

# Seri Singapore Eye Research Institute

Copeland and Afshari's Principles and Practice of Cornea  
 Glaucoma  
 Myopia: Public Health Challenges and Interventions  
 50 Years Of Science In Singapore  
 Women in Science - Ophthalmology 2021  
 Handbook of Basic and Clinical Ocular Pharmacology and Therapeutics  
 Artificial Intelligence and Ophthalmology  
 The Singapore Research Story  
 Translational Neuroimmunology, Volume 7  
 Deep Learning in Medical Image Analysis  
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## ORLANDO MARQUES

*Copeland and Afshari's Principles and Practice of Cornea* Frontiers Media SA

As part of the commemorative book series on Singapore's 50 years of nation-building, this important compendium traces the history and development of the various sectors of Singapore science in the last 50 years or so. The book covers the government agencies responsible for science funding and research policy, the academic institutions and departments who have been in the forefront of the development of the nation's scientific manpower and research, the research centres and institutes which have been breaking new ground in both basic and applied science research, science museums and education, and the academic and professional institutions which the scientific community has set up to enable Singapore scientists to serve the nation more effectively. Each article is chronicled by eminent authors who have played important roles and made significant contributions in shaping today's achievement of science in Singapore. Professionals, academics, students and the general public will find this volume a useful reference material and an inspirational easy read.

**Glaucoma** Frontiers Media SA

Retinal vessels have embryological, anatomical and physiological similarities with coronary and cerebral vessels and many systemic vascular pathologies, such as hypertension, diabetes, and cardiovascular disease affect the retinal vessels from function to structure. In addition, ocular disorders that constitute major public health problems, either directly involve retinal and/or choroidal vessels such as age-related macular degeneration and diabetic retinopathy, or have vascular factors as risk factors such as myopia or glaucoma. Understanding the vascular processes that occur in these diseases could advance our understanding of visual compromise associated with these disorders and, possibly, their prevention. Moreover, using the eye as a window to the vascular health of the human body is also of major interest. As such, many efforts are made to develop technologies that are able to assess, in a non-invasive way, the functional and structural changes of retinal and choroidal vessels and provide biomarkers of ocular and systemic vascular diseases. These technologies could be used to assess not only the individual risk for development and progression of vascular disease at both the systemic and ocular level, but also the efficacy of various interventions, from prevention and medical treatments to surgical and laser procedures.

*Myopia: Public Health Challenges and Interventions* Frontiers Media SA

SERI World Scientific

*50 Years Of Science In Singapore* JP Medical Ltd

*Translational Neuroimmunology: Neuroinflammation* updates on bench to bedside studies on neurological disorders that have immunological etiologies. The book covers neuroimmunology and the principles of autoimmune and autoinflammatory neurological disorders, with multiple sclerosis as the main focus. The immunopathology, genetics and epigenetics, microbiome, diagnosis and treatment of multiple sclerosis will be explained in ten chapters. A chapter also examines distinct aspects of pericytes, with final discussions on the neurologic manifestations, diagnostic approaches and treatments of the various neuroimmune disorders and lessons learned from translational research on non-human primates and zebrafish. All sections are presented in an accessible, practical format, making this volume a valuable resource for immunologists, neurologists and researchers in translational biomedical research. - Gives an introduction on neuroimmunological diseases, from bench to bedside - Encourages the development of immunologic approaches to analyze the interaction and specific properties of nervous tissue elements during development and disease - Focuses on understanding and therapeutically manipulating immunological responses to injury, degeneration and autoimmunity in the central nervous system - Proves changes in relevant immune and inflammatory reactions at the cellular and molecular level during the development of nervous system diseases

