eyeWitness

HARVARD MEDICAL SCHOOL
DEPARTMENT OF Ophthalmology

NEWS FROM THE HARVARD MEDICAL SCHOOL DEPARTMENT OF OPHTHALMOLOGY

A Bold Kickoff to the Campaign for Mass. Eye and Ear

Massachusetts Eye and Ear had a lot to celebrate at its Sense-ation! Gala on October 13th. Amid the excitement of great entertainment by The New Kids on the Block and inspiring patient stories, Wycliffe "Wyc" Grousbeck, Mass. Eye and Ear Chairman of the Board, announced a public goal for *Bold Science. Life-Changing Cures. The Campaign for Mass. Eye and Ear* – $200M, making it the largest and most ambitious fundraising effort in Mass. Eye and Ear history.

Bold Science. Life-Changing Cures. is a vital investment in Mass. Eye and Ear's future and its people, programs and places. Funds raised through the campaign will accelerate discoveries, expedite new therapies, and make new cures possible by providing critical resources for HMS Ophthalmology and Otolaryngology research faculty. Funds will go to support the creation of endowed chairs for Mass. Eye and Ear medical and scientific leaders, and ensure that the hospital continues to recruit exceptional talent to its doors. Funds also will be invested in Mass. Eye and Ear infrastructure and facilities, ensuring that Mass. Eye and Ear remains a state-of-the-art research hub and world-class institution.




Campaign co-chairs: (clockwise starting on left) Wyc Grousbeck, Diane Kaneb, Fred Thorne, and Charles de Gunzburg

The initial "quiet phase" of the campaign began four years ago, co-chaired by Mass. Eye and Ear leaders Wyc Grousbeck, Diane Kaneb, Charles de Gunzburg, and Fred Thorne. During this phase of the campaign, many close friends of Mass. Eye and Ear made very generous gifts to advance Mass. Eye and Ear/HMS Ophthalmology programs. In the

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Ophthalmology

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The HMS Department of Ophthalmology strives to provide:

- ✓ Premier clinical care and attention to the patient experience
- ✓ Transformational research that eliminates blinding diseases
- ✓ World-class training of future leaders

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NOTES FROM THE CHAIR

Funding Innovations in Healthcare: A Brave, New World


Joan W. Miller, MD, FARVO

Since our founding in 1871, the HMS Department of Ophthalmology has pursued a singular mission: to bring treatments to patients that will prevent and cure blinding eye diseases. Over the last decade, we have given depth and breadth to this mission in several ways. Our Centers of Excellence and Institutes have given rise to cross-disciplinary and multi-institutional teams that nurture collaboration among basic researchers and clinician scientists. We have put supports in place for clinician scientists who are an integral part of the collaborative culture and who help align clinical challenges with laboratory pursuits. And we have supported a culture of translational and transformational research that has put us in excellent stead to make unprecedented gains in the coming decades.

Despite our success in setting the stage for translational advancements, however, it remains an uphill battle to secure early stage funding needed to move promising ideas from proof of concept into the realm of patient care. New devices and drugs are particularly vulnerable and need significant investment – in some cases, an insurmountable task. Why is this? Federal funding agencies, by design, are concerned with mitigating risk. They are more likely to award grants to investigators who have proven track records rather than support new innovations. Pharmaceutical companies also eschew risk-taking, even as they navigate pipeline deficiencies. Already, there is a palpable diminished interest by Industry for preclinical assets, which is almost always where the technologies owned by academic centers reside. Instead, they often support and/or develop variations or reformulations of already successful products – such as cholesterol-lowering statin drugs – that are more likely to return profits to shareholders. These funding gaps in public and private sector support translate into fewer products and fewer options for our patients.

Bridging this gap is crucial if we are to remain on the frontiers of translational research and speed new advancements into clinical practice. So how do we do this?

