

Chapter 1 : Vaughan & Asbury's General Ophthalmology, 18th Edition; 18 Edition; ISBN:

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Of all the organs of the body, the eye is most accessible to direct examination. Visual function can be quantified by simple subjective testing. The external anatomy of the eye is visible to inspection with the unaided eye and with fairly simple instruments. Even the interior of the eye is visible through the clear cornea. The eye is the only part of the body where blood vessels and central nervous system tissue retina and optic nerve can be viewed directly. Important systemic effects of infectious, autoimmune, neoplastic, and vascular diseases may be visible from the internal eye examination. The purpose of sections I and II of this chapter is to provide an overview of the ocular history and basic complete eye examination as performed by an ophthalmologist. In section III, more specialized examination techniques will be presented. The location, the severity, and the circumstances surrounding onset are important as well as any associated symptoms. Current eye medications being used and all other current and past ocular disorders are recorded, and a review of other pertinent ocular symptoms is performed. Vascular disorders commonly associated with ocular manifestations—such as diabetes and hypertension—should be asked about specifically. This provides a general indication of health status and may include medications that affect ocular health, such as corticosteroids. Finally, any drug allergies should be recorded. The family history is pertinent for ocular disorders such as strabismus, amblyopia, glaucoma, cataracts, and retinal problems, such as retinal detachment or macular degeneration. Medical diseases such as diabetes may be relevant as well. Ocular symptoms can be divided into three basic categories: Symptoms and complaints should always be fully characterized. Was the onset gradual, rapid, or asymptomatic? For example, was blurred vision in one eye not discovered until the opposite eye was inadvertently covered? Was the duration brief, or has the symptom continued until the present visit? If the symptom was intermittent, what was the frequency? Is the location focal or diffuse, and is involvement unilateral or bilateral? Finally, is the degree characterized by the patient as mild, moderate, or severe? One should also determine what therapeutic measures have been tried and to what extent they have helped. Has the patient identified circumstances that trigger or worsen the symptom? Have similar instances occurred before, and are there any other associated symptoms? The following is a brief overview of ocular complaints. Representative examples of some causes are given here and discussed more fully elsewhere in this book. One must therefore consider refractive focusing error, lid ptosis, clouding or interference from the ocular media eg, corneal edema, cataract, or hemorrhage in the vitreous or aqueous space, and malfunction of the retina macula, optic nerve, or intracranial visual pathway. A distinction should be made between decreased central acuity and peripheral vision. The latter may be focal, such as a scotoma, or more expansive as with hemianopia. Abnormalities of the intracranial visual pathway usually disturb the visual field more than central visual acuity. Transient loss of central or peripheral vision is frequently due to circulatory changes anywhere along the neurologic visual pathway from the retina to the occipital cortex. Examples would be amaurosis fugax or migrainous scotoma. The degree of visual impairment may vary under different circumstances. For example, uncorrected nearsighted refractive error may seem worse in dark environments. This is because pupillary dilation allows more misfocused rays to reach the retina, increasing the blur. A central focal cataract may seem worse in sunlight. In this case, pupillary constriction prevents more rays from entering and passing around the lens opacity. Blurred vision from corneal edema may improve as the day progresses owing to corneal dehydration from surface evaporation. Visual Aberrations Glare or haloes may result from uncorrected refractive error, scratches on spectacle lenses, excessive pupillary dilation, and hazy ocular media, such as corneal edema or cataract. Visual distortion apart from blurring may be manifested as an irregular pattern of dimness, wavy or jagged lines, and image magnification or minification. Causes may include the aura of migraine, optical distortion from strong corrective lenses, or lesions involving the macula and optic nerve. Flashing or flickering lights may indicate retinal traction if instantaneous or migrainous scintillations that last for several seconds or minutes. Floating spots may represent normal vitreous strands due to vitreous

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Chapter 2 : Ophthalmology - Wikipedia

