

ophthalmologist

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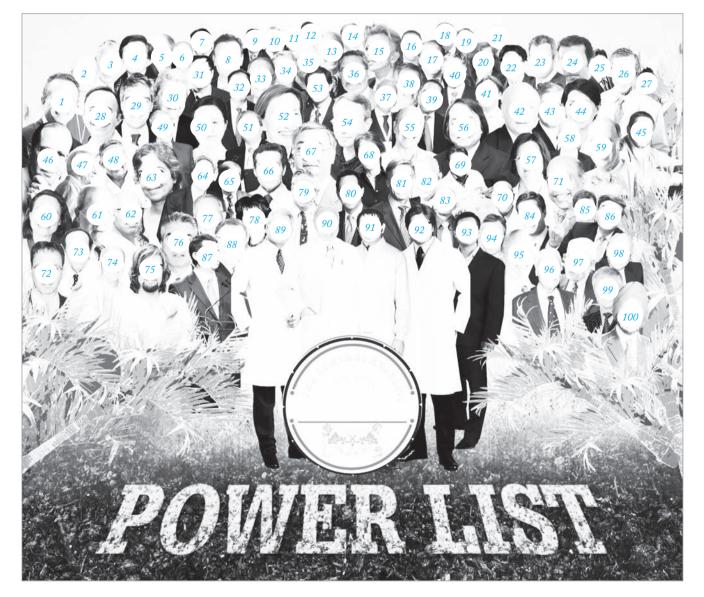
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The Power of the List

The Ophthalmologist Power List 2014 is this publication's catalog of the 100 most influential people in ophthalmology today.

Editorial





hy generate a Top 100? Of the many reasons, the chief one is to catalog and celebrate progress. I believe that most ophthalmologists would agree that these are among the best of times for the profession; an age of wisdom rather than of foolishness. Your accomplishments include: the development of new surgical techniques, drugs and ophthalmic devices; breakthroughs in the understanding of biology, pathology and epidemiology; improvements (arguably) in health care administration and delivery, and the growth of an industry and infrastructure to meet the complex

medical needs of patients. This progress is driven by people, and those driving this progress deserve recognition. One great way of doing this is to highlight the achievements of ophthalmology's most influential contributors. And that's what the Power List is: a celebration, acknowledgement and offer of gratitude to some of the major contributors to ophthalmology today.

I don't claim that this is definitively the top 100 people in ophthalmology. It's a subjective list, initially compiled from our readers' contributions. If it has shocking omissions or inclusions – do let us know and help us by submitting nominations next year.

The list was developed in three stages. In stage 1, we invited readers to nominate people that they thought deserved recognition – only those nominated were considered. In stage 2, a jury of five noted ophthalmologists (who prefer to remain anonymous and were modest enough not to vote for themselves) selected their top 100 from the slate of nominees: the results were consolidated into a list of 100 names. In stage 3, the jury ranked the list from 1 through 100; the average scores provided the final Power List.

To resume the Dickens theme, the list does contain both the season of light and the season of darkness.

One dazzling feature of the list is its geographical scope. Within the Top 20, ten countries are represented, and within the Top 100 as a whole, there are representatives of 21 countries. Ophthalmologists from Asia, Africa, North America, South America, Europe, and Australia are included in the list. Who would have imagined that a list of 100 influential ophthalmologists would have been so broad? (For the record, the five judges came from five countries and three continents).

A darker aspect is the gender ratio: the entire list has just 13 women, and all of the Top 20 are men. That's a depressing statistic.

To those who participated, our thanks. To those who feel aggrieved, let us know and aim for satisfaction in 2015: the list will be an annual event. And to those named in The Ophthalmologist Power List 2014, our congratulations. More power to you!

Richard Gallagher Editorial Director

Renaulom

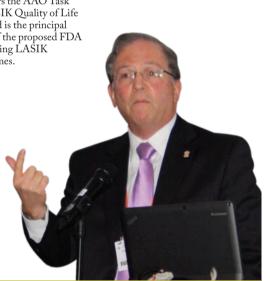
be Ophthalmologist Power List 2014

Who are the 100 most influential people in ophthalmology? That's the question we posed to ourselves – and then to you – over two months ago, ahead of open nominations and a painstaking judging process. Here, without further ado, we celebrate the answer.

100–21 (in alphabetical order)

Richard Abbott

A former AAO President and recipient of the AAO Lifetime Achievement Award in 2006, Richard Abbott specializes in corneal and external diseases. He currently chairs the AAO Task Force for LASIK Quality of Life Outcomes and is the principal investigator of the proposed FDA study researching LASIK patient outcomes.



