eyeWitness
ISSUE 34 • August 2017

HARVARD MEDICAL SCHOOL
DEPARTMENT OF Ophthalmology

NEWS FROM THE HARVARD MEDICAL SCHOOL DEPARTMENT OF OPHTHALMOLOGY

educate

verb | ed·u·cate \ˈe-jə-ˌkāt\

"Educate" stems from the Latin word *ducere*, which means "to lead." Therefore, to educate, or teach, is to lead others to knowledge.

Cover art created by student at Perkins School for the Blind. See page 12 for full story.

AFFILIATES: Massachusetts Eye and Ear | Schepens Eye Research Institute of Mass. Eye and Ear | Massachusetts General Hospital | Joslin Diabetes Center/Beetham Eye Institute | Beth Israel Deaconess Medical Center | Boston Children's Hospital | Brigham and Women's Hospital VA Boston Healthcare System | VA Maine Healthcare System | Cambridge Health Alliance
PARTNERS: Aravind Eye Hospital (India) | LV Prasad Eye Institute (India) | Shanghai Eye and ENT Hospital, an affiliate of Fudan University (China)

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Objective Measures Are Here to Stay

A review of the h-index

Universities, hospital boards, and external supporters—including funding agencies, foundations, and philanthropists—seek metrics on which to judge the success of individual faculty, departments, and programs. In the clinical realm, clinical outcome measures and patient-reported outcome measures (PROMS) are two sets of metrics that are being developed. However, identifying a research metric that can adequately assess research contributions and productivity is elusive and challenging. Most of the metrics we currently use rely on citation frequency.

The h-index, or Hirsch index, is an author-level metric that measures both the number of publications and the number of citations per publication. A scholar with an index of *h* has published *h* papers each of which has been cited in other papers at least *h* times. Despite its methodological limitations, the h-index has become the most widely accepted objective measure of a scholar's research productivity. Studies have shown that the h-index is positively correlated with academic rank and fellowship training and strongly associated with NIH funding.

There are several ways to calculate an h-index. Both Web of Science and Scopus calculate h-index based on the number of peer-reviewed journal articles and citations in peer-reviewed journals. These calculations are most useful for faculty on research tracks. They do not, however, provide an accurate assessment of scholarship for faculty on clinician-innovator or educator tracks because they exclude non-traditional forms of scholarship, such as books, patents, surgical innovations, and curricula. As a result, many of us now use Google Scholar to calculate h-index because it broadens the definition of scholarship to include abstracts and book chapters.

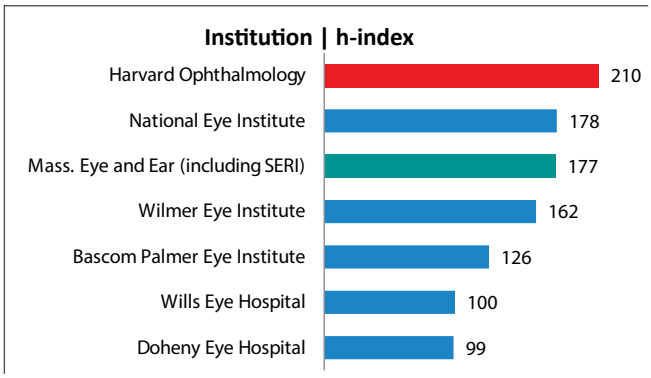
Regardless of which database one uses, h-index calculations may be prone to error if scholar lists are not vetted carefully for name confusion—which is a common problem throughout the scientific community in general. As we move toward unique identifiers, such as ORCID identifiers, Google Scholar's approach may become a more useful, reflective calculation of today's broad range of scholarship. Notably, the same database must be used to make valid comparisons between two or more h-indexes.

The h-index can also reflect the research productivity, or the "footprint," of entire ophthalmology departments. According to a 2016 study,[1] Mass. Eye and Ear had the biggest footprint, followed by Bascom Palmer Eye Institute, Wills Eye Institute, and Wilmer Eye Institute.

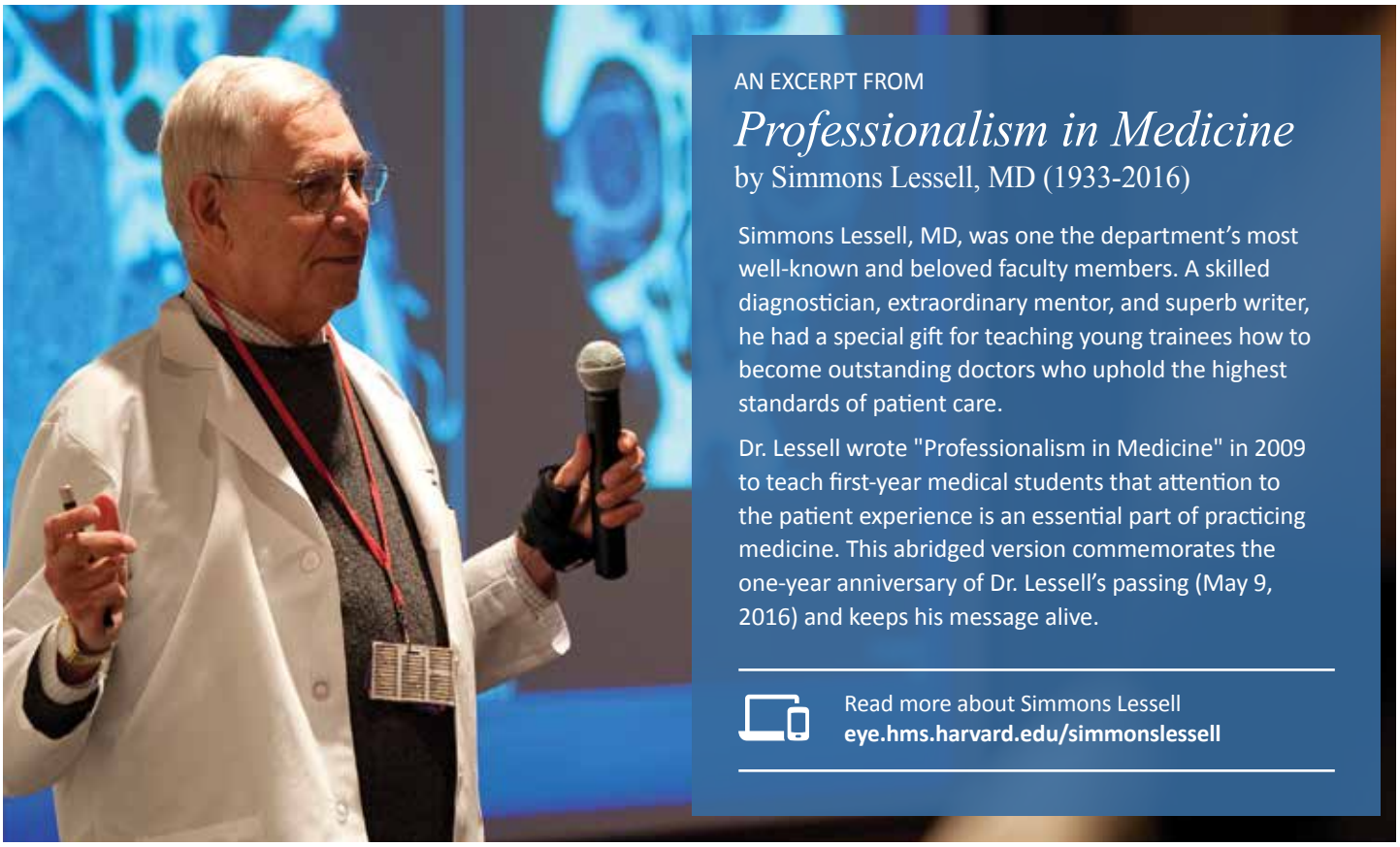
We also calculated our entire department's h-index (180+ full-time Harvard Ophthalmology faculty across nine affiliates between 1990 and 2015) and compared it to other leading institutions. With an h-index of 210, Harvard Ophthalmology's research footprint tops the field, surpassing the National Eye Institute.

It is clear that objective measures, such as the h-index, are here to stay in all spheres of academic medicine: clinical, research, and education. Admittedly, they will never fully replace subjective assessments because we cannot (and should not) remove our acumen from the process. However, they can help us make meaningful comparisons among individuals, departments, and programs. It would be wise for us to be involved in the process as these measures are honed further.

Joan W. Miller, MD
Chief and Chair



[1] Thiessen CR, Venable GT, Ridenhour NC, Kerr NC. Publication productivity for academic ophthalmologists and academic ophthalmology departments in the United States: an analytical report. *J Clin Acad Ophthalmol* 2016; 08(01): e19-e29.



AN EXCERPT FROM

Professionalism in Medicine

by Simmons Lessell, MD (1933-2016)

Simmons Lessell, MD, was one the department's most well-known and beloved faculty members. A skilled diagnostician, extraordinary mentor, and superb writer, he had a special gift for teaching young trainees how to become outstanding doctors who uphold the highest standards of patient care.

Dr. Lessell wrote "Professionalism in Medicine" in 2009 to teach first-year medical students that attention to the patient experience is an essential part of practicing medicine. This abridged version commemorates the one-year anniversary of Dr. Lessell's passing (May 9, 2016) and keeps his message alive.