3 David Chang CV present Advisor, Pacific Rim Center for Vision, That Man May See, Inc.

Visual function can be quantified by simple subjective testing. The external anatomy of the eye is visible to inspection with the unaided eye and with fairly simple instruments. With more complicated instruments, the interior of the eye is visible through the clear cornea. The eye is the only part of the body where blood vessels and central nervous system tissue retina and optic nerve can be viewed directly. Important systemic effects of infectious, autoimmune, neoplastic, and vascular diseases may be identified from ocular examination. In section III, more specialized examination techniques will be presented. The location, severity, and circumstances surrounding its onset are important, as is identifying any other ocular and nonocular symptoms that may require specific enquiry. Current eye medications and current and past ocular disorders are determined. Finally, any drug allergies should be recorded. Medical diseases such as diabetes may be relevant as well. Ocular symptoms can be divided into three basic categories: Was the onset gradual, rapid, or asymptomatic? For example, was blurred vision in one eye not discovered until the opposite eye was inadvertently covered? Was the duration brief, or has the symptom continued until the present visit? If the symptom was intermittent, what was the frequency? Is the location focal or diffuse, and is involvement unilateral or bilateral? Finally, does the patient characterize the degree as mild, moderate, or severe? Has the patient identified circumstances that trigger or worsen the symptom? Have similar instances occurred before, and are there any other associated symptoms? Representative examples of some causes are given here and discussed more fully elsewhere in this book.

Dr. David F. Chang wrote the book about cataract surgery. View a list of textbooks and publications that he has authored over the years.

Clinical Professor, Department of Associate Clinical Professor, Dept. General Ophthalmology, 12th Edition, edited by D. General Ophthalmology, 13th Edition, edited by D. Appleton and Lange, Macho, Andrews and McMeel, General Ophthalmology, 14th Edition, edited by D. General Ophthalmology, 15th Edition, edited by D. In Complications in Phacoemulsification, edited by W. A Case Study Approach edited by K. A Quest for the Best, edited by S. Jaypee, Chang DF. Advances in Ophthalmology 2, edited by Ashok Garg, et al. Agarwal, Slack Chang DF, editor. Chang, Hiroshi Tsuneoka, Jerome Bovet. Innovative Techniques in Ophthalmology, edited by Ashok Garg, et. Phaco Nightmares, edited by Amar Agarwal, Slack Jaypee, Chang DF: Surgical Techniques in Ophthalmology: J Pediatr Ophthalmol Strabismus 17 2: Masket J Cataract Refract Surg Comprehensive Ophthalmology Update 1 1: Masket J Cataract Refract Surg 27 2: Br J Ophthalmol 85 7: Masket J Cataract Refract Surg 28 4: Masket J Cataract Refract Surg ; 29 4: Editorial Comprehensive Ophthalmology Update ; 4 4: Techniques in Ophthalmology ; 1 4 Phaco Chop Techniques " Comparing Horizontal vs. Highlights of Ophthalmology ; 4: J Cataract Refract Surg ; 30 4: Single versus three piece acrylic IOLs. Br J Ophthalmol ; 88 6: Masket J Cataract Refract Surg ; 30 Ophtec iris reconstruction lens United States clinical trial phase I. Masket J Cataract Refract Surg ; 31 2: Intraoperative floppy iris syndrome associated with tamsulosin Flomax. J Cataract Refract Surg ; 31 4: Tackling the Greatest Challenge in Cataract Surgery. Br J Ophthalmol ; 89 9 ; Masket J Cataract Refract Surg ; 32 What is the association between clear corneal cataract incisions and postoperative endophthalmitis? J Cataract Refract Surg ; Am J Ophthalmol ; A prospective multicenter evaluation of cataract surgery in patients taking tamsulosin Flomax. The Implantable Miniature Telescope. Arch Ophthalmol ; Prophylaxis of postoperative endophthalmitis following cataract surgery: J Cataract Refract Surg ; US Ophthalmic Review ; Reducing the risk of endophthalmitis after cataract surgery letter. J Cataract Refract Surg ;33 Comparative effect of alfuzosin and tamsulosin on the contractile response of isolated rabbit prostatic and iris dilator smooth muscles. Possible model for intraoperative floppy iris syndrome IFIS. ASCRS survey of endophthalmitis prophylaxis. Results in 30 consecutive cases. Clinical experience with intraoperative floppy iris syndrome. Comparative rotational stability of single-piece open-loop acrylic and plate-haptic silicone toric intraocular lenses. Findl J Cataract Refract Surg ; The incidence of post-cataract endophthalmitis at an Aravind Eye Hospital: Outcomes from more than 42, consecutive cases using standardized sterilization and prophylaxis protocols. Repositioning technique and rate for Acrysof toric IOLs. Clinical outcomes and functional visual performance: A new and sustainable model for eliminating cataract blindness in China. Recommendations for backup IOL implantation following posterior capsule rupture. Implantable telescope for end-stage age-related macular degeneration: Long-term visual acuity and safety outcomes. Spotlight on Cataract Surgery: Where are we now? Where are we going? New Pearls from Glaucoma and Cataract Experts. Clinical Decision-making with Cataract Complications. You Make the Call.