*Women in Science - Ophthalmology 2021* World Scientific

Since the last Edition of Ophthalmology Examinations Review, there has been major new discovery in the understanding of common eye diseases, and new treatments and diagnostic procedures have been refined or newly developed. A revised Edition reflecting these changes is warranted at this time. The aim and scope of the book will be consistent with the previous two editions in that it will provide a broad review for the final year ophthalmology resident and trainees taking the specialist ophthalmology examinations. The book deals primarily with key facts and topics that are important from an examination perspective. Only information and facts that are considered relevant and critical to the exams are covered, with topics that may be of scientific interest, but are not common to exams specifically left out. This book will help the resident organize and synthesize knowledge acquired from various other sources or textbooks. While not meant to replace standard textbooks, enough information is contained within the book to serve as the main revision text nearer the exams. The style and format of this book is intentionally didactic, with questions and short answers. The answer includes a 'model opening statement,' followed by a classification system to aid organization of facts and then by the bulk of the answer in concise short notes. Exam Tips are inserted to provide an insight into how to answer different types of questions and when appropriate, a Clinical Approach section is also included. In the new edition, topics such as new understanding of disease mechanisms, new investigations (e.g. OCT), and new procedures and treatment (e.g. use of anti-vascular endothelial growth factors, new refractive surgical techniques, new corneal transplant) are covered.

**Handbook of Basic and Clinical Ocular Pharmacology and Therapeutics** Frontiers Media SA  
 Pathologic Myopia is a major cause of severe vision loss worldwide. The mechanisms for vision loss include cataract, glaucoma, retinal detachment, and above all, myopic maculopathy within the posterior staphyloma. The first edition of Pathologic Myopia is one of the only current books to specifically address this disease and discusses recent developments in imaging technologies and various approaches to treatments, such as laser photocoagulation, photodynamic therapy, pharmacotherapeutic injections in the vitreous, and surgery. This new edition is a timely update to the standard reference in the field, with new chapters on advanced refractive error correction, genetics, developing a classification system, and special surgical approaches for pathologic myopia. Complete with even more high-quality color images and informative tables, this book is written and edited by leaders in the field and is geared towards ophthalmologists, including residents and fellows in training, glaucoma and cataract specialists, and vitreoretinal macula experts.

*Artificial Intelligence and Ophthalmology* Elsevier

The cornea is the transparent front part of the eye covering the iris and the pupil, allowing light to enter and covering two thirds of the eye's focusing tasks. This two volume set is a comprehensive guide to the latest research and techniques for the cornea. Beginning with basic science, examination techniques and epidemiology, the following chapters discuss the diagnosis and the medical and surgical treatment of numerous different conditions and diseases that may affect the cornea. Written by an extensive international editor and author team, this manual features more than 1300 full colour clinical and histopathological images, as well as a DVD demonstrating a multitude of surgical techniques described in the book. Key points Comprehensive two volume set describing diagnosis and treatment of numerous corneal disorders Features more than 1300 colour images and illustrations Includes a DVD demonstrating surgical techniques and procedures Extensive international author and editor team

*The Singapore Research Story* Frontiers Media SA

The three-volume set LNCS 6891, 6892 and 6893 constitutes the refereed proceedings of the 14th International Conference on Medical Image Computing and Computer-Assisted Intervention, MICCAI 2011, held in Toronto, Canada, in September 2011. Based on rigorous peer reviews, the program committee carefully selected 251 revised papers from 819 submissions for presentation in three

volumes. The third volume includes 82 papers organized in topical sections on computer-aided diagnosis and machine learning, and segmentation.

*Translational Neuroimmunology, Volume 7* Springer Nature

This book presents cutting-edge research and applications of deep learning in a broad range of medical imaging scenarios, such as computer-aided diagnosis, image segmentation, tissue recognition and classification, and other areas of medical and healthcare problems. Each of its chapters covers a topic in depth, ranging from medical image synthesis and techniques for musculoskeletal analysis to diagnostic tools for breast lesions on digital mammograms and glaucoma on retinal fundus images. It also provides an overview of deep learning in medical image analysis and highlights issues and challenges encountered by researchers and clinicians, surveying and discussing practical approaches in general and in the context of specific problems. Academics, clinical and industry researchers, as well as young researchers and graduate students in medical imaging, computer-aided-diagnosis, biomedical engineering and computer vision will find this book a great reference and very useful learning resource.

*Deep Learning in Medical Image Analysis* Frontiers Media SA

This book examines the interconnections between artificial intelligence, data governance and private law rules with a comparative focus on selected jurisdictions in the Asia-Pacific region. The chapters discuss the myriad challenges of translating and adapting theory, doctrines and concepts to practice in the Asia-Pacific region given their differing circumstances, challenges and national interests. The contributors are legal experts from the UK, Israel, Korea, and Singapore with extensive academic and practical experience. The essays in this collection cover a wide range of topics, including data protection and governance, data trusts, information fiduciaries, medical AI, the regulation of autonomous vehicles, the use of blockchain technology in land administration, the regulation of digital assets and contract formation issues arising from AI applications. The book will be of interest to members of the judiciary, policy makers and academics who specialise in AI, data governance and/or private law or who work at the intersection of these three areas, as well as legal technologists and practising lawyers in the Asia-Pacific, the UK and the US.