Read more about Simmons Lessell
eye.hms.harvard.edu/simmonslessell

It is hard to define medical professionalism, but it is a code of behavior that we usually recognize when it is practiced and even more readily recognized when it is not. Just as you strive to acquire a strong foundation in the medical sciences and clinical medicine, you should also strive to ensure that you behave like a professional….

There are, of course, elements of medical professionalism that are common to all human behavior but which come sharply into focus in the relations between patients and physicians, and between physicians and other healthcare providers. Among them are honesty, reliability, courtesy, generosity, gratitude, and forgiveness…. There are also aspects of professionalism that are especially pertinent to practitioners of the healing arts [including altruism, punctuality, and attentiveness]…

Being a patient is often an uncomfortable experience, both physically and emotionally. The patient is in an unfamiliar milieu, uncertain of what will happen, fearful of the implication of his symptoms, and meeting strangers who obtain his most personal information and explore his body…

[Do] everything to make your interactions as free of tension and anxiety as is possible for the patient… In one-on-one interactions, always introduce yourself and explain your role. While you may at first be more anxious than the patient, do your best to appear calm and reassuring.

It is important to be generous to your colleagues; not only to physicians and medical students, but also to the technicians, nurses, social workers, and others who are your de facto "teammates." Despite efforts to avoid mistakes, everyone involved in the care of the sick eventually makes them….

Finally, be kind and generous to yourself. Medicine tends to attract conscientious individuals who, under the best of circumstances, are self-critical. You would not be here were you not a high achiever, and you probably have had an unblemished academic career. Failure may be unknown to you. However, in medicine you will inevitably face challenges that you cannot overcome, and there will be instances in which you will err, despite your best efforts to avoid it. The healthiest approach to failure or error is to recognize it and learn to avoid it. Self-flagellation and rumination are destructive. Try to take the constructive approach.

Help us endow the Simmons Lessell Fellowship in Neuro-Ophthalmology

The endowed Simmons Lessell Fellowship will support a clinical or research fellow in neuro-ophthalmology at Mass. Eye and Ear. Since the fellowship was established in 2016, we have raised $897,000 toward our endowment goal of $1 million. To support this initiative, contact Julie Dutcher in the Development Office at Mass. Eye and Ear:

T: 617-573-3350

MassEyeAndEar.org/donations

Retina Celebrates a Platinum and Golden Jubilee

Charles L. Schepens, MD

The year 2017 marks two significant milestones in the field of retina: the 70th anniversary of the Retina Service at Mass. Eye and Ear and the 50th anniversary of the Retina Society. Underscoring the significance of these events are the following words, which were penned by **Henry Allen, MD**, 45 years ago for the "Proceedings of the 1972 Retina Congress:"

> *[Before 1947] there was no Retina Service at Massachusetts Eye and Ear, nor anywhere else. There was no Retina Society, few if any retina specialists, and no Retina Foundation. Relatively little progress had been made since the demonstration by the great Jules Gonin of the role of retinal breaks in the production of retinal detachment. There was no binocular indirect ophthalmoscope except for a pilot model in the hands of its inventor, a young Belgian ophthalmologist newly arrived in Boston....*

Charles L. Schepens, MD, initially came to Mass. Eye and Ear as a research fellow, but quickly developed a reputation for clinical excellence, tackling many of the most difficult retina cases at Mass. Eye and Ear. In late 1947, he organized the first Retina Service at Massachusetts Eye and Ear with encouragement and help from the Mass. Eye and Ear Board of Surgeons: **Edwin B. Dunphy**, **William P. Beetham**, **Virgil G. Casten**, **Paul A. Chandler**, **Trygve Gundersen**, **Merrill J. King**, and **Benjamin Sach**.

Starting in 1948, the Retina Service offered its first retina fellowship, which began as a unique, three-month, hands-on training opportunity for residents. Later, these training opportunities developed into one- and two-year fellowship programs that attracted retina surgeons nationwide. Among this early group of dedicated fellows and collaborators were **Ichiro Okamura**, **Robert Brockhurst**, **Silvio von Pirquet**, and **Charles Regan**.

By the 1950s and 1960s, alumni meetings of the Retina Service began to generate broader interest, and four national meetings were held that featured diseases of the retina as the main topic of discussion. **Alice McPherson, MD**, the first woman retina fellow to train under Dr. Schepens, chaired the 1965 Houston meeting. Heartened by the large attendance and international participation at this meeting, Dr. Schepens and colleagues founded the Retina Society—a professional organization of retina surgeons—at the 1967 American Academy of Ophthalmology meeting.

In 1975, one of Dr. Schepens' protégées, **Evangelos Gragoudas, MD**, joined the Mass. Eye and Ear Retina Service. After serving as Associate Director for nine years, he assumed directorship of the Retina Service and Fellowship in 1985 and has since transformed the service into a preeminent center of excellence with an international reputation for excellence in clinical care, research, and education.

Today, the Retina Service at Mass. Eye and Ear is the third-largest retinal subspecialty group in the country, with 21 clinicians practicing at seven locations in MA and RI. Service members provide care for the full gamut of retinal conditions, including diabetic retinopathy, macular degeneration, inherited (genetic) retinal disorders, eye tumors, pediatric retinal disorders, and more. The clinical fellowship training program in retina also has grown and diversified. Mass. Eye and Ear now offers subspecialty training in Vitreoretinal Surgery, Medical Retina, and Inherited Retinal Degenerations.

Dr. Schepens passed away in 2006, but his legacy lives on, worldwide, through his former 200+ trainees, many of whom have become leaders in the field.

IN MEMORIAM

Mass. Eye and Ear alumnus **William Tasman, MD**, passed away March 28, 2017. The most senior member of the Retina Society and its former President, Dr. Tasman was an ophthalmologist and retina specialist who pioneered retinopathy of prematurity treatments. After completing a retina fellowship (class of 1962) under the tutelage of Dr. Schepens, he dedicated 52 years to Jefferson Medical College, where more than 600 retina fellows and residents at Wills Eye Hospital benefited from his wisdom and extraordinary teaching. His career as an academic leader reached a pinnacle in 1985, when he was appointed as Ophthalmologist-in-Chief at Wills and Professor and Chairman of the Department of Ophthalmology. The field of ophthalmology has benefited from his efforts for many decades and, undoubtedly, will continue to benefit from his legacy of leadership.

Join us on October 4, 2017 for a reception honoring the life and legacy of Charles L. Schepens, MD and celebrating the 70th anniversary of the Mass. Eye and Ear Retina Service.

eye.hms.harvard.edu/calendar

2017 ARVO
Baltimore Highlights

Year after year, Harvard Ophthalmology is among the most well-represented academic institutions at the Association for Research in Vision and Ophthalmology Annual Meeting. With more than 230 faculty and trainees participating in 2017, this year was no exception. With a central focus on "Global Connections in Vision Research," the 2017 meeting addressed the challenges of bridging gaps in scientific knowledge and building effective collaborations.

Joan W. Miller, MD, FARVO, a 2017 member of the Dowling Society, was honored during the ARVO Foundation and Dowling Society Gala Awards Ceremony and Dinner. Dr. Miller stands with (left to right) Gary W. Abrams, MD; J. Mark Petrash, PhD; and John E. Dowling, PhD.

Julia Oswald, PhD, a post-doctoral fellow at Schepens Eye Research Institute of Mass. Eye and Ear who works under the mentorship of Petr Baranov, PhD, presented her work to journalists during the ARVO Press Conference on Monday, May 8. Dr. Oswald was first author on one of the top-3 "most innovative and interesting" abstracts at ARVO this year (out of more than 6,000 abstracts).

Ula Jurkunas, MD, Mass. Eye and Ear, received the 2017 ARVO Foundation/Pfizer Ophthalmics Carl Camras Translational Research Award. The award provides $12,000 in support of Dr. Jurkunas' research efforts combatting corneal disease.

Magali Saint-Geniez, PhD, Schepens Eye Research Institute of Mass. Eye and Ear, received a 2017 Alcon Research Institute Young Investigator Grant. Dr. Saint-Geniez focuses her research on the regulation of retinal pigment epithelial and photoreceptor metabolism.

Corinna Bauer, MD, PhD, Mass. Eye and Ear, received a 2017 ARVO Foundation/Reader's Digest Partners for Sight Foundation Travel Grant. Five trainees also received awards. **Stephanie Llop, MD**, and **Huy Nguyen, MD**, received ARVO Foundation/Knights Templar Eye Foundation Travel Grants, and **Luciano Custo Greig, MD**, **Fengyang Lei, MD, PhD**, and **Maryam Tahvildari, MD**, received National Eye Institute Travel Grants.

Johanna Seddon, MD, ScM, FARVO (class of 1982), Professor and Founding Director of the Ophthalmic Epidemiology and Genetics Service at Tufts University, presented the 2017 Mildred Weisenfeld Award for Excellence in Ophthalmology Lecture. Dr. Seddon completed her ophthalmic pathology and vitreoretinal surgery fellowships at Mass. Eye and Ear.

