financial instruments

Overview

The Company has exposure to the following risks from its use of financial instrument

- credit risk
- liquidity risk
- market risk

This note presents information about the Company’s exposure to each of the above risks, the Company’s objectives, policies and processes for measuring and managing risk.

Risk management framework

Risk management is integral to the whole business of the Company. The Company has a system of controls in place to create an acceptable balance between cost of risks and the cost of managing the risks. The management continually monitors the Company's risk management process to ensure that an appropriate balance between risk and control is achieved. Risk management policies and systems are reviewed regularly to reflect changes in market conditions and the Company's activities.

Credit risk

Credit risk is the risk of financial loss to the Company if a customer or counterparty to a financial instrument fails to meet its contractual obligations, and arises principally from the funding bodies and related parties, as and when they fall due.

The carrying amount of financial assets in the balance sheet represents the Company's respective maximum exposure to credit risk, before taking into account any collateral held. The Company does not hold any collateral in respect of its financial assets.

Cash is placed with financial institutions which are regulated.

At the reporting date, there is no significant concentration of credit risk.

The maximum exposure to credit risk for trade and other receivables of the Company at the reporting date (by type of debtor) is:

	2018	2017
	\$	\$
Funding bodies	12,347,354	13,984,661
Corporations	3,630,189	1,351,581
	<u>15,977,543</u>	<u>15,336,242</u>

The funding bodies and corporations are established and reputable institutions which management regarded the associated credit risk to be minimum

Impairment

The ageing of trade and other receivables that were not impaired at the reporting date was:

	2018	2017
	\$	\$
No credit terms	15,101,810	14,647,858
Not past due	594,567	165,521
Past due 1 – 30 days	122,566	117,144
Past due 31 – 150 days	122,813	94,181
Past due over 150 days	35,787	311,538
	<u>15,977,543</u>	<u>15,336,242</u>

Liquidity risk

Liquidity risk is the risk that the Company will encounter difficulty in meeting the obligations associated with its financial liabilities that are settled by delivering cash or another financial asset. The Company's approach to managing liquidity is to ensure, as far as possible, that it will always have sufficient liquidity to meet its liabilities when due under normal and stressed conditions without incurring unacceptable losses or risking damage to the Company's reputation.

The Company's operation is funded primarily from grants from National Medical Research Council and loans from immediate holding company. As such, the Company's exposure to liquidity risk is minimised.

The Company monitors its liquidity risk and maintains a level of cash and cash equivalents deemed adequate by management to finance the Company's operations and to mitigate the effects of fluctuations in cash flows.

As at reporting date, the Company has a deficiency in net current assets and net assets. To enable the Company to meet its requirements for working capital and capital expenditure commitments, the immediate holding company agreed not to demand settlement of loans due from the Company amounting to \$6,000,000 within the next 12 months from the date of approval of the financial statements, unless the funds of the Company permits repayment and that such repayment will not adversely affect the ability of the Company to carry on their business operations as a going concern.

The following are the contractual maturities of financial liabilities, including estimated interest payments and excluding the impact of netting agreements:

	Note	Carrying amount	Total contractual cash flows	Within 1 year
		\$	\$	\$
2018				
Non-derivative financial liabilities				
Trade payables	11	6,218,883	(6,218,883)	(6,218,883)
Other payables*	12	8,961,519	(8,961,519)	(8,961,519)
Employee benefits	13	735,420	(735,420)	(735,420)
		<u>15,915,822</u>	<u>(15,915,822)</u>	<u>(15,915,822)</u>

	Note	Carrying amount	Total contractual cash flows	Within 1 year
		\$	\$	\$
2017				
Non-derivative financial liabilities				
Trade payables	11	4,410,017	(4,410,017)	(4,410,017)
Other payables*	12	8,896,037	(8,896,037)	(8,896,037)
Employee benefits	13	736,000	(736,000)	(736,000)
		<u>14,042,054</u>	<u>(14,042,054)</u>	<u>(14,042,054)</u>

*Excludes research grants received in advance from government, third parties and related corporation

Market risk

Market risk is the risk that changes in market prices, such as interest rates, foreign exchange rates and equity prices will affect the Company's income or the value of its holdings of financial instruments. The objective of market risk management is to manage and control market risk exposures within acceptable parameters, while optimising the return.

Interest rate risk

The Company has no significant exposure to interest rate risk.

Foreign currency risk

The financial assets and liabilities of the Company are primarily denominated in Singapore dollars. The Company has no significant exposure to foreign currency risk.