Innovation is the key to moving forward. Like other institutions, Mass. Eye and Ear is exploring creative, new funding mechanisms that will augment support from traditional sources – federal grants, industry, foundation funding and philanthropic gifts. Last month, for example, the hospital launched the MEE Summit fund, spearheaded by a committee that includes Mass. Eye and Ear leadership and faculty, Board Chair Wyc Grousbeck and a subset of board members. This innovative program is designed to fund our most translatable, bench-to-bedside ideas with the goal of driving products towards commercialization.

Faculty will submit projects to review committees in each department that will identify projects that are close to proof of concept. An External Advisory Committee made up of outside experts will prioritize projects, and match programs and investigators to companies and investors. In addition, the advisory committee also will help investigators bring projects to a stage that makes them a market-ready investment. Mass. Eye and Ear will seed the Summit Fund with capital from long-term investments and with additional funding from venture philanthropists, some of whom already have made charitable donations. Profits from successful ventures will be reinvested in our research efforts with the goal of getting new treatments and cures to patients faster.

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Tele-ophthalmology: Increasing Access to Patient Care

Second-year Ophthalmology resident Tomasz Stryjewski, MD, takes a retina selfie. Method available in: Haddock LJ, Kim DY, Mukai S. Simple, inexpensive technique for high-quality smartphone fundus photography in human and animal eyes. *Journal of Ophthalmology* 2013; 2013:1–5.

From smartphone selfies to hi-tech ultrawide field imaging—the use of technology in ophthalmology has the potential to change the way ophthalmologists and patients think about routine office visits. Due to the popularity of smartphones and wearable technologies, patients—especially those in remote or underserved areas—have more virtual opportunities than ever to receive ophthalmic consultations. Additionally, eye care providers are gaining the ability to detect and manage blinding eye diseases without the need for traditional face-to-face appointments.

In the HMS Department of Ophthalmology, two ongoing telemedicine programs are already increasing access to care for patients with diabetes: the Joslin Vision Network™ (JVN) Diabetes Eye Care Tele-ophthalmology Program and the Mass. Eye and Ear-MGH Chelsea Tele-ophthalmology Collaboration. The JVN, directed by Lloyd Paul Aiello, MD, PhD, of the Joslin Diabetes Center/Beetham Eye Institute, brings diabetic retinal disease screening to remote and medically underserved areas. The program screens American Indian and Native Alaskan communities in 26 states and inner-city communities in San Francisco and Boston. Improvements in imaging techniques, such as the introduction of ultrawide field retinal imaging, have increased the diagnostic success of these screenings.

The Mass. Eye and Ear-MGH Chelsea collaboration, led by Glaucoma Service Director and Director of Telemedicine Louis Pasquale, MD, of Mass. Eye and Ear, provides a similar service for patients with diabetes. At MGH Chelsea, retinal photographs are sent to physician readers at Mass. Eye and Ear who evaluate the images and communicate their impression and plan to the referring physician. In a study comparing technology-assisted eye exams to comprehensive ophthalmic exams, Dr. Pasquale and colleagues showed that there was moderate-to-substantial agreement between these two approaches.* These findings show solid evidence that telemedicine can be a valuable tool for expanding access to ophthalmic care and using available resources more effectively.

Based on telemedicine's success in screening for diabetic retinopathy, Mass. Eye and Ear glaucoma specialist, Brian Song, MD, and Dr. Pasquale, have teamed up with Paolo Silva, MD, and Dr. Aiello at the Joslin Diabetes Center to investigate ways to incorporate telemedical technology for glaucoma screening by developing protocols and automated computer software to identify high risk patients. With these advances in technology, it may soon be possible for patients to take their own "optic nerve/retinal selfie" with a smartphone before seeing their doctor, who can then determine whether an in-person appointed is needed. This process might encourage, and perhaps improve, regular follow-ups because it could reduce unnecessary in-person appointments. If such a system were to work, the "glaucoma clinic of the future," as proposed by Drs. Pasquale and Song, might become more specialized, largely focusing on postoperative care or medication changes.