Distinguished Achievement Award lectures illustrate the importance of building diverse teams and collaborating across disciplines

Two Harvard Ophthalmology alumni, **Donald D'Amico, MD**, Weill Cornell Medical College, and **Anthony Adamis, MD**, Genentech/Roche, presented the 2017 Distinguished Clinical and Research Achievement Award lectures at the Harvard Ophthalmology Annual Meeting and Alumni Reunion, held June 23-24. Dr. D'Amico's advice for trainees was to broaden their experience—not only through professional interactions and meetings, but also by engaging in personal passions. Dr. Adamis discussed innovative approaches to ophthalmic drug development and the evolving role of "deep-learning algorithms" in the classification and early detection of eye diseases.

Read more about the 2017 Harvard Ophthalmology Annual Meeting and Alumni Reunion

eye.hms.harvard.edu/annualmeeting2017

2017 Teaching Recognitions

Simmons Lessell Excellence in Education Award

Evangelos Gragoudas, MD

Clinical Teacher of the Year Award

Jan Kylstra, MD

Surgical Teacher of the Year Award

Christian Song, MD

Fellow of the Year Award

Upneet Bains, MD
Glaucoma Fellow
Mass. Eye and Ear

2017 Service Recognitions

Resident Appreciation Award

Michel Sem
Operating Room Technician
Mass. Eye and Ear

Harvard Ophthalmology's Newest Alumni, the Class of 2017

Thirty Harvard Ophthalmology/Mass. Eye and Ear clinical trainees graduated on June 15. The ceremony, held at Mass. Eye and Ear, celebrated eight Harvard Ophthalmology residents, the AY 2016-2017 Chief Resident, and one optometry resident, as well as 20 clinical fellows from Mass. Eye and Ear, Joslin Diabetes Center, and Boston Children's Hospital.

"Graduation is one of our department's most treasured occasions," said Harvard Ophthalmology Chief and Chair, Joan W. Miller, MD. "Our graduates excel in our three mission areas of clinical care, research, and teaching. They are bright and inquisitive; confident and generous. I hope that they will continue to seek opportunities to stretch and grow, and share their knowledge and talent with others."

Next steps for the class of 2017

- **Subspecialty Training**: Seven ophthalmology residents, the 2016-17 Chief Resident, and two clinical fellows will pursue clinical fellowships in cornea, anterior segment, retina, eye pathology, neuro-ophthalmology, and oculoplastics. Some will remain at Mass. Eye and Ear, while others will pursue training at University of California, Irvine; Wills Eye Institute, Bascom Palmer Eye Institute; and other leading institutions.
- **Chief Resident**: **Tomasz (Tommy) Stryjewski, MD, MPP**, will serve as Chief Resident and Director of the Ocular Trauma Service at Mass. Eye and Ear for academic year 2017-18
- **Academic Ophthalmology**: Among the clinical fellow graduates, 10 are pursuing full-time academic careers in ophthalmology. Optometry resident **Gabriel Fickett, OD**, joined the staff at Mass. Eye and Ear as a member of the Optometry and Contact Lens Service in July 2017.
- **Private Practice**: Eight clinical fellow graduates joined private practices (including one who will also participate in part-time academics).

Five graduating residents receive Heed Fellowships

Nearly one-quarter of the 21 Heed Fellowships offered for 2017-2018 were awarded to graduating Harvard Ophthalmology residents. Congratulations to: **Eric Gaier, MD, PhD; James (Tony) Stefater, MD, PhD; Natalie Wolkow, MD, PhD; Zeba Syed, MD**; and **Durga Borkar, MD**.

Meet Harvard Ophthalmology's residents and graduates
eye.hms.harvard.edu/residents

Stepping into Leadership

Meet Harvard Ophthalmology's newly appointed leaders in education

Alice Lorch, MD—Associate Director, Harvard Ophthalmology Residency Training Program

As part of Harvard Ophthalmology's educational leadership team, Dr. Lorch works closely with Residency Program Director, **Carolyn Kloek, MD**, to ensure that residents receive a world-class education—second to none—that prepares them for success in their chosen careers. A member of the Mass. Eye and Ear Comprehensive Ophthalmology and Cataract Consultation Service, Dr. Lorch is concurrently pursuing a degree in public health; her studies dovetail with her research interests in healthcare quality and outcomes. Dr. Lorch completed her ophthalmology residency in 2014 and served as Chief Resident and Director of the Ocular Trauma Service during the 2015-16 academic year.

Hajirah Saeed, MD—Associate Director, Cornea and Refractive Surgery Fellowship, Mass. Eye and Ear

Dr. Saeed works alongside Cornea and Refractive Surgery Fellowship Director, **James Chodosh, MD, MPH**, to manage the administrative aspects of the fellowship training program at Mass. Eye and Ear. A full-time member of the Cornea and Refractive Surgery Service at Mass. Eye and Ear, Dr. Saeed specializes in adult and pediatric corneal disease and refractive surgery. She also conducts research on Stevens-Johnson Syndrome (SJS), a rare, yet serious autoimmune disorder. Dr. Saeed completed her medical training and ophthalmology residency at Loyola University and a clinical fellowship in cornea and refractive surgery at Mass. Eye and Ear, serving as Chief Fellow her second year.

Tomasz (Tommy) Stryjewski, MD, MPP—Chief Resident & Director, Ocular Trauma Service at Mass. Eye and Ear

Dr. Stryjewski joined the leadership team of one of the busiest ocular trauma centers in the country (with more than 100 ruptured globes annually) in July. In addition to coordinating trauma coverage at Mass. Eye and Ear's Emergency Department and Brigham & Women's Hospital, he teaches and mentors the department's 24 residents, working alongside **Carolyn Kloek, MD**, and **Alice Lorch, MD**. A graduate of Harvard Medical School, Dr. Stryjewski earned his Master in Public Policy from the Kennedy School of Government and completed his ophthalmology residency at Harvard in June 2017. He plans to pursue training in vitreoretinal surgery and translational research.

Ryan Vasan, MD—Director, Ophthalmology Component of Core Medicine I at Harvard Medical School

Dr. Vasan works closely with **Ankoor Shah, MD, PhD**, Director of Ophthalmic Medical Student Education at HMS, to provide all first-year medical students with a basic foundation in ophthalmology. Dr. Vasan succeeds Deborah Jacobs, MD, who has been a strong leader and advocate of the Core Medicine course since 2004. At Mass. Eye and Ear, Dr. Vasan teaches residents who rotate through the Comprehensive Ophthalmology and Cataract Consultation Service. Dr. Vasan also serves on New England Ophthalmological Society's Young Ophthalmologists Committee. In April 2017, he moderated the Society's inaugural Grand Rounds.

Educator Spotlight

In 2009, Harvard Ophthalmology alumnus (residency class of 1976) **Lawrence Rand, MD**, implemented a scientific journal club for Harvard Ophthalmology residents and Mass. Eye and Ear fellows to help trainees think critically about research and advances in their field. "Medicine is changing rapidly—trainees need to be able to analyze new research and how it applies to clinical practice," said Dr. Rand, who leads the journal club.

Dr. Rand completed a joint vitreo-retinal fellowship at Joslin Clinic and the National Eye Institute. He then joined the medical staff at Joslin Diabetes Center, first as Director of Eye Research from 1978 to 1987, and then as Executive Director of the William P. Beetham Eye Unit until 1989.

In addition to enriching Harvard's ophthalmic education, Dr. Rand provides specialty eye care for patients with diabetes, retinal disorders, and macular degeneration at the Medical Eye Care Associates in Norwood, The Eye Center in Framingham, Valley Eye in Ayer, and Urban Eye in Boston.

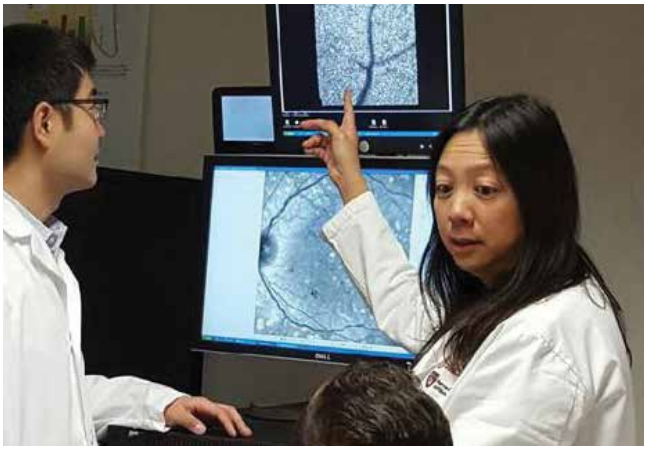
Jennifer Sun to chair NIH-funded diabetic retinopathy collaborative research network

Jennifer Sun, MD, MPH, Associate Professor of Ophthalmology, and Chief of the Center for Clinical Eye Research and Trials at Beetham Eye Institute (BEI), Joslin Diabetes Center, was selected for leadership of the Diabetic Retinopathy Clinical Research Network (DRCR.net). After serving as chair-elect in 2017, Dr. Sun will assume the role of chair for diabetes-related studies for a five-year term. Dan Martin, MD, from Cleveland, OH, will oversee the section on other retinal diseases.