*Women in Science: Chemistry* SERI

Artificial Intelligence Medicine: Technical Basis and Clinical Applications presents a comprehensive overview of the field, ranging from its history and technical foundations, to specific clinical applications and finally to prospects. Artificial Intelligence (AI) is expanding across all domains at a breakneck speed. Medicine, with the availability of large multidimensional datasets, lends itself to strong potential advancement with the appropriate harnessing of AI. The integration of AI can occur throughout the continuum of medicine: from basic laboratory discovery to clinical application and healthcare delivery. Integrating AI within medicine has been met with both excitement and scepticism. By understanding how AI works, and developing an appreciation for both limitations and strengths, clinicians can harness its computational power to streamline workflow and improve patient care. It also provides the opportunity to improve upon research methodologies beyond what is currently available using traditional statistical approaches. On the other hand, computers scientists and data analysts can provide solutions, but often lack easy access to clinical insight that may help focus their efforts. This book provides vital background knowledge to help bring these two groups together, and to engage in more streamlined dialogue to yield productive collaborative solutions in the field of medicine. - Provides history and overview of artificial intelligence, as narrated by pioneers in the field - Discusses broad and deep background and updates on recent advances in both medicine and artificial intelligence that enabled the application of artificial intelligence - Addresses the ever-expanding application of this novel technology and discusses some of the unique challenges associated with such an approach

*Advanced Glaucoma Surgery* World Scientific

Just 10 years ago, ophthalmic research was almost unheard of in Singapore. With little money and no infrastructure, ophthalmologists and scientists expressed scant interest in research. Today, however, ophthalmic research in Singapore is at a high international level, as exemplified by the activities of the Singapore Eye Research Institute (SERI), which is capable of competing with and challenging the world's leading eye research centers. Indeed, the world-class research carried out at SERI has helped to extend Singapore's international reach as the country moves towards its goal of becoming a global city and a leading nation influencing developments across Asia and the world. This book summarizes a decade of hard work, dedication, and commitment by a handful of doctors and researchers in their efforts to establish SERI and ensure its success. In particular, the remarkable contributions of two of Singapore's ophthalmic pioneers, the late Associate Professor Chew Sek Jin and current Professor Donald Tan, are acknowledged. The book will inspire leaders of developing nations in visualizing how research can develop rapidly in their own country, and how support and facilities may materialize if they can gather a few dedicated, intelligent researchers.

*Fundamental Osce Guide In Ophthalmology* World Scientific

The book helps to explore the vast expanse of artificial intelligence-based scientific content that has been published in the last few years. Ophthalmology has recently undergone a silent digital revolution, with machine learning and deep learning algorithms consistently outperforming human graders in studies published across the globe. It is high time that a resource that breaks this information behemoth into easily digestible bits comes to the fore. This book simplifies the complex mechanics of algorithms used in ophthalmology and vision science applications. It also tries to address potential ethical issues with machines entering our clinics and patients' lives. Overall it is essential reading for ophthalmologists/eye care professionals interested in artificial intelligence and everyone who is looking for a deep dive into the exciting world of digital medicine.

**Visual Snow: Old Problem, New Understanding** Frontiers Media SA

This text provides expert instruction on the techniques currently employed for the surgical treatment of glaucomatous disease, covering both the host of novel microinvasive devices for treatment of milder stages and the refined strategies that enhance success rates in patients with advanced disease. The critical steps in each procedure are clearly described with the aid of many high-quality illustrations and surgical videos. Pearls and pitfalls of the various techniques are highlighted, and helpful information is provided on indications, preoperative considerations, potential intra- and postoperative complications, and strategies for reducing the incidence of such adverse events. Each treatment method is addressed in a dedicated stand-alone chapter, ensuring ease of reference for the practitioner. Readers will find this book, written by internationally recognized experts in the field, to be an exceptional source of up-to-date information on advanced glaucoma surgical techniques.