* Conlin PR, Asefzadeh B, Pasquale LR, Selvin G, Lamkin R, Cavallerano AA. Accuracy of a technology-assisted eye exam in evaluation of referable diabetic retinopathy and concomitant ocular diseases. *Br J Ophthalmol* 2015, May 20

MASS. EYE AND EAR CAMPAIGN FROM PAGE 1

Department of Ophthalmology, the **Grousbeck Family** created the Grousbeck Center for Gene Therapy and the Grousbeck Family Chair in Gene Therapy. **Sam and Nancy Jo Altschuler** established the Altschuler Ophthalmology Surgical Training Laboratory (see page 7 for details), **Frans Van de Velde, MD, PhD,** made a significant commitment in honor of his mentor, Charles L. Schepens, MD, and **Nathalie and Charles de Gunzburg** created the de Gunzburg Retinal Diagnostic Imaging Center located in the Mass. Eye and Ear Retina Service on the 12th floor.

Other generous contributors include **Carmella Kletjian, Diane and Al Kaneb, Chris Snook** and **Susan Stoddart,** the **Ankeny Family Foundation, David Vargo and Sheila Collins,** and **Rich and Nichole Aldrich.** Many others supported otolaryngology initiatives. As of September 30th, the campaign celebrated 22 friends who made million-dollar-or-more campaign commitments. Altogether, Mass. Eye and Ear board members and trustees have given more than $33M to the campaign.

"The Campaign represents an opportunity to make quantum leaps forward in bringing new treatments and cures to the people who need them, here in Boston and all over the world," said Wyc Grousbeck. "The generosity we have seen so far is awe-inspiring. These gifts are transforming and re-defining what Mass. Eye and Ear can and will do."

How Can You Help?

- Learn about the campaign and consider making your gift – visit the campaign web site at MassEyeAndEar.org/BoldScience
- Spread the word – talk to friends about the progress Mass. Eye and Ear/HMS Ophthalmology physicians and scientists are making toward finding new cures.
- Attend events and bring your friends – learn more about the great work at Mass. Eye and Ear/HMS Ophthalmology
- Refer patients to Mass. Eye and Ear. Great gifts start with great patient care!

For more information, contact Melissa Paul, Chief Development Officer, at melissa_paul@meei.harvard.edu or 617-573-4168.

Three New Promotions to Professor

To be promoted to Professor of Ophthalmology at Harvard Medical School (HMS), faculty members must demonstrate outstanding intellect and contributions to their field. Candidates have distinguished themselves by improving the quality of life for individuals around the world, translating scientific discovery into practice, and teaching and mentoring future clinicians, vision researchers, and educators. We are thrilled that three of our faculty members recently have earned this honor: Janey Wiggs, MD, PhD, Louis Pasquale, MD, and François Delori, PhD.

Glaucoma Geneticist, Janey Wiggs Promoted to Professor of Ophthalmology

Janey Wiggs, MD, PhD, FARVO, an internationally recognized expert in the field of glaucoma genetics and in the broader field of genetics of inherited eye disease, was promoted to the Paul Austin Chandler Professor of Ophthalmology at HMS in May 2015. Her research and clinical activities have led to the development of novel diagnostic gene-based tests to identify patients at risk for glaucoma, a devastating disease causing permanent loss of vision due to irreversible degeneration of the optic nerve.

Dr. Wiggs received her PhD in Biochemistry from the University of California at Berkeley and her MD from HMS. After a research fellowship in Ophthalmic Genetics under the guidance of Thaddeus Dryja, MD, she completed a residency in Ophthalmology at HMS, followed by fellowships in Glaucoma and Medical Genetics. She first joined Mass. Eye and Ear in 1992, and after a spending a few years at Tufts, returned in 2001. She is one of only a handful of ophthalmologists world-wide to hold the distinction of dual board certifications in ophthalmology and medical genetics.