> "This is likely the most prestigious position that currently exists for a clinical researcher in diabetic eye disease," said **Lloyd Paul Aiello, MD, PhD**, Ophthalmologist-in-Chief at BEI and Founding Chair of the DRCR.net.

"It is a tremendous honor to be selected as incoming Chair for the DRCR Network," said Dr. Sun. "This recognition—and my research in the field—would not have been possible without the remarkable diabetes-related resources and mentors I have had at Joslin and throughout Harvard Ophthalmology."

Dr. Sun has been involved with the DRCR.net since 2005, and for the past six years, she has served as the nationwide Protocol Working Investigator for the DRCR.net. Currently, she is a member of the Operations Group and the Executive Committee, as well as the nationwide Protocol Chair for both the Ultrawide-field Imaging study (Protocol AA) and for the Anti-VEGF for PDR/DME Prevention Study (Protocol W).



About the DRCR.net

- A collaborative network of more than 100 clinical sites throughout the United States and Canada
- Responsible for many of the most important, care-changing clinical trials in diabetic eye disease performed over the past 15 years
- Funded by the National Institutes of Health
- Led the first phase 3 trials of anti-VEGF therapy for diabetic macular edema and proliferative diabetic retinopathy

Scope of study

- Supports the identification, design, and implementation of multicenter clinical research initiatives
- Formerly limited to diabetes-induced retinal disorders
- Now includes all types of retinal disease

Michael Gilmore chairs $20 million antibiotic-resistance challenge

In March 2017 **Michael Gilmore, PhD**, Director of the Harvard Ophthalmology Infectious Disease Institute, chaired a blue ribbon panel that reviewed the most promising applications for the Antimicrobial Resistance Diagnostic Challenge—a $20 million federal prize competition to develop rapid, point-of-care laboratory diagnostic tests to combat the development and spread of drug resistant bacteria.

The National Institutes of Health (NIH) teamed up with the U.S. Department of Health and Human Services (HHS) Office of the Assistant Secretary for Preparedness and Response to fund this initiative. Semifinalists will receive $50,000 to develop prototypes and analytical data for their diagnostic devices. Finalists will be selected at the end of 2018, and the winner(s) will be announced in July 2020.

"Being asked to lead the blue ribbon panel for the NIH challenge is quite an honor," said Dr. Gilmore. "Developing quick and accurate diagnostic tests is of the utmost importance, and this initiative dovetails nicely with our efforts here in the Infectious Disease Institute."

A leading expert in infectious diseases, Dr. Gilmore is a principal investigator of the NIH/National Institute of Allergy and Infectious Disease-funded Harvard-wide Program on Antibiotic Resistance. He founded, and now organizes, the annual meeting of the Boston Area Antibiotic Resistance Network.

Janey Wiggs (left) and husband Robert D'Amato (right) with their children Chris, Andrew, and Ally

Alumni with a Stake in the Outcome

As both alumni and professors of ophthalmology at Harvard Medical School, **Janey Wiggs, MD, PhD**, and her husband **Robert D'Amato, MD, PhD**, have been staunch supporters of Harvard Ophthalmology for years. In addition to providing unrestricted funds to the department, they make annual gifts to support Mass. Eye and Ear's Sense-ation! Gala and the work of a glaucoma research fellow in Dr. Wigg's laboratory.

Dr. Wiggs completed her medical training and ophthalmology residency at HMS, followed by fellowships in glaucoma and genetics research at Mass. Eye and Ear. Her research and clinical activities have led to the development of novel diagnostic gene-based tests that can identify patients at risk for glaucoma. Among her numerous leadership positions, Dr. Wiggs is Vice Chair of Clinical Research at Harvard Ophthalmology and Associate Chief of Ophthalmology Clinical Research at Mass. Eye and Ear.

After graduating from Harvard Ophthalmology's Residency Training Program (class of 1992), Dr. D'Amato completed a postdoctoral research fellowship in the Judah Folkman laboratory at Boston Children's Hospital (BCH) where he became an independent investigator in 1994. His discovery that thalidomide is a potent angiogenesis inhibitor led to an FDA-approved treatment for multiple myeloma, and he has since discovered more potent derivatives of thalidomide. His current research focuses on small molecule inhibitors of angiogenesis, age-related macular degeneration, and genetic modifiers of angiogenesis. Now the Judah Folkman Chair in Surgery and Director of the Center for Macular Degeneration at BCH, Dr. D'Amato presented the Mariana Mead Lecture at the 2017 Harvard Ophthalmology Annual Meeting and Alumni Reunion.

Alumni Giving Society

OF HARVARD OPHTHALMOLOGY @ MASS. EYE AND EAR

Join your colleagues in the Alumni Giving Society

Help us ensure that the future leaders of ophthalmology receive the same world-class education that you did: join the Alumni Giving Society of Harvard Ophthalmology @ Mass. Eye and Ear. Your contribution enables us to continue our tradition of excellence in our three mission areas of patient care, research, and education.

Please consider a gift

Julie Dutcher | Mass. Eye and Ear Development Office.
E: julie_dutcher@meei.harvard.edu | T: 617-573-3350
MassEyeAndEar.org/donations

Systemic therapy outperforms intraocular implant for treating uveitis

For patients with uveitis, systemic therapy consisting of corticosteroids and immunosuppressants preserved vision better, and had fewer adverse outcomes, than a long-lasting corticosteroid intraocular implant, according to a clinical trial funded by the National Eye Institute (NEI). These findings were published in *JAMA* on May 16, 2017.

"These results are meaningful, not only for the field of ophthalmology, but also for the broader field of medicine because inflammatory diseases affect many different organs," said Writing Committee Chair **John H. Kempen, MD, PhD**, Director of Epidemiology for Ophthalmology and a member of the Uveitis and Ocular Immulology Service at Mass. Eye and Ear.

Concerns about potential adverse effects of systemic corticosteroid and immunosuppressive therapy drove the development of an intraocular implant to treat uveitis locally. As a result, the Multicenter Uveitis Steroid Treatment (MUST) trial, was undertaken to evaluate whether the implant treatment was an improvement over systemic therapy for management of uveitis.

The 19th publication to come out of the MUST Trial, these findings offer guidance to clinicians and their patients in making informed decisions about uveitis treatment. Specifically, there is good evidence that systemic therapy would be the first choice of treatment for the average patient with intermediate, posterior, or panuveitis.

“By following expert panel guidelines, we were able to avoid most of the systemic adverse outcomes that people worry about with systemic corticosteroid and immunosuppressive therapy,” said Dr. Kempen. "The implant may have a role in treating patients where systemic therapy fails to control inflammation or when patients cannot tolerate the oral medications. The duration of control of inflammation following implant treatment was much longer than expected (~5 years)."

Illustration by Mark Witton

An ancient history: Tracing the “superbugs” from Paleozoic origins to the hospital

Leading hospital “superbugs,” known as the enterococci, arose from an ancestor that dates back 450 million years—about the time when animals were first crawling onto land, according to a study published in *Cell* on May 10, 2017.

To better understand why, among the vast diversity of gut flora, enterococci are so well adapted to the modern hospital environment, **Michael Gilmore, PhD**, Director of the Harvard Ophthalmology Infectious Disease Institute, analyzed the genomes and behaviors of enterococci. Working with colleagues from Mass. Eye and Ear, the Harvard-wide Program on Antibiotic Resistance, and the Broad Institute of MIT and Harvard, Dr. Gilmore found that life on land would have selected for the precise traits that now allow pathogenic enterococci to survive in the modern hospital. This is because enterococci are naturally resistant to dryness, starvation, disinfectants, and many antibiotics.

Armed with this new knowledge, researchers may be able to develop and design new kinds of antibiotics and disinfectants, specifically ones that eliminate enterococci and remove them as threats to hospitalized patients.

LEARN MORE: eye.hms.harvard.edu

NO MORE PLAYING PIRATE?

David Hunter, MD, PhD, and **Jason Mantagos, MD**, Boston Children’s Hospital, discuss a promising treatment for amblyopia that makes use of a virtual reality headset instead of an eye patch.

theophthalmologist.com/issues/0617/no-more-playing-pirate/

NEURONS THAT REGENERATE, NEURONS THAT DIE

The optic nerve is vital for vision, and damage to this critical structure can lead to severe and irreversible loss of vision. Boston Children’s Hospital researchers—**Fengfeng Bei, PhD**, and **Zhigang He, PhD, BM**—found that a transcription factor, called *Sox11*, can help certain neurons regenerate, while simultaneously killing others. Unraveling exactly which signals can help or hinder axon regeneration may eventually lead to new and precise treatment strategies for restoring vision or repairing injury.

doi.org/10.1016/j.neuron.2017.05.035

Gene editing with CRISPR prevents retinal angiogenesis in preclinical model

Hetian Lei, PhD, along with a team of researchers from Schepens Eye Research Institute of Massachusetts Eye and Ear used CRISPR-Cas9—a cutting-edge technology that can target and edit certain aspects of the genome—to prevent the development of retinal angiogenesis in mouse models, according to a July 2017 report published online in *Nature Communications*.