Rand Allingham

Rand Allingham leads a large NIH funded project that has the goal of identifying specific gene(s) responsible for glaucoma. He was previously responsible for an investigation into cerebrospinal fluid pressure as a glaucoma risk factor and he has an ongoing interest in clinical management of the disease.



David Abramson

David Abramson's treatments for retinoblastoma have been adopted worldwide. These include the delivery of chemotherapeutics around the eye to prevent systemic toxicity of intravenous medication and the use of high concentration – but low dose – chemotherapy delivered directly into the eye via a catheter placed in the groin, administered on an outpatient basis.

Eduardo Alfonso

Eduardo Alfonso is an internationally known expert on ocular infectious diseases. In 2006, he documented an increase in the incidence of an aggressive form of fungal corneal infection that was related to soft contact lens use. His findings drew considerable media attention throughout the world and significantly reduced the number of new infections.

Tin Aung

A clinician-scientist, Tin Aung leads a glaucoma research group in addition to his managerial responsibilities. His research interests include angle closure glaucoma and the molecular genetics of eye diseases; he is also active in clinical research, having conducted studies on therapeutics, imaging, screening, clinical course and surgical outcomes of glaucoma.

Anthony Adamis

Anthony Adamis has had two careers in ophthalmology: as a clinician and as an industry executive. One of the discoverers of the role that VEGF plays in retinal angiogenesis and leakage, Adamis also participated in the development and launch of pegaptanib, the first anti-VEGF agent for use in ophthalmology.

Jorge Alió

A leading authority in the field of refractive surgery, Jorge Alió is at the forefront of much of research in the field. He is the medical director of Vissum, Europe's largest eye institute and research facility, an ESCRS board member and founder of an eponymous blindness prevention foundation.



Bill Aylward

Bill Aylward is a senior vitreoretnial surgeon who chairs the Informatics and Audit Committee of the UK's Royal College of Ophthalmologists. He is vice president of the Club Jules Gonin and was president of ESCRS from 2009-2011. Aylward leads the development of the opensource, ophthalmology-tailored OpenEyes electronic patient record management system.

Susanne Binder

Susanne Binder, a retina expert whose principal interests are AMD and retinal surgery, has published over 200 original articles and is the editor of two books. She is considered to be one of the great translators of clinical research into clinical practice, and her work in stem cells has recently drawn praise.

Claude Burgoyne

An optic nerve head imaging legend, Claude Burgoyne currently investigates the effects of aging and experimental glaucoma on the load-bearing connective tissues of the primate optic nerve head within SD-OCT 3D histormophometric reconstructions. He also aims to model how an individual human optic nerve head will respond to a given level of IOP.

Jean Bennett

Jean Bennett's laboratory focuses on the molecular genetics of inherited retinal degeneration, such as retinitis pigmentosa and AMD, with the objective of developing therapeutic interventions. She used viral vectors to deliver transgenes to specific retinal cells, providing proof-ofprinciple for ocular gene therapy. Her colleague and husband Albert Maguire is also on the list.



Neil Bressler

Neil Bressler's main research interests are collaborative efforts in clinical trials of common retinal diseases, including age-related macular degeneration and diabetic retinopathy. He is currently chair of Submacular Surgery Trials, DRCR.net, the Data and Safety Monitoring Committee for the NEI's intramural clinical trials and the FDA's Ophthalmic Devices Panel.

Peter Barry

Peter Barry has been an ESCRS board member for more than 25 years, holding the position of treasurer, and most recently, President, Barry led the ESCRS Endophthalmitis Study, which recommended the adoption of intracameral cefuroxime following cataract surgery with IOL implantation – something that has saved thousands of eyes from potential blindness.

Roberto Bellucci

Roberto Bellucci is the current ESCRS President, and has a wealth of experience in cataract, implant and refractive surgeries, having performed more than 20,000 procedures. Bellucci has previously developed surgical instruments to help with IOL implantation and performed important studies of pre-, peri- and post-procedural antibiotics and topical anesthetics.



Emilio Campos

Emilio Campos' research interests include strabismus and amblyopia. He is a co-author of the definitive textbook on strabismus, "Binocular Vision and Ocular Motility: Theory and Management of Strabismus." Campos is former president of the Italian Ophthalmological Society, and is currently a member of the board of directors of the International Council of Ophthalmology.

Usha Chakravarthy

A retinal surgeon by training, Usha Chakravarthy has been involved in many of the major international clinical trials, including the IVAN, INTREPID, EUREYE, INDEYE, and V.I.S.I.O.N. studies, as well as co-authoring Cochrane Review articles and guidelines for the Royal College of Ophthalmologists' on the treatment of AMD.