Dr. Wiggs is widely recognized for her expert clinical care of patients with glaucoma as well as for her knowledge in clinical ocular genetics. As Co-director of the HMS Ophthalmology Glaucoma Center of Excellence and Director of the Genetic Testing Laboratory at Mass. Eye and Ear, she collaborated with Eric Pierce, MD, PhD, to develop a panel test for mutations in genes known to contribute to inherited retinal degenerations, glaucoma, and optic atrophy. This Genetic Eye Disease (GEDi) test uses targeted capture and next generation sequencing, which has been found to be extremely reliable.

As an esteemed translational researcher, Dr. Wiggs was one of the first to use a genetic approach to identify underlying molecular events that can contribute to glaucoma development. She has made important contributions to early-onset forms of glaucoma with Mendelian inheritance, as well as to common adult-onset forms of glaucoma with complex inheritance. She is the PI of the NEIGHBORHOOD Consortium (see box on page 5) and a founding member of the International Glaucoma Genetics Consortium, an international group of 55 investigators and 25 cohorts from countries worldwide with the overall goal of identifying genetic risk factors for glaucoma.

Continuously funded by the National Eye Institute (NEI) for her glaucoma genetics research since 1991, Dr. Wiggs also has received support from the Massachusetts Lions, Research to Prevent Blindness, Fight for Sight, the Knights Templar Eye Foundation, and the March of Dimes Foundation. The recipient of numerous awards, she was selected as an Audacious Goals Winner from the NEI; received an Alcon Research Institute Award; and was the 2015 Mariana Mead lecturer at the HMS Department of Ophthalmology Annual Meeting and Alumni Reunion.

In addition to her clinical and research accomplishments, Dr. Wiggs is a dedicated mentor and administrator. As a first-year faculty member she was voted "Teacher of the Year" by HMS Ophthalmology residents.

At Mass. Eye and Ear, Dr. Wiggs lends her scientific and administrative expertise as Associate Chief for Clinical Research, the Associate Director of the Ocular Genomics Institute, and the Associate Director of the Howe Laboratory. She serves as Vice Chair for Clinical Research for HMS Ophthalmology. On a national level, she serves on the Scientific Advisory Board of the Glaucoma Research Foundation, as well as Research to Prevent Blindness, and is the U.S. Chair of the U.S.-Indo joint working group of the NEI (U.S.) and Department of Biotechnology (India). ■

Pioneer in Early Glaucoma Detection, Louis Pasquale Promoted to Professor of Ophthalmology

Louis Pasquale, MD, FARVO, a renowned glaucoma specialist, has earned the distinction of Professor of Ophthalmology at HMS. As Director of Mass. Eye and Ear's Glaucoma Service and Director of Telemedicine for Mass. Eye and Ear's Department of Ophthalmology, he is dedicated to patient care, government-sponsored research, and education.

Dr. Pasquale received his MD with Distinction in Research from SUNY at Stony Brook School of Medicine. He completed his residency in Ophthalmology at Temple University Hospital, and a fellowship in Glaucoma at Johns Hopkins University Hospital/Wilmer Eye Institute. He joined the HMS Ophthalmology faculty in 1992.

At Mass. Eye and Ear, Dr. Pasquale is committed to eradicating functional blindness from primary open angle glaucoma (POAG) and exfoliation syndrome through early detection and an improved understanding of disease pathogenesis. His research focuses on employing hypothesis-driven epidemiological methods to gain insight into why intraocular pressure (IOP) increases in POAG, and to discover novel factors making the optic nerve vulnerable to degeneration in POAG.

To improve overall patient care and treatment options, Dr. Pasquale has taken a candidate approach to discover gene-environment interaction terms related to POAG. His efforts have generated the largest known population-based, case-control group consisting of incident POAG cases with archived DNA samples and repeated, validated environmental exposure information. He is funded through the National Human Genome Research Institute to use this case-control sample in a high throughput genotyping effort with the long-term goal of identifying the full complement of genes, gene-gene, and gene-environment interactions associated with POAG. He has also been funded since 2006 by a grant from the National Institutes of Health, entitled "Genes and Environment in Glaucoma."