Vascular endothelial cell growth factor receptor 2 (VEGFR2) plays an essential role in angiogenesis, a feature of several degenerative eye conditions. To prevent angiogenesis, the researchers used an adeno-associated virus (AAV) to deliver genomic edits to target VEGFR2. A single injection prevented angiogenesis.

"As this genomic editing gains traction in virtually all medical fields, we are cautiously optimistic that this powerful tool may present a novel therapy to prevent vision loss in eye disease marked by intraocular pathological angiogenesis," said Dr. Lei. "While further study is needed to determine safety and efficacy of this approach, our work shows that the CRISPR-Cas9 system is a precise and efficient tool with the potential to treat angiogenesis-associated diseases."

Lubricin: A promising treatment for patients with dry eye

A new ophthalmic treatment derived from lubricin—a unique anti-adhesive, anti-friction, and anti-inflammatory protein found in the body—may soon be made available for ophthalmic indications worldwide, which is promising news for the tens of millions of people with dry eye. Known as the "non-stick molecule," lubricin binds to tissue surfaces and protects them from friction-induced wear and damage.

David Sullivan, MS, PhD, Schepens Eye Research Institute of Mass. Eye and Ear, and colleagues first discovered the existence of lubricin on the ocular surface and identified lubricin's role in preventing corneal and conjunctival epitheliopathies in dry eye.

Based on these findings, Dr. Sullivan and collaborators developed a recombinant human lubricin, which significantly decreased the signs and symptoms of dry eye in a Phase II clinical trial.

Image credit: Lubris Biopharma

BIRDS-EYE PERSPECTIVE

Connie Cepko, PhD, Bullard Professor of Genetics and Neuroscience at HMS, and **Susana da Silva**, a postdoctoral fellow in the Cepko laboratory, gained insights into fovea development by studying chickens. They found that the high-acuity area in chick eyes requires suppression of retinoic acid, a derivative of vitamin A known to play many important roles in embryonic development.

hms.harvard.edu/news/birds-eye-perspective

OPTIC NERVE REGENERATION: FROM IMPOSSIBLE TO PLAUSIBLE

According to **Larry Benowitz, PhD**, Professor of Ophthalmology and Neurosurgery at Harvard Medical School, regenerating the optic nerve not only is possible, but also could transform the clinical practice of ophthalmology in as few as 15 years.

eye.hms.harvard.edu/news/benowitzresearch

THE BLIND CAN SEE

Joan W. Miller, MD, weighs in on advances in stem cells, gene therapy, and devices that can beam images directly into the brain—offering new hope to those without sight.

protomag.com/articles/the-blind-can-see

Seeing and Being Seen

Art advocacy offers new perspective on what it means to "see"

Bright bursts of color and complex patterns entice staff and visitors to pause and view the artwork displayed throughout the corridors of Schepens Eye Research Institute of Mass. Eye and Ear. Upstairs, a richly textured quilt of animals begs to be touched. On loan from the Perkins School for the Blind, this collection of multisensory artwork reflects the reason why scientific endeavors take place within—a reminder that people are most important in the quest to cure blinding diseases.

"I hope that by looking at this beautiful artwork, researchers are reminded of the many children who benefit from their important research."

Corinne Grousbeck
Chair, Board of Trustees
Perkins School for the Blind

Impressed by the students' extraordinary talents, **David Sullivan, MS, PhD**, Schepens Eye Research Institute of Mass. Eye and Ear, organized this art display, as well as a tour and reception on April 11, 2017. "Experiencing this art is an opportunity to pause and reflect on the people we aim to help with our research," he said.

Dispelling misconceptions that sighted people have of the blind is a long-standing goal at Perkins. In fact, individuals who are blind are more challenged by the lack of opportunities and resources afforded to them than by blindness itself.

"As a parent of a son who was born blind and went to the Perkins School, art was one of the ways we saw joy and a special skill come out of our child," said David Power, President and CEO of Perkins.

During the reception, Perkins art teacher Rocky Tomascoff discussed the importance of advocating for student artists. Neuroscientist **Lotfi Merabet, OD, PhD**, of Schepens Eye Research Institute of Mass. Eye and Ear, presented his research that confirmed that people who are blind "can and do see." Leaders from both Perkins and Mass. Eye and Ear spoke about the importance of their ongoing institutional partnership.

"Our partnership with Perkins is extremely important because it guides the work we do in the laboratory and connects it back to the community we strive to help," said **Joan W. Miller, MD,** Chair of Harvard Ophthalmology and Chief of Ophthalmology at Mass. Eye and Ear and Mass General.

EVIDENCE OF NEUROPLASTICTY DURING EARLY BLINDNESS

Brains of individuals with early blindness make new connections in the absence of vision, according to a study published in *PLOS ONE* on March 2, 2017. Researchers **Corinna M. Bauer, PhD**, and **Lotfi Merabet, OD, PhD,** Schepens Eye Research Institute of Mass. Eye and Ear, investigated structural, functional, and anatomical changes in brains, and found that neuroplasticity results in enhanced compensatory abilities, such as a heightened sense of hearing, smell, and touch, as well as cognitive functions such as memory and language.

Enhancing Patient Care

Mass. Eye and Ear expands to Malden, offers newly FDA-approved procedures, and upgrades technology

Vitreoretinal specialist John Miller, MD, and retina fellow Athanasios Papakostas, MD, perform surgery with the new 3D NGENUITY technology at Mass. Eye and Ear

Clinical practice expands to Malden

Mass. Eye and Ear, Malden—a new outpatient office offering general eye care, cataract surgery, and eye plastic surgery—opened in March 2017. Medical Director **Michael J. Price, MD**, oversees the practice and is joined by oculoplastics specialist **Grace Lee, MD**. Located at 578 Main Street, Mass. Eye and Ear, Malden features an optical shop and free, handicap accessible parking.

Among the few hospitals in New England to offer SMILE, corneal inlays, and corneal crosslinking

Mass. Eye and Ear offers three newly FDA-approved procedures for patients with keratoconus or refractive errors:

SMILE, or small incision lenticule extraction, is an alternative to LASIK. In this vision correction procedure, a surgeon creates a corneal pocket instead of a flap. As a result, SMILE is considered a gentler procedure than LASIK and can be used in patients with dry eyes. **Kathryn Hatch, MD**, offers this procedure at Mass. Eye and Ear, Waltham—the first practice in New England with a VisuMax laser.

Corneal inlays, such as the KAMRA and Raindrop Near Vision Inlay, are small optical devices that are placed in the central part of the cornea to reduce the need for reading glasses. The procedure can be performed on its own or with LASIK.

Corneal crosslinking is a procedure that uses liquid riboflavin and a controlled application of ultraviolet light to stabilize the cornea for keratoconus treatment. Physicians offering this procedure include **Kathryn Hatch, MD; Roberto Pineda II, MD**; **Joseph Ciolino, MD**; and **Christian Song, MD**.

First medical center in New England to offer advanced 3D retinal surgery with NGENUITY

Available at Mass. Eye and Ear's main Boston and Longwood campuses, NGENUITY is a novel technology that allows surgeons to operate while looking at a large, high-definition, 3D screen instead of through a small microscope. Its many benefits include:

Exceptional visualization
Surgeons can now see the eye with more detail and clarity than ever before. The new system allows surgeons to magnify an image while maintaining a wide field of view and provides exceptional resolution, color contrast, and depth perception that is ideal for precise surgical maneuvers.

Improved teamwork in the operating room
Everyone in the operating room can watch surgery in real time. "This helps surgeons work more smoothly as a team to provide the best possible patient care," says **John Miller, MD**, retina surgeon and Director of Retinal Imaging at Mass. Eye and Ear.

Reduced fatigue for surgeons
With retina surgeries lasting anywhere from 30 minutes to three hours, the ergonomic "heads-up" design of NGENUITY reduces fatigue and degenerative back and neck disease in surgeons. "This may translate to safer surgeries for patients, and longer operating careers for surgeons," says **Yoshihiro Yonekawa, MD,** a pediatric and adult retina surgeon at Mass. Eye and Ear and Boston Children's Hospital.

Minimized light exposure for patients
Retina surgeries can be completed at lower light levels, potentially minimizing toxic light exposure to patients' eyes.

Grants, awards, and honors

American Academy of Optometry

Eli Peli, MSc, OD, FAAO, was selected to receive the Charles F. Prentice Medal Award, which is considered the Academy's most prestigious award for achievement in research. Dr. Peli is Professor of Ophthalmology at Harvard Medical School and Co-director of the Mobility Enhancement and Vision Rehabilitation Center of Excellence. His research spans the interface between engineering and ophthalmic/vision research. Dr. Peli will present a special lecture at the AAO annual meeting in October 2017, highlighting his most significant scientific contributions.

American Glaucoma Society

Milica Margeta, MD, PhD, a K12 scholar in the Harvard-Vision Clinical Scientist Development Program at Mass. Eye and Ear, received a $40,000 Young Clinician Scientist Grant to characterize microglia in human eye autopsy tissue (glaucomatous retinas and optic nerves).