Stanley Chang

Stanley Chang is a specialist in vitreoretinal disorders and surgery, whose techniques are used widely. He established perfluoropropane gas to prevent scar tissue proliferation on the retina and applied perfluorocarbon for flattening retinal detachment, along with related techniques for vitreoretinal surgery. With Avi Grinblat, he developed a panoramic viewing system for retinal surgery.



Hannah Faal

An eye-care program consultant to SightSavers International, Hannah Faal is former president of the International Agency of Prevention of Blindness and chaired the IAPB/ WHO Task Force for VISION 2020. She initiated the national eye care program in The Gambia and has helped to develop eye care policies throughout West Africa.

Allen Foster

Allen Foster's interests encompass the control of blinding diseases; cost-effectiveness and quality of life studies; the implementation of VISION 2020, and health service research for children and adults with disabilities. He is co-director of the International Centre for Evidence in Disability and codirector of the International Centre for Eye Health.

Emily Chew

Emily Chew is chair of the AREDS2 study and participates in the Actions to Control Cardiovascular Risk in Diabetes trial. She is a medical retinal specialist with extensive experience in the design and implementation of clinical trials across all phases. Her principal research interests are diabetic- and age-related eve diseases.



Oliver Findl

With research interests in the field of optical biometry, PCO and postsurgical visual quality assessment, Oliver Findl is a prolific author, having published over 200 peerreviewed articles in international journals. He is an editorial board member of the Journal of Cataract and Refractive Surgery and is the Secretary of the ESCRS.

Napoleone Ferrara

Napoleone Ferrara was involved in the isolation and cloning of VEGF and demonstrated its role in angiogenesis. His work helped lead to the development of bevacizumab, and the clinical development of ranibizumab. Today, his lab investigates non-VEGF-related angiogenesis mechanisms, which may lead to therapies effective in anti-VEGF non-responders.

Paul Foster

Paul Foster published the first high-quality reports of glaucoma prevalence and risk factors in East Asia, being the first to identify the large burden of angle-closure glaucoma cases in China. He also pioneered population screening and preventive laser surgery for angle-closure glaucoma, performing the first randomized trial of the technique in rural Asia.



Feature **2**

James Fujimoto

James Fujimoto's primary research focus is biomedical imaging with OCT and advanced laser technologies. His research team was responsible for the invention and development of OCT, and today they push the boundaries of highspeed and high-resolution imaging, functional Doppler flow and angiography as well as polarization sensitive methods.

Greg Hageman

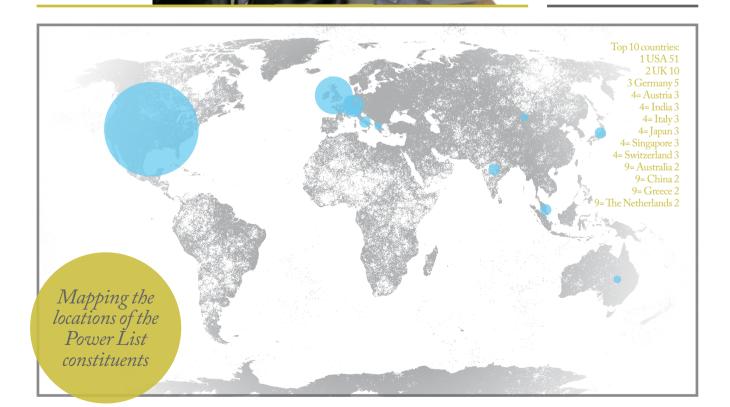
Over the past quarter-century, Hageman has examined the genetics and pathways involved in AMD, making major contributions to the understanding of the disease. He has briefed the US Congress on the subject three times, started two biotechnology companies and served on numerous national and international advisory boards, service panels and review committees.

Ted Garway-Heath

Research by Ted Garway-Heath has provided many new tools. These include the Moorfields Motion Displacement Test; The Moorfields Regression Analysis, a software program for imaging performance in tomography; and the Garway-Heath Map, used in research to establish the correlation between visual field and optic nerve hypoplasia changes.

Evangelos Gragoudas

A world authority on the diagnosis and management of intraocular tumors, Evangelos Gragoudas' pioneered the use of proton beam irradiation therapy in the treatment of ocular melanoma. Along with Joan Miller (qv) and Anthony Adamis, Gragoudas was one of the first to describe the role of VEGF in pathologic retinal neovascularization.





Roger Hitchings

Roger Hitchings' interests lie in optic nerve imaging, visual field progression assessment, glaucoma surgery and normal tension glaucoma. He established the Clinical Trials Unit and the associated Reading Centre at Moorfields Hospital, with the latter being one of the UK's key centers for evaluating outcomes in ophthalmic clinical trials.

rading Centre at Hospital, with the latter the UK's key centers for tcomes in ophthalmic

Martine Jager

A past president of ARVO, Martine Jager's research interests are immunology and the development of uveal melanoma and ocular surface disease. Following a PhD in immunology at the University of Leiden, Jager was ophthalmology resident at the University of Amsterdam and a clinical fellow at Miami's Bascom Palmer Eve Institute.