As Director of Telemedicine in Mass. Eye and Ear's Department of Ophthalmology, Dr. Pasquale works with health care organizations that may not have immediate access to experts in ophthalmology and provides ophthalmic consultations through the use of information technology (see box on page 3). Specifically, he directs the collaboration between MGH Chelsea and Mass. Eye and Ear to offer eye screenings for patients with diabetes at MGH Chelsea.

Dr. Pasquale is also a gifted and dedicated educator. His enthusiastic approach to teaching has fueled his national and international reputation in the field of glaucoma. With more than 142 papers published, he was the 2015 Samuel Schoenberg Memorial lecturer at Illinois Eye and Ear Infirmary, University of Illinois at Chicago. He has delivered grand rounds, crafted high profile editorials, and contributed to an international consensus panel regarding IOP.

Dr. Pasquale is the recipient of numerous honors, including the HMS Department of Ophthalmology Distinguished Ophthalmology Scholar Award, and the Secretariat Award from the American Academy of Ophthalmology. ■

IN THE SPOTLIGHT CONTINUED ON PAGE 6 >

GLAUCOMA
CENTER OF EXCELLENCE

Drs. Wiggs and Pasquale are frequent collaborators, and together they have performed groundbreaking work in the field of glaucoma. Together they co-direct the Glaucoma Center of Excellence, which consists of 25 faculty members and their trainees from the HMS community. This center serves as a resource for preferred practice patterns, for studying outcomes research, for coordination of translational and clinical research, and for education of patients, physicians and researchers.

Wiggs, Pasquale, Long-time Glaucoma Collaborators

Drs. Wiggs and Pasquale also founded the NEIGHBORHOOD consortium for POAG genomics. The goal of the project is to identify genetic risk factors for glaucoma that define the underlying disease-causing molecular events that can contribute to glaucoma development. The project has grown immensely since its start, expanding from eight to 23 sites. To date, NEIGHBORHOOD has helped identify 15 of the 16 genes and genomic regions associated with POAG.

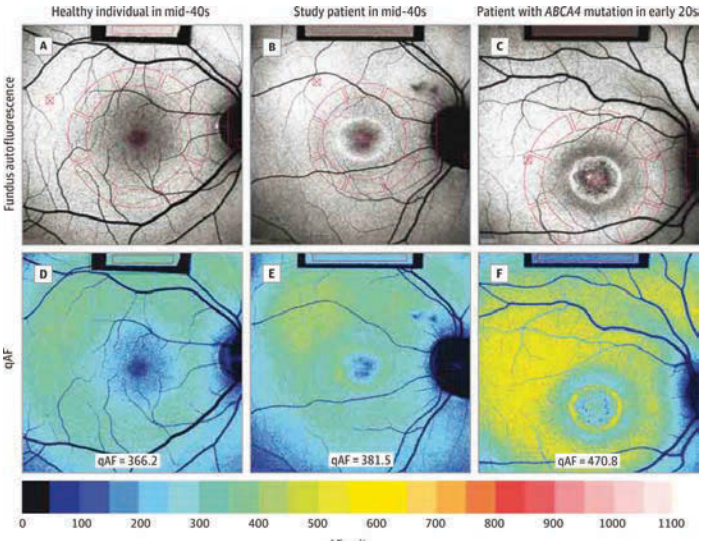
NEIGHBORHOOD

Physicist François C. Delori Promoted to Professor of Ophthalmology

A pioneer in the study of autofluorescence, François C. Delori, PhD of Schepens Eye Research Institute/ Massachusetts Eye and Ear reached another milestone in his career as he was promoted to Professor of Ophthalmology at Harvard Medical School in July 2015.

Born in Ghent, Belgium—the same town as Charles L. Schepens, MD—Dr. Delori completed his undergraduate studies in engineering at the University of Ghent before obtaining his MS and PhD in physics from the Imperial College of Science and Technology in London, England. Shortly after, he started his career at the Retina Foundation, now known as Schepens/Mass. Eye and Ear, where he has made important contributions to vision research.