American Optometric Association

David A. Sullivan, MS, PhD, Schepens Eye Research Institute of Mass. Eye and Ear, received the 2017 Dr. Donald R. Korb Award, a prestigious award honoring innovation and leadership in the field of contact lenses and anterior segment disease.

Association for Research in Vision and Ophthalmology

Reza Dana, MD, MSc, MPH, FARVO, Mass. Eye and Ear, was selected as the recipient of the 2018 ARVO Friedenwald Award and will present the named lecture at the 2018 ARVO Annual Meeting, held April 29 - May 3 in Honolulu, Hawaii. Dr. Dana is an internationally recognized leader in the field of corneal immunology and transplantation biology.

BrightFocus Foundation

Tobias Elze, PhD, Schepens Eye Research Institute of Mass. Eye and Ear, received $150,000 to conduct a computational investigation of glaucoma progression.

Fight for Sight

Eleftherios Paschalis Ilios, PhD, Mass. Eye and Ear, received $22,500 over one year for his project, "Novel pre-Descemet's keratoprosthesis for the treatment of corneal blindness."

Juvenile Diabetes Research Foundation

Lloyd Paul Aiello, MD, PhD, Director of the Beetham Eye Institute at Joslin Diabetes Center, received the 2017 JDRF Mary Tyler Moore and S. Robert Levine Excellence in Clinical Research Award for Type 1 Diabetes Research during the JDRF One Conference in Chicago, IL. Dr. Aiello was the inaugural chair of the Diabetic Retinopathy Clinical Research Network (DRCR.net). Through translational research and clinical trials, he aims to elucidate the underlying biochemistry and molecular mechanisms of diabetic retinopathy and other related retinopathies, and develop novel therapeutic interventions.

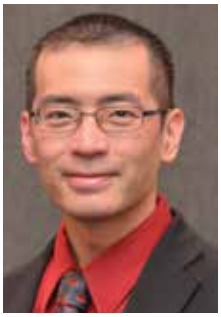
Knights Templar Eye Foundation

Two research fellows received Pediatric Ophthalmology Career Starter Grants. These grants provide support for research conducted by promising clinical and basic investigators who are focused on the prevention and cure of potentially blinding diseases in infants and children. **Chi-Hsiu Liu, PhD,** a postdoctoral researcher in the laboratory of Jing Chen, PhD, at Boston Children's Hospital since 2013, received $65,000 to investigate the role of microRNA-145 in retinopathy of prematurity. **Nachiket Pendse, PhD**, a postdoctoral researcher in the Harvard Ophthalmology Ocular Genomics Institute (OGI) since 2016, received $65,000 to support the use of CRISPR/cas gene editing to investigate USH2A-associated inherited retinal degenerations. Dr. Pendse's mentor, **Eric Pierce, MD, PhD**, directs the OGI and the Inherited Retinal Disorders Service at Mass. Eye and Ear.

Macula Society

Deeba Husain, MD, and **Leo Kim, MD, PhD**, both of Mass. Eye and Ear, were accepted as 2017 members of the Macula Society. Founded in 1977, the Macula Society is a forum for new research in retinal vascular and macular diseases. Membership is by application. Acceptance criteria includes extensive contribution to retinal literature. **Jennifer Sun, MD, MPH**, Joslin Diabetes Center, received an International Travel Grant.

Mass. Eye and Ear



David Wu, MD, PhD, a vitreoretinal surgeon and clinician scientist in the Mass. Eye and Ear Retina Service, was selected as the first recipient of the Iraty Award for Research in Retinal Diseases. Established in 2017 by an anonymous donor to Mass. Eye and Ear, the Iraty Award honors the life and work of Dr. Charles Schepens. This $100,000 prize is given to a Harvard Ophthalmology faculty member working in retinal diseases. Dr. Wu holds an NIH/NEI K08 award and is collaborating with Harvard Ophthalmology researcher **Constance Cepko, PhD**, to use advanced molecular biology tools to understand the importance of intercellular relationships in retinal disease in hopes of identifying new therapeutic pathways. He also received a 2017 Eleanor and Miles Shore 50th Anniversary Shore Fellowship.

National Institutes of Health

The NIH renewed Schepens Eye Research Institute of Mass. Eye and Ear's P30 core vision grant (PI: **Pablo Argüeso, PhD**) in the amount of $2 million over five years. This critical funding supports four shared core resources: Animal Resource, Flow Cytometry, Laboratory Computer Applications, and Morphology. A separate NIH P30 grant for Mass. Eye and Ear (PI: **Janey Wiggs, MD, PhD**) supports three additional cores: Genomics, Biobank, and Biostatistics. These two NIH-funded cores provide complementary, but very different, services to researchers and are used by all members of the department.

Joseph Ciolino, MD, Mass. Eye and Ear, received an R01 for nearly $2 million over four years to investigate antibiotic-eluting contact lenses for the treatment of bacterial keratitis.

Ula Jurkunas, MD, Mass. Eye and Ear, received more than $3.43 million over four years to study the safety and feasibility of cultivated autologous limbal epithelial cell (CALEC) transplantation in the treatment of limbal stem cell deficiency. This grant includes work performed at Mass. Eye and Ear, Dana-Farber Cancer Institute, and the Jaeb Center for Health Research in Tampa, Florida.

Prevent Blindness

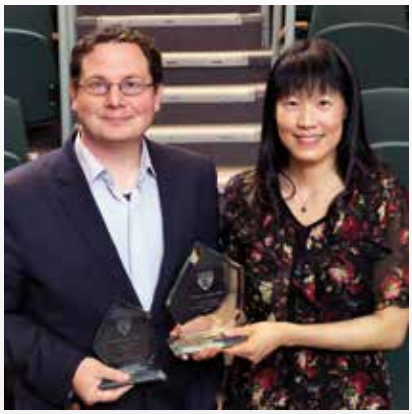
Brian Song, MD, MPH, Mass. Eye and Ear, received a 2017 Joanne Angle Investigator Award, which includes $25,000 to support his project, "Glaucoma detection in diabetes teleretinal programs."

Research to Prevent Blindness

As the recipient of a 2017 Special Scholars Award, **Jing Chen, PhD**, Boston Children's Hospital, received $25,000 over two years to develop a novel genetic mouse model of dry age-related macular degeneration (AMD). Her project will advance understanding about how dry AMD develops, and ultimately improve the early diagnosis, treatment, and prevention of AMD. "This well-deserved award provides an important boost to Dr. Chen's current research, which promises to provide insight into new therapies for dry AMD," said **David Hunter, MD, PhD**, Ophthalmologist-in-Chief at Boston Children's Hospital.

Research to Prevent Blindness/Reader's Digest Partners for Sight Foundation/Consumer Technology Association Foundation

As the recipient of a 2017 Innovations in Technology Low Vision Research Award, **Gang Luo, PhD,** Schepens Eye Research Institute of Mass. Eye and Ear, received $100,000 over two years to support the development of a new vision assistance application to help the blind navigate the physical world. This will be the third vision assistance app developed by Dr. Luo's laboratory.



Mentors extraordinaire: Teresa Chen and Kip Connor

Harvard established the Excellence in Mentoring Awards to recognize the value of quality mentoring relationships and the impact they have on professional development and career advancement. **Teresa Chen, MD**, and **Kip Connor, PhD**, were two among 18 Harvard faculty members who received 2017 awards, a distinct honor given the breadth of talent among Harvard's 11,300+ faculty members. Of note, 10 percent of the 90 mentoring awards distributed between 2013 and 2017 have been awarded to the Department of Ophthalmology.

EXCERPTS FROM NOMINATION LETTERS

Teresa Chen, MD

A. Clifford Barger Excellence in Mentoring Award

> "... a principled, caring, and utterly fearless advocate"
>
> "She holds herself to exceptionally high standards..."
>
> "Meticulous about details, she taught me how to be rigorous in my approach."
>
> "Dr. Chen sparked my passion for translational research... and gave me room to grow intellectually and professionally."

Kip Connor, PhD

Young Mentor Award

> "He encourages young researchers to take full ownership of their projects, while still providing sufficient direction so as not to feel lost when obstacles arise."
>
> "Dr. Connor gives me the confidence to believe in myself and to trust my scientific ability."
>
> "....he connects me with opportunities to advance my career and enhance my interests."

"In this digital era Dr. Luo's innovative work helps level the playing field for people with low vision who live in a vision-dominated world," said **Joan W. Miller, MD,** Chief of Ophthalmology at Mass. Eye and Ear and Massachusetts General Hospital. "These tools and technologies improve quality of life by enabling people with low vision to live more independently."

Schepens Eye Research Institute of Mass. Eye and Ear
Jaeh-Hyun Jung, PhD, received the Alice J. Adler Fellowship.

The Ophthalmologist
Yoshihiro Yonekawa, MD, a pediatric and adult retina specialist at Mass. Eye and Ear and Boston Children's Hospital, was voted as one of the top-50 rising stars in ophthalmology, according to *The Ophthalmologist*'s "Power List 2017." Two Harvard Ophthalmology alumni also made the list: **Netan Choudhry, MD,** class of 2011, and **Bobeck Modjtahedi, MD**, class of 2015.