Chapter 4 : Dr. David Chang, MD “ Los Altos, CA | Ophthalmology

Chapter 2: Ophthalmologic Examination Author: David F. Chang Ophthalmologic Examination. Of all the organs of the body, the eye is most accessible to direct examination.

Chang Ophthalmologic Examination Of all the organs of the body, the eye is most accessible to direct examination. Visual function can be quantified by simple subjective testing. The external anatomy of the eye is visible to inspection with the unaided eye and with fairly simple instruments. Even the interior of the eye is visible through the clear cornea. The eye is the only part of the body where blood vessels and central nervous system tissue retina and optic nerve can be viewed directly. Important systemic effects of infectious, autoimmune, neoplastic, and vascular diseases may be visible from the internal eye examination. The purpose of sections I and II of this chapter is to provide an overview of the ocular history and basic complete eye examination as performed by an ophthalmologist. In section III, more specialized examination techniques will be presented. The location, the severity, and the circumstances surrounding onset are important as well as any associated symptoms. Current eye medications being used and all other current and past ocular disorders are recorded, and a review of other pertinent ocular symptoms is performed. Vascular disorders commonly associated with ocular manifestations-such as diabetes and hypertension-should be asked about specifically. This provides a general indication of health status and may include medications that affect ocular health, such as corticosteroids. Finally, any drug allergies should be recorded. The family history is pertinent for ocular disorders such as strabismus, amblyopia, glaucoma, cataracts, and retinal problems, such as retinal detachment or macular degeneration. Medical diseases such as diabetes may be relevant as well. Ocular symptoms can be divided into three basic categories: Symptoms and complaints should always be fully characterized. Was the onset gradual, rapid, or asymptomatic? For example, was blurred vision in one eye not discovered until the opposite eye was inadvertently covered? Was the duration brief, or has the symptom continued until the present visit? If the symptom was intermittent, what was the frequency? Is the location focal or diffuse, and is involvement unilateral or bilateral? Finally, is the degree characterized by the patient as mild, moderate, or severe? One should also determine what therapeutic measures have been tried and to what extent they have helped. Has the patient identified circumstances that trigger or worsen the symptom? Have similar instances occurred before, and are there any other associated symptoms? The following is a brief overview of ocular complaints. Representative examples of some causes are given here and discussed more fully elsewhere in this book. One must therefore consider refractive focusing error, lid ptosis, clouding or interference from the ocular media eg, corneal edema, cataract, or hemorrhage in the vitreous or aqueous space , and malfunction of the retina macula , optic nerve, or intracranial visual pathway. A distinction should be made between decreased central acuity and peripheral vision. The latter may be focal, such as a scotoma, or more expansive as with hemianopia. Abnormalities of the intracranial visual pathway usually disturb the visual field more than central visual acuity. Transient loss of central or peripheral vision is frequently due to circulatory changes anywhere along the neurologic visual pathway from the retina to the occipital cortex. Examples would be amaurosis fugax or migrainous scotoma. The degree of visual impairment may vary under different circumstances. For example, uncorrected nearsighted refractive error may seem worse in dark environments. This is because pupillary dilation allows more misfocused rays to reach the retina, increasing the blur. A central focal cataract may seem worse in sunlight. In this case, pupillary constriction prevents more rays from entering and passing around the lens opacity. Blurred vision from corneal edema may improve as the day progresses owing to corneal dehydration from surface evaporation. Visual Aberrations Glare or haloes may result from uncorrected refractive error, scratches on spectacle lenses, excessive pupillary dilation, and hazy ocular media, such as corneal edema or cataract. Visual distortion apart from blurring may be manifested as an irregular pattern of dimness, wavy or jagged lines, and image magnification or minification. Causes may include the aura of migraine, optical distortion from strong corrective lenses, or lesions involving the macula and optic nerve. Flashing or flickering lights may indicate retinal traction if instantaneous or migrainous scintillations that last for several seconds or minutes. Floating spots may represent normal vitreous strands due