Accounting classifications and fair values

The carrying amounts of recognised financial assets and liabilities which are not measured at fair value as shown in the balance sheet are as follows. It does not include fair value information for financial assets and financial liabilities not measured at fair value if the carrying amount is a reasonable approximation of fair value.

The carrying amounts of financial assets and liabilities with a maturity of less than one year (including trade and other receivables, cash and cash equivalents, trade payables, other payables and employee benefits) approximate their fair values because of the short period to maturity.

	Note	Loans and receivables \$	Other financial liabilities \$	Total carrying amount \$
31 March 2018				
Financial assets not measured at fair value				
Cash and cash equivalents	8	10,117,110	–	10,117,110
Trade and other receivables	6	15,977,543	–	15,977,543
		<u>26,094,653</u>	<u>–</u>	<u>26,094,653</u>
Financial liabilities not measured at fair value				
Trade payables	11	–	(6,218,883)	(6,218,883)
Other payables	12	–	(19,879,954)	(19,879,954)
Employee benefits	13	–	(735,420)	(735,420)
		<u>–</u>	<u>(26,834,257)</u>	<u>(26,834,257)</u>

	Note	Loans and receivables \$	Other financial liabilities \$	Total carrying amount \$
31 March 2017				
Financial assets not measured at fair value				
Cash and cash equivalents	8	6,908,578	–	6,908,578
Trade and other receivables	6	15,336,242	–	15,336,242
		<u>22,244,820</u>	<u>–</u>	<u>22,244,820</u>
Financial liabilities not measured at fair value				
Trade payables	11	–	(4,410,017)	(4,410,017)
Other payables	12	–	(16,221,093)	(16,221,093)
Employee benefits	13	–	(736,000)	(736,000)
		<u>–</u>	<u>(21,367,110)</u>	<u>(21,367,110)</u>

21. Commitments

At 31 March 2018, the Company has commitments for future minimum lease payments under non-cancellable operating leases (including those under Temporary Occupation License) as follows:

	2018 \$	2017 \$
Within 1 year	2,185,725	2,101,208
After 1 year but within 5 years	7,250	2,173,015
	<u>2,192,975</u>	<u>4,274,223</u>

The operating lease commitments mainly relate to the lease of space and office equipment. The Leases run for a period of one to four years with an option to renew the lease after that date.

22. Related parties

Collectively, but not individually significant transactions

The Company charges its immediate holding company for manpower services provided and purchases services from its intermediate holding company, immediate holding company and related corporations.

Other related party transactions

Other than disclosed elsewhere in the financial statements, the transactions with related parties are as follows:

	2018 \$	2017 \$
Other income received/receivable		
Intermediate holding company	(509,032)	(548,046)
Immediate holding company	(1,515,176)	(1,009,848)
Related corporation	(1,080,282)	(898,077)
	<u>(3,104,490)</u>	<u>(2,455,971)</u>

	2018	2017
	\$	\$
Sale of other services		
Immediate holding company	(36,650)	(67,755)
Related corporation	(162,098)	(6,806)
Purchase of manpower services		
Intermediate holding company	210,447	–
Immediate holding company	506,558	664,333
Related corporation	80,273	39,394
Purchase of other services		
Intermediate holding company	884,129	981,040
Immediate holding company	570,607	606,455
Related corporation	554,577	542,745
Purchase of supplies and consumables		
Intermediate holding company	456,313	606,326
Immediate holding company	9,283	13,888
Other expenses paid/payable		
Intermediate holding company	2,536,705	1,307,567
Immediate holding company	233,651	209,920
Related corporations	85,843	65,464

The Company occupies space at the premises of its intermediate and immediate holding companies. The current year rental of \$194,947 (2017: \$225,646) is waived by the immediate holding company.

Key management personnel remuneration

Key management personnel of the Company are those persons having the authority and responsibility for planning, directing and controlling the activities of the Company. The senior management are considered as key management personnel of the Company.

Key management personnel remuneration recognised in the statement of comprehensive income is as follows:

	2018	2017
	\$	\$
Key management personnel		
- short-term employee benefits	1,547,756	1,534,978
- contribution to defined contribution plan	56,967	47,473
	<u>1,604,723</u>	<u>1,582,451</u>

In compliance with the Code of Corporate Governance for Charities and Institutions of a Public Character - Guideline 8.3, the annual remuneration of the Company's three highest paid staff who each received remuneration exceeding \$100,000, in the following bands in the year are as follows:

	2018	2017
Number of personnel in bands:		
- \$200,001 to \$300,000	1	1
- \$300,001 to \$400,000	1	1
- \$400,001 to \$500,000	1	1