Vit-Buckle Society
Dean Eliott, MD, Associate Director of the Retina Service and Director of the Vitreoretinal Surgery Fellowship at Mass. Eye and Ear, received the 2017 Lifetime Mentor Award at the Vit-Buckle Society annual meeting, held April 6-8, 2017 in Las Vegas.

Women in Ophthalmology
Carolyn Kloek, MD, Program Director for the Harvard Ophthalmology Residency Training Program, was selected for the 2017 Women in Ophthalmology Educator Award. Dr. Kloek develops innovative tools, technologies, and training methods that raise the standards of ophthalmic education, both within the department and around the world. Among her recent contributions, she implemented a new surgical curriculum as well as a six-hour experiential workshop to teach ophthalmology residents how to deliver difficult news to patients.

Find more news online.
eye.hms.harvard.edu

Trainee Awards and Honors

Abelson Family Fellow in Cornea at Mass. Eye and Ear (2017-18)
Reena Gupta, MD, Cornea Fellow at Mass. Eye and Ear

Alcon Research Scholar
Rani N. Al Karmi, MD, FRCS(c), MEd, Cornea Research and Clinical Fellow at Mass. Eye and Ear

Cornea Center of Excellence Best Resident Research Award in Cornea and Refractive Surgery
Zeba Syed, MD, Harvard Ophthalmology Resident, class of 2017

Gragoudas-Folkman Award
Mohammad Dahrouj, MD, PhD, Harvard Ophthalmology Resident, class of 2019

Gragoudas Prize for Best Basic and Translational Paper by a Mass. Eye and Ear Trainee
Jonathan Lam, MD, and **Daniel Oh, MD** (co-first authors) "Identification of RUNX1 as a mediator of aberrant retinal angiogenesis." (*Diabetes*, 2017)

Gragoudas Prize for Best Clinical Paper by a Mass. Eye and Ear Trainee
Inês Laíns, MD, Retina Research Fellow at Mass. Eye and Ear "Structural changes associated with delayed dark adaptation in age-related macular degeneration." (*Ophthalmology*, 2017)

Harvard Ophthalmology Annual Poster Contest Winners

Clinical Research

Tie for First Place - **Edward Ryan Collantes, MD**, Research Fellow at Mass. Eye and Ear, mentored by **Janey Wiggs, MD, PhD:** "A novel nonstop MYOC mutation in a large Filipino family with juvenile-onset open-angle glaucoma."

Tie for First Place - **Inês Laíns, MD**, Research Fellow at Mass. Eye and Ear, mentored by **Joan W. Miller, MD**, and **Deeba Husain, MD:** "Human plasma metabolomic changes associated with age-related macular degeneration."

Basic and Translational Research

First Place - **Sarah Wassmer, PhD**, Research Fellow, Grousbeck Gene Therapy Center at Mass. Eye and Ear, mentored by **Luk Vandenberge, PhD**, and **Eric Pierce, MD, PhD:** "Exosome-associated AAV2 vector mediates robust gene delivery into the murine retina upon intravitreal injection."

Second Place - **Shi Song Rong, MD, PhD,** Research Fellow, Mass. Eye and Ear, mentored by **Janey Wiggs, MD, PhD**: "Evaluation of ATXN2 intermediate polyglutamine expansions and rare variants in primary open-angle glaucoma."

Robert Brockhurst Academic Development Awards
Miin (Irene) Roh, MD, MPH, MSc, and **Esther Kim, MD**, Vitreoretinal Surgery Clinical Fellows at Mass. Eye and Ear

Thomas J. Madden Fellow in Retina at Mass. Eye and Ear (2017-18)
Patrick Oellers, MD, Vitreoretinal Surgery Fellow at Mass. Eye and Ear

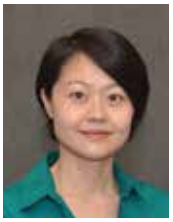
Personnel Updates

RECRUITS

Mary Beth Aronow, MD, Assistant Professor of Ophthalmology at Johns Hopkins University and Assistant Director of the Wilmer Eye Institute Retina Fellowship Program, will join the department in September 2017 as a member of the Retina Service at Mass. Eye and Ear. Dr. Aronow specializes in medical retina and ocular oncology. A graduate of Yale University School of Medicine, Dr. Aronow completed her ophthalmology residency and ophthalmic oncology fellowship at Cole Eye Institute, Cleveland Clinic, followed by a medical retina fellowship at the National Eye Institute.

Emma Davies, MD, joined the Cornea and Refractive Surgery Service in July 2017 after completing subspecialty training in cornea, refractive surgery, and external diseases at Mass. Eye and Ear. Dr. Davies earned her medical degree from the University of Pennsylvania and completed her ophthalmology residency training at Harvard.

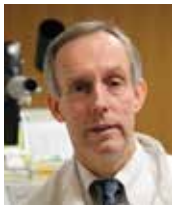
Gabriel Fickett, OD, joined Mass. Eye and Ear as a member of the Optometry and Contact Lens Service in July 2017. Dr. Fickett earned his doctorate in optometry from the Southern College of Optometry and completed the one-year Optometry Residency Training Program at Mass. Eye and Ear.



Following completion of a cornea, refractive surgery, and external diseases clinical fellowship at Mass. Eye and Ear, **Jia Yin, MD, PhD**, joined the department's Harvard-Vision Clinical Scientist Development Program, which is funded by the NIH/NEI. In addition to seeing patients through the Mass. Eye and Ear Cornea Service and teaching trainees, Dr. Yin will research the neural regulation of angiogenesis under the mentorship of **Reza Dana, MD, MSc**, **MPH**, and **Patricia A. D'Amore, PhD, MBA.**

APPOINTMENTS/PROMOTIONS

Having retired as Global Head of Ophthalmology Research at the Novartis Institutes for Biomedical Research, **Thaddeus Dryja, MD,** returns to Mass. Eye and Ear part-time, sharing coverage of the David G. Cogan Laboratory of Ophthalmic Pathology at Mass. Eye and Ear with **Frederick Jakobiec, MD, DSc**. He also will teach Ophthalmology and Pathology trainees, continue some research projects in collaboration with Novartis, and represent Mass. Eye and Ear at the MGH Pathology QA Committee.



Promoted to Assistant Professor of Ophthalmology, **Timothy J. Murtha, MD**, provides quality eye care to patients with diabetic-related eye complications at the Beetham Eye Institute at the Joslin Diabetes Center through a clinical alliance with Mass. Eye and Ear. As a member of the Section on Vascular Cell Biology at Joslin, he also teaches and conducts clinical research, including imaging and outcomes studies, related to diabetic eye diseases.

Promoted to Investigator at Schepens Eye Research Institute of Mass. Eye and Ear, **Shivakumar Vasanth, PhD**, investigates the molecular mechanisms of Fuchs' endothelial corneal dystrophy in the laboratory of **Ula Jurkunas, MD**. His research projects include: elucidating the roles of DNA damage and repair mechanisms in Fuchs' and understanding the molecular mechanisms that explain female predominance in Fuchs'.

Xiaoqing Guo, PhD, was promoted to Investigator at Schepens Eye Research Institute of Mass. Eye and Ear, where she works under the guidance of **James Zieske, PhD**. Dr. Guo investigates the mechanisms of corneal wound healing to develop new strategies for healing wounds without scarring. Having received a NIH/NEI R21 grant in 2015, she is now developing an *in vivo* model to mimic human endothelial replacement therapy.

LEADERSHIP APPOINTMENTS

Harvard Ophthalmology

See page 7 for appointments in education

National

Patricia D'Amore, PhD, MBA, President-elect of the Association of University Professors in Ophthalmology Research Directors Council

Eli Peli, OD, MSc, Board of Directors, ITN America

Joan W. Miller, MD, Board of Trustees, Association of University Professors of Ophthalmology

Jeremy Wolfe, PhD, President of the Federation of Associations of Behavioral and Brain Sciences

DEPARTURES

Andrea Cruzat, MD, a member of the Boston Keratoprosthesis team at Mass. Eye and Ear since 2012, moved to New Zealand.

Matthew Goodman, OD, a member of the Optometry and Contact Lens Service at Mass. Eye and Ear since 2014, accepted an optometry position at a private practice in Texas.

Angela Turalba, MD, left Mass. Eye and Ear in August to pursue the role of Chief of Ophthalmology at Atrius Health. A Harvard Ophthalmology/Mass. Eye and Ear alumna (residency class '08, glaucoma fellowship '10) and former Chief Resident (2008-09), Dr. Turalba was a full-time member of the Glaucoma Service since 2010 and a key leader in Mass. Eye and Ear/Harvard Department of Ophthalmology.

In July 2017, **Peter Veldman, MD**, became the Ophthalmology Residency Program Director and Vice-Chair for Education at University of Chicago Department of Ophthalmology and Visual Science. Dr. Veldman is a Harvard Ophthalmology alumnus (residency class '12) and former Chief Resident (2012-13). He was a member of the Mass. Eye and Ear Cornea Service and served as Associate Director of the Harvard Ophthalmology Residency Training Program since 2014.