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Anatomically, ocular problems can be subdivided into three areas: VISION Just as assessment of vital signs is a part of every physical examination, any ocular examination must include assessment of vision, regardless of whether vision is mentioned as part of the chief complaint. Good vision results from a combination of an intact neurologic visual pathway, a structurally healthy eye, and proper focus of the eye. An analogy might be made to a video camera, requiring a functioning cable connection to the monitor, a mechanically intact camera body, and a proper focus setting. In general, measurement of visual acuity is subjective rather than objective, since it requires responses on the part of the patient. Refraction The unaided distant focal point of the eye varies among normal individuals depending on the shape of the globe and the cornea Figure An emmetropic eye is naturally in optimal focus for distance vision. An ametropic eye ie, one with myopia, hyperopia, or astigmatism needs corrective lenses to be in proper focus for distance. This optical requirement is called refractive error. Refraction is the procedure by which this natural optical error is characterized and quantified Figure see Chapter Common imperfections of the optical system of the eye refractive errors. Such an eye is called emmetropic. In hyperopia "farsightedness" , the light rays from a distant target instead come to a focus behind the retina, causing the retinal image to be blurred. In myopia

"nearsightedness" , the light rays come to a focus in front of the retina, as though the eyeball is too long. Placing a biconcave - lens in front of the eye diverges the incoming light rays; this effectively weakens the optical power of the eye enough so that the focus is shifted backward and onto the retina. Modified and reproduced, with permission, from Ganong WF: Review of Medical Physiology, 15th ed. Refraction being performed using a "phoropter. Photo by M Narahara.

Chapter 2: Ophthalmologic Examination Author: David F. Chang Of all the organs of the body, the eye is most accessible to direct examination. Visual function can be quantified by simple subjective testing.

The discipline applies to all animal eyes, whether human or not, since the practice and procedures are quite similar with respect to disease processes, while differences in anatomy or disease prevalence, whether subtle or substantial, may differentiate the two. It was believed, by Alcamaeon 5th century BC and others, that this fluid was the medium of vision and flowed from the eye to the brain by a tube. Aristotle advanced such ideas with empiricism. He dissected the eyes of animals, and discovering three layers not two, found that the fluid was of a constant consistency with the lens forming or congealing after death, and the surrounding layers were seen to be juxtaposed. He and his contemporaries further put forth the existence of three tubes leading from the eye, not one. One tube from each eye met within the skull. The Greek physician Rufus of Ephesus 1st century AD recognised a more modern eye, with conjunctiva, extending as a fourth epithelial layer over the eye. Celsus the Greek philosopher of the 2nd century AD gave a detailed description of cataract surgery by the couching method. The Greek physician Galen 2nd century AD remedied some mistakes including the curvature of the cornea and lens, the nature of the optic nerve, and the existence of a posterior chamber. Though this model was a roughly correct modern model of the eye, it contained errors. Still, it was not advanced upon again until after Vesalius. A ciliary body was then discovered and the sclera, retina, choroid, and cornea were seen to meet at the same point. The two chambers were seen to hold the same fluid, as well as the lens being attached to the choroid. Galen continued the notion of a central canal, but he dissected the optic nerve and saw that it was solid. He mistakenly counted seven optical muscles, one too many. He also knew of the tear ducts. The Indian surgeon Sushruta wrote Sushruta Samhita in Sanskrit in about 6th century CE [13] which describes 76 ocular diseases of these 51 surgical as well as several ophthalmological surgical instruments and techniques. Ophthalmology in medieval Islam Anatomy of the Eye, CE Medieval Islamic Arabic and Persian scientists unlike their classical predecessors considered it normal to combine theory and practice, including the crafting of precise instruments, and therefore found it natural to combine the study of the eye with the practical application of that knowledge. This allowed for detailed study of the eye and an advanced model. Some mistakes persisted, such as: Unaware of their functions, Leeuwenhoek noted the existence of photoreceptors, [23] however, they were not properly discovered until Gottfried Reinhold Treviranus in His skill at removing cataract legitimized the field. Clinical developments at Moorfields and the founding of the Institute of Ophthalmology now part of the University College London by Sir Stewart Duke-Elder established the site as the largest eye hospital in the world and a nexus for ophthalmic research. Hermann von Helmholtz was a polymath who made contributions to many fields of science and invented the ophthalmoscope in They both made theoretical calculations on image formation in optical systems and had also studied the optics of the eye. In Berlin, Albrecht von Graefe introduced iridectomy as a treatment for glaucoma and improved cataract surgery, he is also considered the founding father of the German Ophthalmological Society. Central Europe[edit] Numerous ophthalmologists fled Germany after as the Nazis began to persecute those of Jewish descent. A representative leader was Joseph Igersheimer , best known for his discoveries with arsphenamine for the treatment of syphilis. He fled to Turkey in As one of eight emigrant directors in the Faculty of Medicine at the University of Istanbul, he built a modern clinic and trained students. In, he went to the United States, becoming a professor at Tufts University. In, he conducted the first experiments on light coagulation. In, he performed the first successful treatment of a retinal detachment with a light beam light coagulation by with a self-constructed device on the roof of the ophthalmic clinic at the University of Hamburg-Eppendorf. The Polish Ophthalmological Society was founded in A representative leader was Adam Zamenhof , who introduced certain diagnostic, surgical, and nonsurgical eye-care procedures and was shot by the Nazis in Ophthalmology training equips eye specialists to provide the full spectrum of eye care, including the prescription of glasses and contact lenses, medical treatment, and complex microsurgery. In many countries, ophthalmologists also undergo additional specialized training in