During the last four decades, Dr. Delori has cultivated expertise in the examination of the retina by noninvasive means. By shining various colors of light onto the retina and analyzing the nature of the light reflected by the retina, he has been able to obtain quantitative information about many important biological parameters – such as oxygen levels in retinal blood vessels, speed of blood flow, diffusion of nutrients, and quantities of various pigments.



Fundus Autofluorescence and Color-Coded Quantitative Fundus Autofluorescence (qAF). Reprinted with permission from: Quantitative autofluorescence as a clinical tool for expedited differential diagnosis of retinal degeneration. *JAMA Ophthalmol*. 2015 Feb;133(2):219-20.

An innovator of novel retinal imaging techniques, he has developed advanced optical techniques to study the role of lipofuscin and melanin pigments in the retinal pigmented epithelium as well as new ways to measure the distribution of macular pigment in the neural retina. Lipofuscin, melanin, and macular pigment are three pigments that may play important roles in the causation of age-related macular degeneration (AMD). The ability to measure these pigments may not only provide new basic information on AMD and other retinal degenerations, but may also allow novel diagnostic tests to detect early disease and monitor the effects of drug intervention.

The recipient of the 2013 HMS Ophthalmology Distinguished Achievement Award in Research, François C. Delori, PhD, with Evangelos S. Gragoudas, MD (right)

Dr. Delori also collaborated with Dr. Robert H. Webb to co-develop the confocal scanning laser ophthalmoscope, a technological innovation that paved the way for fundus autofluorescence imaging. This imaging modality is now used worldwide in retinal diagnosis.

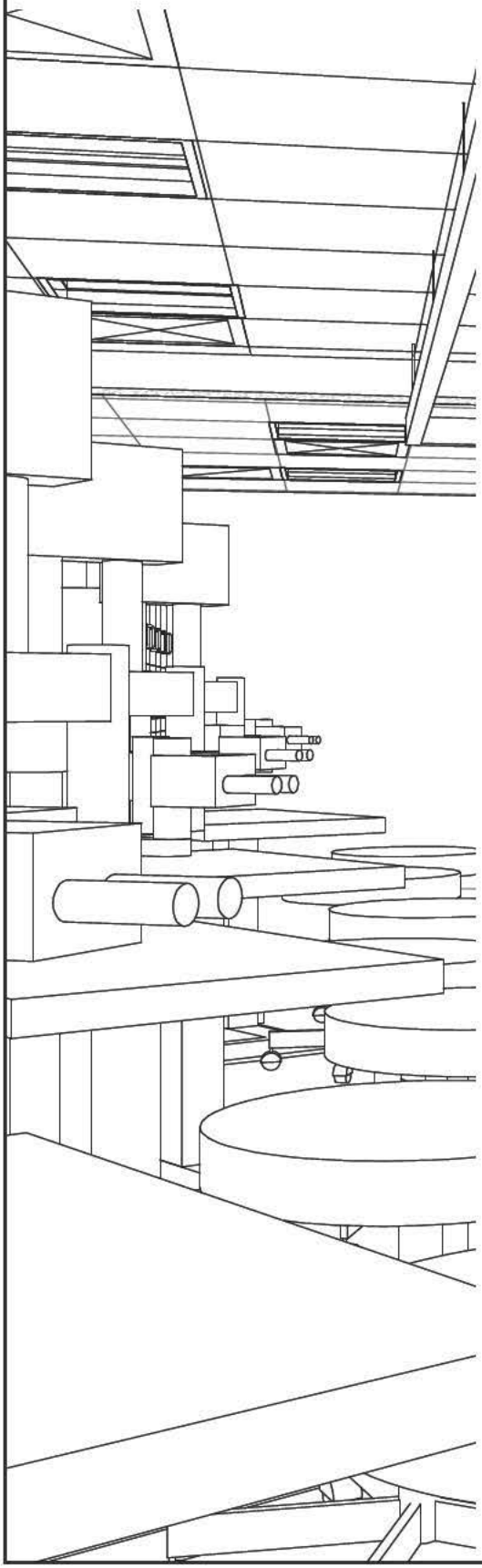
Since 1975, Dr. Delori's research has been funded continuously by National Eye Institute R01s and additional funding through the National Institutes of Health and the Massachusetts Lions. Having authored 82 peer-reviewed publications and nearly 15 book chapters, Dr. Delori has generated a substantial portfolio of work that has garnered him the HMS Department of Ophthalmology Distinguished Achievement Award in Research in 2013.