*Diagnosis, Prevention and Treatment in Diabetic Nephropathy* Academic Press

Section 1. Epidemiology and risk factors. ch. 1.1. Epidemiology of myopia and myopic shift in refraction / Barbara E.K. Klein. ch. 1.2. Environmental risk factors for myopia in children / Wilson C.J. Low, Tien-Yin Wong and Seang-Mei Saw. ch. 1.3. Gene-environment interactions in the aetiology of

myopia / Ian G. Morgan and Kathryn A. Rose. ch. 1.4. The economics of myopia / Marcus C.C. Lim and Kevin D. Frick -- Section 2. Clinical studies and pathologic myopia. ch. 2.1. Quality of life and myopia / Ecosse L. Lamoureux and Hwee-Bee Wong. ch. 2.2. Ocular morbidity of pathological myopia / V. Swetha E. Jegannathan, Seang-Mei Saw and Tien-Yin Wong. ch. 2.3. Myopia and glaucoma / Shamira A. Perera and Tin Aung. ch. 2.4. The myopic retina / Shu-Yen Lee. ch. 2.5. Retinal function / Chi D. Luu and Audrey W.L. Chia -- Section 3. Genetics of myopia. ch. 3.1. New approaches in the genetics of myopia / Liang K. Goh, Ravikanth Metlapally and Terri Young. ch. 3.2. Twins studies and myopia / Maria Schäche and Paul N. Baird. ch. 3.3. TIGR, TGFB1, cMET, HGF, collagen genes, and myopia / Chiea-Chuen Khor. ch. 3.4. Statistical analysis of genome-wide association studies for myopia / Yi-Ju Li and Qiao Fan -- Section 4. Animal models and the biological basis of myopia. ch. 4.1. The relevance of studies in chicks for understanding myopia in humans / Josh Wallman and Debora L. Nickla. ch. 4.2. The mechanisms regulating scleral change in myopia / Neville A. McBrien. ch. 4.3. The mouse model of myopia / Frank Schaeffel. ch. 4.4. Gene analysis in experimental animal models of myopia / Roger W. Beuerman, Liang K. Goh and Veluchamy A. Barathi -- Section 5. Interventions for myopia. ch. 5.1. Atropine and other pharmacological approaches to prevent myopia / Louis M.G. Tong, Veluchamy A. Barathi and Roger W. Beuerman. ch. 5.2. Physical factors in myopia and potential therapies / Wallace S. Foulds and Chi D. Luu

*Medical Image Computing and Computer-Assisted Intervention - MICCAI 2011* Frontiers Media SA

This book is open access under a CC BY 4.0 license. This open access book discusses basic clinical concepts of myopia, prevention of progression and surgical treatments for myopia and pathological myopia. It also summarises the latest evidence and best practices for managing myopia, high myopia and its complications. Written by leading experts, the book addresses clinical diagnosis and interpretation of imaging modalities, and various complications of myopia such as glaucoma, choroidal neovascularization, retinal degeneration and cataracts. It is a valuable comprehensive resource for general and sub-specialist ophthalmologists as well as residents and ophthalmologists in training.

*Artificial Intelligence in Medicine* Frontiers Media SA

Descemet's Stripping Automated Endothelial Keratoplasty (DSAEK) is the current preferred technique of Endothelial Keratoplasty and involves replacing only the inner endothelial cell layer, rather than the whole thickness of the cornea, as happens in a conventional full-thickness graft (ChadRostron.co.uk). This reference is a guide to the technique of DSAEK. Beginning with an introduction to the procedure and pre-operative evaluation, the following chapters discuss in detail different surgical techniques, including pre-operative preparation, anaesthesia, the procedure, post-operative follow up and complications. Authored by recognised specialists in Australia, Hong Kong and India, this comprehensive manual includes more than 230 full colour illustrations and radiographic images, as well as a DVD demonstrating surgical techniques. Key points Comprehensive guide to technique of DSAEK Features more than 230 full colour illustrations and radiographic images Includes DVD demonstrating surgical techniques