one of the many subspecialties. Ophthalmology was the first branch of medicine to offer board certification, now a standard practice among all specialties. Australia and New Zealand[edit] See also: It is a very competitive speciality to enter training and has a closely monitored and structured training system in place over the five years of postgraduate training. Then they have to obtain a postgraduate degree or diploma in speciality ophthalmology. Canada[edit] In Canada, an ophthalmology residency after medical school is undertaken. About 35 vacancies open per year for ophthalmology residency training in all of Canada. These numbers fluctuate per year, ranging from 30 to 37 spots. Of these, up to ten spots are at French-speaking universities in Quebec. At the end of the five years, the graduating ophthalmologist must pass the oral and written portions of the Royal College exam in either English or French. Finland[edit] In Finland, physicians willing to become ophthalmologists must undergo a five-year specialization which includes practical training and theoretical studies. The concurrent training and work experience is in the form of a junior residency at a medical college, eye hospital, or institution under the supervision of experienced faculty. Further work experience in form of fellowship, registrar, or senior resident refines the skills of these eye surgeons. All India Ophthalmologist Society and various state-level ophthalmologist societies hold regular conferences and actively promote continuing medical education. Nepal[edit] In Nepal, to become an ophthalmologist, three years postgraduate study is required after completing MBBS degree. The postgraduate degree in ophthalmology is called MD in Ophthalmology. Few Nepalese citizen also study this subject in Bangladesh, China, India, Pakistan and other countries. Nepal Ophthalmic Society holds regular conferences and actively promote continuing medical education. Total postgraduate training involves an intern year, a minimum of three years of basic surgical training and a further 4. A minimum of 8. The tough examination is assessed by both highly qualified Pakistani and eminent international ophthalmic consultants. As a prerequisite to the final examinations, an intermediate module, an optics and refraction module, and a dissertation written on a research project carried out under supervision is also assessed. In addition to programs for doctors, various diplomas and degrees for allied eyecare personnel are also being offered to produce competent optometrists, orthoptists, ophthalmic nurses, ophthalmic technologists, and ophthalmic technicians in this field. Philippines[edit] Ophthalmology is a considered a medical specialty that uses medicine and surgery to treat diseases of the eye. To become a general ophthalmologist in the Philippines, a candidate must have completed a Doctor of Medicine degree MD or its equivalent e. MBBS, have completed an internship in Medicine, have passed the physician licensure exam, and completed residency training at a hospital accredited by the Philippine Board of Ophthalmology accrediting arm of PAO. Graduates of residency programs can receive further training in ophthalmology subspecialties, such as neuro-ophthalmology, retina, etc. United Kingdom[edit] In the United Kingdom, three colleges grant postgraduate degrees in ophthalmology. Postgraduate work as a specialist registrar and one of these degrees is required for specialization in eye diseases. Such clinical work is within the NHS, with supplementary private work for some consultants. Medical education in the United States In the United States, ophthalmologists must complete four years of undergraduate studies, four years of medical school, one year medical or general surgical residency, three years of ophthalmology residency and optional one to two years of speciality training. Ophthalmologists are Doctors of Medicine that specialize in the eye and related structures. They perform medical and surgical eye care and can also write prescriptions for corrective lenses glasses and contacts. They often deal with advanced forms of eye disease in patients with significant systemic illness. Physicians must complete the requirements of continuing medical education to maintain licensure and for recertification. Professional bodies like the American Academy of Ophthalmology and American Society of Cataract and Refractive Surgery organize conferences, help physician members through continuing medical education programs for maintaining board certification, and provide political advocacy and peer support.