In Memoriam

Eliot L. Berson, MD, the William F. Chatlos Professor of Ophthalmology at Harvard Medical School, passed away March 19, 2017 at the age of 79. He was a seminal figure in the field of retinal degenerations, whose discoveries and leadership laid the foundations for understanding retinitis pigmentosa and developing therapies for these disorders. Throughout his career, he partnered with the Foundation Fighting Blindness for the generous financial support that enabled his work and led to remarkable advances.

In the 1960s, Dr. Berson discovered that electroretinography (ERG) could detect photoreceptor dysfunction years to a decade before vision starts to deteriorate in retinitis pigmentosa. Since then, ERG has been used routinely to diagnose this condition and to estimate visual prognoses. In the early 1990s, Dr. Berson and his colleague Thaddeus Dryja, MD, discovered the first gene defects associated with retinitis pigmentosa. A member of the Mass. Eye and Ear medical staff since 1968, he directed the Mass. Eye and Ear Electroretinography Service from 1970 to 2014 and was the founding Director of the Berman-Gund Laboratory for the Study of Retinal Degenerations at Mass. Eye and Ear from 1974 to 2014.

Alumni Corner

Bonnie An Henderson, MD, residency class of 1998 and former Director of the Comprehensive Ophthalmology and Cataract Consultation Service at Mass. Eye and Ear, commenced her term as President of the American Society of Cataract and Refractive Surgery at the 2017 ASCRS annual meeting, held May 6-9 in Los Angeles. Dr. Henderson is a partner at Ophthalmic Consultants of Boston and a Clinical Professor at Tufts University School of Medicine.

Rajesh Rao, MD, residency class of 2011, received a 2017 American Society of Clinical Investigation Young Physician-Scientist Award and presented his work on the first use of precision medicine for lymphoma of the eye at the April 2017 meeting. This award recognizes young clinician scientists who have made significant contributions to research early in their careers. Ophthalmologists and vision scientists rarely receive this award compared to other medical or surgical specialties. Dr. Rao is Assistant Professor of Ophthalmology and Visual Sciences, and Pathology at University of Michigan Kellogg Eye Center.

Ryoji Yanai, MD, a clinician scientist at Yamaguchi University in Japan, was elected to Corresponding Membership in The Retina Society. Dr. Yanai completed a retina research fellowship at Mass. Eye and Ear in 2013.

Glenn Yiu, MD, PhD, residency class 2014, received one of two 2017 International Travel Grants from the Macula Society. A vitreoretinal specialist at the UC Davis Eye Center, Dr. Yiu conducts translational research on age-related macular degeneration and other retinal diseases. His focus includes advanced ocular imaging technologies, gene editing, and drug delivery through nanotherapeutics.

eye Witness

ISSUE 34 • August 2017

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eye Witness is published three times per year by the Harvard Medical School Department of Ophthalmology and is intended for faculty, trainees, staff, alumni, affiliates, partners, and friends. Harvard Ophthalmology strives to provide:

- Best practices in clinical care and attention to the patient experience
- Transformational research that eliminates blinding diseases of the eye, orbit, and brain
- World-class training of future leaders

ERRATUM: Contributors to March 2017 *eye Witness* also included Cindy Windhol, PhD, and Christina Marko, PhD.

Upcoming Events

Harvard Ophthalmology offers an array of courses, conferences, workshops, and seminars, designed to inspire you and ignite your passion for learning—whether you are a trainee, ophthalmologist, vision researcher, or friend of our community. Look for the CME symbol for events offering continuing medical education.

Browse all upcoming events online

eye.hms.harvard.edu/calendar

FEATURED GRAND ROUNDS

Thursdays, 8:00 - 9:00 am
Mass. Eye and Ear, Meltzer Auditorium, simulcast to Karp 11 Conference Room at Boston Children's Hospital; Joslin Diabetes Center; and Mass. Eye and Ear, Longwood

CME **New England Journal of Medicine Clinicopathologic Conference**
September 28

CME **Quality, Humanism, and Professionalism Grand Rounds**
October 26
"A clinician's guide to faulty reasoning"
Donald Redelmeier, MD, Sunnybrook Research Institute, University of Toronto

LECTURES

16th Annual Frederick A. Jakobiec Lecture in Ophthalmology
September 11 | 1:00 - 2:00 pm
Mass. Eye and Ear, Meltzer Auditorium
Richard Lisman, MD, Director of Ophthalmic Plastic Surgery-New York University Medical Center and Institute of Reconstructive Plastic Surgery—"Evaluating upper eyelid reconstructions: Why are they still a low yield after 50 years of modifications?"

Boston Children's Hospital Visiting Professor Lecture in Pediatric Ophthalmology
September 27 | 8:30 - 9:30 am
Boston Children's Hospital Karp Research Building, 11th Floor Conference Room (1 Blackfan Circle)
Yoshikazu Imanishi, PhD, Associate Professor of Pharmacology, Case Western Reserve University School of Medicine—"Illuminating the process of rod and cone photoreceptor outer segment morphogenesis"

Boston Ophthalmology International Visiting Professor in Cornea and External Eye Diseases Lecture
October 27 | 5:30 - 6:30 pm
Mass. Eye and Ear, Meltzer Auditorium
Béatrice Cochener, MD, PhD, Professor and Chair of Ophthalmology, University Hospital of Brest, France; President, European Society of Cataract & Refractive Surgeons

Boston Children's Hospital Visiting Professor Lecture in Pediatric Ophthalmology
November 1 | 7:30 - 9:30 am
Boston Children's Hospital Karp Research Building, 11th Floor Conference Room (1 Blackfan Circle)
Gerald W. Zaidman, MD, Professor of Clinical Ophthalmology, Director of the Cornea Service and Vice-Chairman and Director of the Department of Ophthalmology at the New York Medical College, Westchester Medical Center

Cornea Center of Excellence Visiting Professor Lecture
November 30 | 5:30 - 6:30 pm
Mass. Eye and Ear, Meltzer Auditorium
Bennie H. Jeng, MD, Chair of Ophthalmology & Visual Sciences, University of Maryland School of Medicine

Paul A. Chandler Visiting Professor Lectures
December 8, 2017 | 3:45 pm
December 9, 2017 | 11:00 am
Mass. Eye and Ear, Meltzer Auditorium
Jurij R. Bilyk, MD, FACS, Oculoplastics and Orbital Surgery Service, Wills Eye Hospital; Professor of Ophthalmology, Thomas Jefferson University Hospital

RECEPTIONS

Mass. Eye and Ear Retina Service Reception honoring Charles L. Schepens
October 4 | 6:00 - 7:30 pm
(Invitation only)

Harvard Ophthalmology and Mass. Eye and Ear Alumni Reception at the American Academy of Ophthalmology Annual Meeting
November 11 | 6:00 - 9:00 pm
Court of Two Sisters, New Orleans

SAVE THE DATE

Harvard Ophthalmology Annual Meeting and Alumni Reunion
June 8-9, 2018 | Boston

30TH BIENNIAL
CORNEA CONFERENCE

October 12-14 | Boston

Bringing together basic and clinical researchers in the field of cornea and ocular surface, the Biennial Cornea Conference kicks off on Thursday evening with a poster session hosted by Boston University School of Medicine in the Hiebert Lounge. On Friday, hear scientific and clinical presentations related to ocular surface immunology and microbiology; endothelial cell biology; and innovation and new techniques. **Reza Dana, MD, MPH, MSc**, will present the J. Wayne Streilein Lecture. The day concludes with a cocktail reception and dinner at the Liberty Hotel.

Join us October 14 for a celebration of **Claes Dohlman, MD, PhD**, and his 60 years of contributions to corneal science and education. Saturday's program includes talks from former Dohlman Fellows and the Claes H. Dohlman Lecture, presented by **Kazuo Tsubota, MD, PhD,** Keio University School of Medicine.

Register for the 30th Biennial Cornea Conference.

eye.hms.harvard.edu/cornea/conference

15th International SPECTRALIS® Symposium
October 13-14 | State Room, Boston

Attended by leaders in ophthalmic research, diagnosis, and patient care, the ISS offers a dynamic forum for open exchange of new and emerging concepts in imaging and treatment of retinal disease, glaucoma, and optic neuropathies.

Meeting Chair: Joan W. Miller, MD
Program Committee: Deeba Husain, MD; John Miller, MD; and Joan W. Miller, MD.

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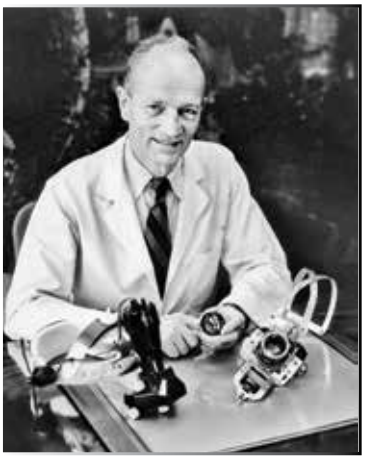
Coming up...

Mass. Eye and Ear Retina Service Reception

October 4, 2017



honoring Charles L. Schepens

Details on page 4.

30th Biennial Cornea Conference

October 12-14, 2017

honoring Claes H. Dohlman

Details on page 19.