**Seri: Singapore's World-class Research - Singapore Eye Research Institute** Frontiers Media SA

As the irreversible effects of glaucoma can lead to blindness, there is high demand for early diagnosis and an ongoing need for practitioners to adopt new and evolving medical and surgical treatment options to improve patient outcomes. Glaucoma, Second Edition is the most comprehensive resource in the field delivering expert guidance for the most timely and effective diagnosis and treatment of glaucoma - aimed at specialists, fellows and general ophthalmologists. More than 300 contributors from six continents provide a truly global perspective and explore new approaches in this user friendly reference which has been updated with enhanced images, more spotlights, new videos, and more. - Get all the accuracy, expertise, and dependability you could ask for from leading specialists across six continents, for expert guidance and a fresh understanding of the subject. - Develop a thorough, clinically relevant understanding of all aspects of adult and pediatric glaucoma in Volume One, and the latest diagnostic imaging techniques including ultrasound biomicroscopy and optical coherence tomography. - Stay at the forefront of your field with 10 brand new chapters on trending topics including: new surgical approaches such as trabeculotomy and canaloplasty; glaucoma implications in cataract and ocular surface disease; and, updates in the cost-effectiveness of medical management. - Avoid pitfalls and achieve the best outcomes thanks to more than 40 brand new spotlight commentaries from key leaders providing added insight, tips and pearls of wisdom across varying hot topics and advances in the field. - Refine and improve your surgical skills by watching over 50 video clips depicting the latest techniques and procedures including: new trabeculectomy methods, needling, implants, valve complications, and more. - Prevent and plan for complications in advance by examining over 1,600 illustrations, photos and graphics (1,250 in color) capturing essential diagnostics techniques, imaging methods and surgical approaches. - Grasp each procedure and review key steps quickly with chapter summary boxes that provide at-a-glance quick comprehension of the key take away points. - Broaden your surgical repertoire with the latest surgical techniques - such as trabeculectomy, gonio-surgery, combined surgeries, and implant procedures - in Volume Two. - Glean all essential, up-to-date, need-to-know information about stem cell research, gene transfer, and implants. - Find answers fast thanks to a well-organized, user-friendly full-color layout. - eBook version included with purchase. *Updates on Myopia* JP Medical Ltd

Glaucoma is the leading cause of irreversible blindness. Glaucoma is challenging to treat and poses a significant socioeconomic burden on society. New techniques and methods for both diagnosis and treatment are sorely needed. Glaucoma - Recent Advances and New Perspectives provides a comprehensive overview of glaucoma with chapters on topics ranging from diagnostic techniques to genetic testing and biomarkers.

*Big data and artificial intelligence in ophthalmology* Frontiers Media SA

Just 10 years ago, ophthalmic research was almost unheard of in Singapore. With little money and no infrastructure, ophthalmologists and scientists expressed scant interest in research. Today, however, ophthalmic research in Singapore is at a high international level, as exemplified by the activities of the Singapore Eye Research Institute (SERI), which is capable of competing with and challenging the world's leading eye research centers. Indeed, the world-class research carried out at SERI has helped to extend Singapore's international reach as the country moves towards its goal of becoming a global city and a leading nation influencing developments across Asia and the world. This book summarizes a decade of hard work, dedication, and commitment by a handful of doctors and researchers in their efforts to establish SERI and ensure its success. In particular, the remarkable contributions of two of Singapore's ophthalmic pioneers, the late Associate Professor Chew Sek Jin and current Professor Donald Tan, are acknowledged. The book will inspire leaders of developing nations in visualizing how research can develop rapidly in their own country, and how support and facilities may materialize if they can gather a few dedicated, intelligent researchers.

Best Sellers - Books :

- [Leigh Howard And The Ghosts Of Simmons-pierce Manor By Shawn M. Warner](#)
- [Beyond The Story: 10-year Record Of Bts By Bts](#)
- [The Courage To Be Free: Florida's Blueprint For America's Revival By Ron Desantis](#)

- [The Five-star Weekend](#)
- [Hunting Adeline \(cat And Mouse Duet\)](#)
- [Stone Maidens](#)
- [Dog Man: Twenty Thousand Fleas Under The Sea: A Graphic Novel \(dog Man #11\): From The Creator Of Captain Underpants](#)
- [Things We Hide From The Light \(knockemout Series, 2\)](#)
- [The 5 Love Languages: The Secret To Love That Lasts By Gary Chapman](#)
- [American Prometheus: The Triumph And Tragedy Of J. Robert Oppenheimer](#)