Chapter 6 : David F Chang, MD Altos Oaks Dr Ste 1 Los Altos, CA Doctors - MapQuest

Ophthalmologist David F. Chang, M.D. David F. Chang, M.D. is an internationally recognized cataract sub-specialist. He graduated Summa Cum Laude from Harvard College and earned his Medical Degree from Harvard Medical School.

URL of this page: How the Test is Performed First, you will be asked if you are having any eye or vision problems. You will be asked to describe these problems, how long you have had them, and any factors that have made them better or worse. Your history of glasses or contact lenses will also be reviewed. Next, the doctor will check your vision visual acuity using a Snellen chart. You will be asked to read random letters that become smaller line by line as your eyes move down the chart. Some Snellen charts are actually video monitors showing letters or images. To see if you need glasses, the doctor will place several lenses in front of your eye, one at a time, and ask you when the letters on the Snellen chart become easier to see. This is called a refraction. Other parts of the exam include tests to: See if you have proper three-dimensional 3D vision stereopsis. Check your side peripheral vision. Check the eye muscles by asking you to look in different directions at a penlight or other small object. Examine the pupils with a penlight to see if they respond constrict properly to light. This allows the doctor to use a device called an ophthalmoscope to view the structures at the back of the eye. This area is called the fundus. It includes the retina and nearby blood vessels and optic nerve. Another magnifying device, called a slit lamp , is used to: See the front parts of the eye eyelids, cornea, conjunctiva, sclera, and iris Check for increased pressure in the eye glaucoma using a method called tonometry Color blindness is tested using cards with colored dots that form numbers. How to Prepare for the Test Make an appointment with an eye doctor some take walk-in patients. Avoid eye strain on the day of the test. If you wear glasses or contacts, bring them with you. You may need someone to drive you home if the doctor uses eye drops to dilate your pupils. How the Test will Feel The tests cause no pain or discomfort. Screening should begin sooner if any eye problems are suspected. Between ages 20 and A complete eye exam should be done every 5 to 10 years Adults who wear contact lenses need yearly eye exams Certain eye symptoms or disorders may require more frequent exams Adults over age 40 who have no risk factors or ongoing eye conditions should be screened: Every 2 to 4 years for adults ages 40 to 54 Every 1 to 3 years for adults ages 55 to 64 Every 1 to 2 years for adults age 65 and older Depending on your risk factors for eye diseases and your current symptoms or illnesses, your eye doctor may recommend that you have exams more often. Eye and medical problems that can be found by a routine eye test include: Clouding of the lens of the eye cataracts Diabetes.

Chapter 7 : Standard eye exam: MedlinePlus Medical Encyclopedia

Jaypee, Chang DF, co-editor, Mastering the Art of Bimanual Microincision Phaco, edited by Ashok Garg, I Howard Fine, David F. Chang, Keiki R. Mehta, Jerome Bovet, Felipe Vejarano, Suresh Pandey, Cyres Mehta.

Chapter 8 : International Council of Ophthalmology : Resources

30 reviews of David F Chang, MD "Highly recommend Dr Chang. He solved one of the most complicated cases by making my eyes get back to almost 20/20 vision after cataract surgery.

Chapter 9 : - NLM Catalog Result

David F Chang, MD, is a Clinical Professor at the University of California, San Francisco (UCSF) (where he completed his ophthalmology residency). Having chaired the American Society of Cataract and Refractive Surgery (ASCRS) Cataract Clinical Committee, Dr Chang joined the ASCRS Executive Committee in and served as the President between and