Shigeru Kinoshita

Shigeru Kinoshita established, along with Richard Thoft, the concept of centripetal movement of corneal epithelium. This shed new light on the importance of the limbal epithelium and contributed to the development of corneal stem cell theory. Kinoshita's group recently established systems to transplant cultivated mucosal epithelial stem cells and cultivated corneal endothelium.

Paul Kaufman

Paul Kaufman is a researcher in glaucoma, in particular the mechanisms of aqueous humor formation and drainage, and age-related loss of near vision. He previously served as President and Executive Vice President of ARVO, and is a former president of the International Society for Eye Research.



Robert Grant

Robert Grant is CEO of Alphaeon, a "lifestyle healthcare" company, and has long been a key figure in technology and business development in the pharmaceutical, medical device, and healthcare markets. He was previously CEO and President of Bausch+Lomb Surgical and President of Allergan Medical, where he led the \$3.2 billion acquisition of Inamed.

Mark S Humayun

Mark Humayun is best known for his work on retinal implants. He participated in the first US clinical trial of the Argus II implant, placing it into the eyes of patients with end-stage retinitis pigmentosa. As a result, Argus II became the first retinal implant in the world to receive regulatory approval.



Dennis Lam

Dennis Lam has research interests that span the entire eye. He has contributed to studies from the cornea to the retina, and from epidemiological trials to genetic studies. Lam is the founder of the Project Vision Charitable Foundation, a charity that aims to try to eliminate cataract blindness in China.

Farhad Hafezi

As a post-doc, Farhad Hafezi identified a gene that can completely inhibit light-induced retinal damage in mice. Today his clinical focus is on corneal and refractive laser surgery, and he is a pioneer of corneal collagen cross-linking (CXL). Hafezi was instrumental in building IROC in Zurich, where CXL technology underwent further clinical development.



Peng Khaw

Peng Khaw is a prominent glaucoma surgeon, having pioneered numerous techniques and anti-scarring regimens. His team's research led the introduction of intraoperative antimetabolites, and he introduced the Moorfields Safer Surgery System, dramatically reducing bleb-related complications. Khaw was knighted in the 2013 Queen's Birthday Honors list for services to ophthalmology.

Daniel Martin

Daniel Martin was extensively involved in the development of the ganciclovir implant (and later valganciclovir) for the treatment of CMV retinitis, leading the clinical trials that resulted in FDA approval of both drugs. He also helped lead the CATT trial, which compared bevacizumab with ranibizumab for the treatment of wet AMD.

look and you will see

Albert Maguire

A pioneer of retinal gene therapy, Albert Maguire led a trial that inserted the RPE65 gene into the retinal pigment epithelium to treat Leber congenital amaurosis. He is a colleague (and husband) of Jean Bennett (qv). Recognized regularly by "Best Doctors in America", Maguire is also a noted educator.

Jim Mazzo

Jim Mazzo is chair and CEO of Versant portfolio company AcuFocus, which specializes in corneal inlays, and is Executive Chair at Neurotech Pharmaceuticals, which is pioneering encapsulated cell technology as a drug delivery platform for retinal degenerative diseases. He spent seven years as Chair, President and CEO of Advanced Medical Optics.



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Charles McGhee

A senior ophthalmic surgeon, Charles McGhee is also Editor of the Journal of Clinical and Experimental Ophthalmology. He chairs the RANZCO special interest group in cornea, contact lenses, and cataract and refractive surgery and is one of the most experienced corneal surgeons in New Zealand, having performed over 500 corneal transplantation procedures.

Michael Mrochen

Michael Mrochen is most recently known for his pioneering work on corneal collagen crosslinking, but this is not his first innovation. Mrochen's research with Theo Seiler (qv) led to the development of both wavefrontguided and wavefront-optimized LASIK, which has transformed outcomes, minimized errors and made LASIK a safer and more predictable procedure.

Paul Mitchell

Robert Osher

Robert Osher, a cataract and

implant surgeon, has designed many

contemporary IOLs and surgical

numerous new surgical techniques.

Many of these have been captured

in video, and Osher's surgical videos

have won over 25 first-prize honors

at congresses across the world,

including three Grand Prizes at

ASCRS and ESCRS.

instruments, and has developed

A retinal specialist, Paul Mitchell focuses on the management of AMD, diabetic and other vascular retinopathies, and investigations into how the eye is affected by systemic disease. Mitchell received the 2004 Association of International Glaucoma Societies award, and in 2007 he became trustee for the Clinical & Epidemiologic Research section of ARVO.

Joan Miller

A pioneer of photodynamic therapy using verteporfin, which was the first pharmacotherapy for wet AMD, Joan Miller also helped to define the importance of VEGF in intraocular vascular disease. Today she continues to investigate the molecular pathophysiology of vision loss and to develop improved therapies for retinal disease.



One of the co-inventors of OCT, Carmen Puliafito is a pioneer of bevacizumab use in retinal disorders, and was the first to describe the use of semiconductor diode lasers for retinal photocoagulation. Puliafito was also one of the original basic science research leaders in excimer laser photoablation and optical breakdown and photodisruption.

Daniel Palanker

With forty patents to his name, Daniel Palanker is a crucial innovator for ophthalmology. His research led to the development of the Pulsed Electron Avalanche Knife, the Pattern Scanning Laser Photocoagulator, the CATALYS precision laser system, and most recently, an OCT-guided femtosecond laser system for cataract surgery.

David Parke

David Parke, Executive Vice President and CEO of AAO, has been a prominent and tireless worker for the organization for many years. His service on the board began in 2000, first as trustee-atlarge and ultimately as president. Parke, practicing ophthalmologist with subspecialty focus in retina/ vitreous, received the AAO's Senior Achievement Award in 1998.



David Pyott

David Pyott is credited with turning Allergan from a small eyecare business to a leading global specialty pharmaceutical and medical device company. This progress was driven by Pyott principally through significant investment in research and development, increasing the company's investment from under \$100 million in 1998 to more than \$1 billion in 2013.



Feature **2**5

Nag Rao

Nag Rao founded, the L.V. Prasad Eye Institute, in Hyderabad, India. A global centre of not just excellence in eyecare, research and rehabilitation, but also philanthropy: half of all patients pay nothing. Rao is a past President of the IAPB and devotes much of his time to the IAPB and the Vision 2020 initiative.

Philip Rosenfeld

Philip Rosenfeld, a retina specialist with particular interest in the treatment and study of macular degeneration, has been instrumental in the clinical evaluations and introduction of AMD therapies. These include photodynamic therapy, as well as the introduction into ophthalmology of the VEGF-inhibitors, bevacizumab and ranibizumab.

Seang Mie Saw

The principal investigator of several important epidemiologic studies in Singapore, Mie's studies have encompassed myopia, strabismus, amblyopia and refractive errors in children. Highlights include elucidating genes and environmental factors involved in myopia and pathologic myopia, a major concern in East Asia.

Ursula Schmidt-Erfurth

Ursula Schmidt-Erfurth founded the Vienna Study and Vienna Reading Centers, which respectively run clinical trials and perform digital image analysis for such trials. In addition to leading one of the largest European academic institutions in ophthalmology, Schmidt-Erfurth has a keen interest in the development of novel diagnostic techniques treatment strategies, including intravitreal pharmacotherapy.

Harry Quigley

A founding member of the American Glaucoma Society, former CEO of ARVO and former Editor-in-Chief IOVS, Harry Quigley's research has enabled earlier glaucoma diagnosis and described the degree of optical nerve damage that had occurred before glaucoma is typically detected. His current research interests include gene and stem cell therapies.

Cynthia Roberts

Cynthia Roberts trained as a biomedical engineer and today works as a cross-college bridge between Medicine and Engineering, with appointments in both camps. Roberts' research interests include corneal and ocular biomechanics in cornea, refractive surgery and glaucoma; in vivo measurement of corneal biomechanics and ophthalmic imaging applications.

Robert Ritch

Robert Ritch has devoted his career to two things: understanding the etiology and mechanisms of glaucoma, and innovation in the medical, laser, and surgical treatment of glaucoma. Ritch has held senior positions in many ophthalmology societies and has trained over 130 clinical and research fellows, many of whom occupy academic positions worldwide.







Sunil Shah

Sunil Shah, a cornea and cataract consultant, is an advisor to the UK National Institute for Health and Care Excellence where he represents the Royal College of Ophthalmologists. However, he is most well-known as the inventor of laser epithelial keratomileusis (LASEK) in 1996, and continues to be an active cornea researcher today.



Alan Scott

Alan Scott was first to apply tiny doses of botulinum toxin type A toxin to treat 'crossed eyes' (strabismus) and 'uncontrollable blinking' (blepharospasm), confirming his idea that weakening the muscles that pull crossed eyes inward would be an effective treatment. Allergan bought the rights to the drug and received FDA approval in 1989; it was renamed Botox.

Carol Shields

Carol Shields is an ocular oncologist. The oncology service that she runs with her husband Jerry and their associates manages 500 patients with uveal melanoma, 120 with retinoblastoma and numerous other intraocular, orbital and adnexal tumors, every year. In 2011 Shields was the recipient of the AAO's Life Achievement Honor Award.

Stefan Seregard

Stefan Seregard has devoted the bulk of his research career to examining how eye melanomas arise and spread in the body. Currently, he is trying to identify new therapeutic avenues for ocular melanoma, and to more clearly define the impact that current therapeutic interventions have on patients' quality of life.



Paul Sieving

Paul Sieving was the founder of the Center for Retinal and Macular Degenerations at the University of Michigan, and spent almost sixteen years in Ann Arbor, before moving to Bethesda, MD, to become the Director of the National Eye Institute, a position that he holds today.

Countries where most votes were cast

1 Germany 2 Australia 3 USA 4 China 5 Brazil 6 Italy 7 Nigeria 8 India 9= Japan 9= UK

Kuldev Singh

Kuldev Singh's research interests include glaucoma and cataract surgical trials, epidemiology, genetics and health care delivery in underserved communities. His clinical practice focuses on medical, laser and surgical management of glaucoma and cataract. Singh is president of the American Glaucoma Society and an advisor to the International Society of Glaucoma Surgery.



Feature **2**7

Alfred Sommer

Alfred (Al) Sommer is responsible for vitamin A supplementation, one of the most cost-effective health interventions. He demonstrated that vitamin A deficiency was far more common than previously recognized, and that even mild vitamin A deficiency dramatically increases childhood mortality rates. Dosing with vitamin A reduced child mortality and cut the incidence of measles-associated pediatric blindness.



Paul Sternberg

Paul Sternberg is a retinal specialist, having been at the forefront of many advances in surgical techniques. He maintains an active academic and research program, studying the pathogenesis of age-related macular degeneration, and has played key roles in many ophthalmology societies: in 2013, he served as the President of the AAO.

Hugh Taylor

Hugh Taylor has a long and distinguished career in research into the causes and prevention of blindness in both developed and developing countries, and has published extensively. His current work focuses on Aboriginal eye health and the elimination of trachoma. Taylor is the Treasurer of the ICO and Vice President of the IAPB.

George Spaeth

George Spaeth discovered the disease homocystinuria and published much of the early work on the condition, including the use of pyridoxine as successful treatment. His surgical text is used in many countries and a fourth edition is currently being prepared. He was a founding member and first president of the American Glaucoma Society.

Giovanni Staurenghi

Giovanni Staurenghi's principal

interests are ocular imaging and

the application of lasers to macular

disease. His work extends to clinical

trials and he is currently involved in more than 25 of them. A prolific

author on both eye anatomy and disease, Staurenghi is a fellow of

ARVO, AAO and EURETINA.

Bradley Straatsma is widely acclaimed

as a pioneer in the study of peripheral

retinopathy and cataract. Straatsma

was the last president of the American Academy of Ophthalmology and

Otolaryngology, and led the formation

retinal disease, investigations of tumors and research on ophthalmic

conditions such as diabetic

of the AAO.

Bradley Straatsma

Robert Stamper

Robert Stamper specializes in glaucoma and cataract surgery. His research interests include early methods for the diagnosis of glaucoma and the evaluation of new surgical procedures for glaucoma. He has published analyses of glaucoma eyedrops, implants and surgical procedures. Stamper received an AAO Lifetime Achievement Award in 2008.

Marie-José Tassignon

With four patents that have been implemented in clinical practice, Marie-José Tassignon is a keen proponent of the need for ophthalmologists to understand physiology and the physics of optics. Tassignon developed the innovative bag-in-the-lens implantation technique that avoids PCO, the main complication of the traditional lensin-the-bag implantation technique.

Boris Stanzel

Boris Stanzel works on stem cell replacement for frequent age-related blindness. With his collaborators, Stanzel transplanted stem-cellderived retinal pigment epithelium into the subretinal space of rabbits, a first in a large-eyed animal model. The transplants remained intact at four weeks, suggesting that many of the roadblocks to RPE monolayer transplantation have been overcome.





Mark Tso

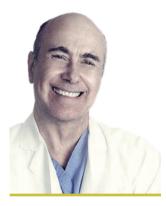
Mark Tso's career has been built on research in experimental and human ophthalmic pathology. His studies on the benign form of retinoblastoma (fleurettes in retinoma), pathology and pathogenesis of papilledema, macula edema, retinal photic injury and photoreceptor degeneration have been described as "innovative, creative and original".

Kazuo Tsubota

Kazuo Tsubota's investigation and research interests include corneal regeneration, development of novel treatment modalities for Sjögren's syndrome and severe dry eye. He also focuses on treating age-related eye diseases such as macular degeneration, cataract and presbyopia. He has particular success treating near- and farsightedness as well as astigmatism.

George Waring III

In the 1970s, George Waring established northern California's first eye bank. He subsequently moved to Emory University, where he is Clinical Professor of Ophthalmology and, since 2003, he has practiced privately at the InView Center, Atlanta. Waring has performed more than 10,000 LASIK and other refractive procedures.



Xiulan Zhang

Xiulan Zhang has a prolific publication record in glaucoma, having performed imaging studies that have furthered the understanding of anatomical dysfunction in the glaucomatous eye, and what surgical interventions can do to improve matters. Zhang works at the Zhongshan Ophthalmic Center, which was voted China's most popular eye hospital for five consecutive years.

Eberhart Zrenner

A graduate in electronic engineering as well as in medicine, Eberhart Zrenner's career has merged his clinical and research interests. He founded the Institute for Ophthalmic Research where he runs a special clinic for patients with hereditary retinal degenerations. His research pursuits include retinal physiology and pathophysiology, ophthalmogenetics and retinal implants.

Ningli Wang

While serving as director and the vice president of one of the two largest eye centers in China, Ningli Wang is also devoted to ophthalmic practice, teaching, training, blindness prevention and academic research. His contributions include the trans-lamina cribrosa pressure difference theory of open-angle glaucoma.

Robert Weinreb

As a clinician, surgeon and scientist, Robert Weinreb maintains diverse medical and research interests. He is also a prolific educator; many of his (more than 100) postdoctoral fellows in glaucoma have gone on to hold department chairs and other distinguished academic positions in the United States and throughout the world.

Tetsuya Yamamoto

Tetsuya Yamamoto has been part of many great advances in knowledge in the field of glaucoma. From population analyses of bleb dysfunction, identification of genes associated with glaucoma, imaging studies and the use of antifibrosis agents in glaucoma surgery, his contributions have significantly advanced the field.

Lawrence Yannuzzi

Lawrence Yannuzzi is a pioneer in angiography. He and his colleagues are credited with describing – and naming – idiopathic polypoidal choroidal vasculopathy, a type of hemorrhagic maculopathy. Yannuzzi has published more than 300 scientific papers and 11 textbooks, focused on diseases of the macula such as diabetic retinopathy and agerelated macular degeneration.

Gerhard Zinser

The co-founder and a Managing Director of Heidelberg Engineering, Gerhard Zinser has contributed to many key advances in imaging technology, including confocal microscopy, scanning lasers and optics, OCT and software image analysis. The resulting diagnostic instruments have changed clinical practice for retinal disease, glaucoma and corneal pathologies.







The Top 20

20 Harminder Dua

An active clinician, teacher and prolific researcher, Harminder Dua's most recent contribution to the science of ophthalmology was the discovery of a new corneal layer in 2013. He serves as editorin-chief of the British Journal of Ophthalmology, is past president of EuCornea and is immediate past president of the Royal College of Ophthalmologists.

17 John Marshall

John Marshall's research covers a wide range of ocular disorders and his research has covered the development of lasers for use in ophthalmic diagnosis and surgery, and it's this that he is most famous for: he invented and patented the excimer laser and also created the first diode laser that was used for treating eye problems.

16 Gerd Auffarth

Gerd Auffarth is director of the David J. Apple Laboratory. This international lab, which is devoted to research on intraocular ophthalmic devices, recently relocated to Heidelberg from South Carolina. Auffarth's research interests include cataract surgery; intraocular lenses; implants; viscoelastic, refractive laser technology and surgery, diagnostic tools, and the cornea.

19 Claes Dohlman

Once referred to as "father of modern corneal science", Swedishborn ophthalmologist Claes Dohlman has spent the majority of his career in Boston, becoming Chief of Ophthalmology the Massachusetts Eye and Ear Infirmary in 1974. He developed the Boston keratoprosthesis, an effective (and revolutionary) treatment option for severe corneal diseases.



15 Frank Holz

Frank Holz is an AMD researcher whose focus is on the pathogenesis and therapy of AMD as well as on retinal imaging methodologies and phenotyping. In addition, Holz has lead numerous ranibizumab clinical trials. He is Editor-in-Chief of the journal of the German Ophthalmological Society (DOG), Der Ophthalmologe, and a past president of DOG.



14 Bruce Spivey

Bruce Spivey is one of the great educators in ophthalmology, spending much of his career trying to improve how ophthalmology is taught and assessed. The current President of the International Council of Ophthalmology (and a former AAO CEO), Spivey is the author of over 130 scientific education and management articles.

18 Robert Nussenblatt

Robert Nussenblatt is an ocular immunologist. His primary research interests are uveitis and the role of inflammation in causing AMD. He also investigates new therapeutic approaches to treating human disease, including oral tolerance and the use of natural products, and studies the role epigenetics plays in the development or nondevelopment of disease.





13 Dan Albert

Daniel Albert is a prominent researcher in ocular melanoma and retinoblastoma, notably on mechanisms of tumor growth and inhibition. He is also a co-author and currently senior editor of Albert & Jakobiec's Principles & Practice of Ophthalmology, a widely-used textbook. Albert previously spent 20 years as Editor-in-Chief of Archives of Ophthalmology.

10 John Kanellopoulos

A CXL expert, John Kanellopoulos developed the Athens protocol for keratoconus and ectasia, which combines laser normalization of the irregular cornea with cross-linking. He also introduced higher fluency crosslinking and prophylactic cross-linking with LASIK, a precursor to LASIK Xtra, and demonstrated how CXL helps in infectious keratitis, corneal melts and pseudophakic keratopathy.

7 Ike Ahmed

Ike Ahmed is an eye surgeon who has developed many novel treatments and methods for glaucoma, cataract, and lens implant surgery. He has performed pioneering work in glaucoma surgery, developing microinvasive glaucoma surgery, MIGS (and coining the term), which ushered a new generation of surgical approaches and devices into ophthalmology.





9 David Huang

Co-inventor of optical coherence tomography and first author of the seminal article on the topic, which has been cited more than 3,300 times, David Huang received the AAO's Achievement Award in 2004. His research on refractive surgery, laser and imaging technologies combines an understanding of laser surgery from both clinical and an engineering perspective.



12 Rudy Nuijts

Rudy Nuijts identified the etiology

of toxic endothelial cell destruction

Segment Syndrome). His current

in corneal, cataract and refractive

femtosecond lasers and transcleral

ESCRS, and serves on the Corneal

surgery, particularly the use of

drug delivery. He is treasurer of

and Educational Committees.

after cataract surgery (Toxic Anterior

research interests include innovations

11 Renato Ambrósio

A major contributor to the introduction of corneal imaging technology, Renato Ambrósio also holds multiple academic appointments. His work has helped establish the true nature of corneal pathologies, from keratoconus to post-LASIK dry eye, and he is a strong proponent of pre-surgical anterior segment OCT to drive better outcomes.

8 Abhay Vasavada

A cataract/refractive surgeon and Fellow of the Royal College of Surgeons, Abhay Vasadva has great expertise in the successful resolution of complicated cataract and pediatric cases. This knowledge is in great demand: Vasadva is a renowned educator and is regularly asked to share his experiences by performing live surgery.

5 David Chang

A past president of ASCRS and current chair of the AAO Cataract Preferred Practice Pattern Committee, David Chang is the cataract/refractive surgeon who wrote what many consider to be the definitive textbook on the subject. Chang was the first in the US to implant a light-adjustable IOL and the first to implant the Synchrony accommodating IOL.



6 Ioannis Pallikaris

Ioannis Pallikaris was the first to perform the LASIK procedure on a human eye. He went on to develop Epi-LASIK, and has a current research interest in corneal inlays. He is also an enthusiastic educator who has over 30 years of teaching experience in both Greece and Switzerland at undergraduate and post-graduate levels.



4 Richard Lindstrom

Richard Lindstrom holds more than thirty patents in ophthalmology, having developed a number of solutions, intraocular lenses and instruments. He serves in the Board of Directors of several companies that operate within ophthalmology, is a past president of ASCRS and ISRS, and a member of the ASCRS Executive Committee.

Theo Seiler

Theo Seiler's doctorates in physics and medicine enabled him to become a pioneer of refractive surgery. Among his achievements are the development of the first clinical dye laser and the invention of corneal crosslinking (CXL); he also performed the first ever PTK, PRK and wavefront-laser guided surgical techniques on the human eye, and was also the first to combine LASIK and rapid CXL. Seiler founded the renowned Institute for Refractive and Ophthalmic Surgery (IROC) in 2002.

3 Donald Tan

Donald Tan's many contributions include new forms of selective lamellar keratoplasty, femtosecond corneal and refractive surgery, the Osteo-Odonto Keratoprosthesis, surgical devices for lamellar corneal transplantation, and multiple interventional myopia clinical trials. The founder of the Asia Cornea society, Tan also holds twelve patents that range from stem cell culture technology to novel inserters for DSAEK surgery.



2 Amar Agarwal

Amar Agarwal is a pioneer of microincisional cataract surgery. He was first to remove cataracts through a 0.7 mm tip; first to develop noanesthesia cataract surgery; first to implant a glued IOL, and first to use Trypan blue as epiretinal membrane stain. Most recently, he and Harminder Dua (qv) have pioneered Pre-Descemet's Endothelial Keratoplasty.