A generous teacher and mentor, Dr. Delori has traveled the globe presenting his research findings, including ways to integrate optical physics into clinical research. At Schepens/ Mass. Eye and Ear, he has mentored 10 pre-doctoral, post-doctoral, and clinical research fellows, and also shares his knowledge of the role and safety limits of light exposure with faculty and trainees alike. ■

"I am deeply honored by this promotion and thankful to all my colleagues who supported me for many years. Now I am going to order my first business card ever."

– François C. Delori, PhD

Altschuler Gift Honors Dr. Lucy Young, Creates Surgical Training Laboratory



In September 2015, Samuel and Nancy Jo Altschuler made a generous gift that funded the creation of the Altschuler Ophthalmology Surgical Training Laboratory – a cornerstone of the surgical training program at Mass. Eye and Ear/HMS Ophthalmology.

Their gift was made in support of the ***Mass. Eye and Ear Bold Science. Life-Changing Cures. Campaign,*** and given in honor of Lucy Young, MD, PhD, a Mass. Eye and Ear retina specialist who performed sight-saving surgery for the Altschulers' daughter, Lisa Jo Altschuler Flessel.

Nancy Jo and Samuel Altschuler

About 25 years ago, Lisa found that her vision was severely impaired. An eye exam quickly revealed the cause of the vision impairment – a detached retina. Dr. Young was able to re-attach the retina by performing scleral buckle surgery, saving Lisa's sight.

In addition to being a skilled vitreoretinal surgeon, Dr. Young is a passionate teacher and mentor. "When we were considering a gift to honor Dr. Young," said Sam Altschuler, "we thought, 'what better way to honor her than by funding a new initiative that also celebrates teaching?' We hope that our gift will inspire others, and that together, we will make a lasting impact on future generations of ophthalmologists and surgical specialists trained at Mass. Eye and Ear."

Mass. Eye and Ear trustees since 1999, Sam and Nancy have a history of supporting innovative learning and technology initiatives. Their gift to Mass. Eye and Ear comes on the heels of a 2014 donation to the Wentworth Institute of Technology that established the Altschuler Computer Center – a premier facility that gives students access to the latest computer science and networking technology.

The Altschuler Ophthalmology Surgical Training Laboratory will house state-of-the-art surgical equipment, training machines for vitreoretinal and cataract surgery, a proctor station with a plasma screen, and other technological improvements. Tripling the size of the current facility, the new laboratory will include eight practice stations and an ophthalmic surgery suite, enabling more training time and opportunities for HMS Ophthalmology residents and fellows. The facility will also provide a venue to host courses for practicing physicians.

The surgical training laboratory renovation is the most recent initiative designed to bolster residents' pre-operative surgical training experience. In the past five years, surgical curricular innovations have led to an increase in the number of surgeries each resident performs and an overall improvement in the quality of the residents' surgical experience.

"I cannot overstate my gratitude to the Altschulers. Both Nancy Jo and Sam have contributed so much to Mass. Eye and Ear as trustees, and their recent gift is another example of their tremendous generosity," said Joan W. Miller, MD, Chief of Mass. Eye and Ear and Chair of HMS Ophthalmology. "Without a doubt, the Altschuler Ophthalmology Surgical Training Laboratory, directed by Lucy Young, will make a lasting impact by providing dedicated educators the critical resources they need to train future generations of leaders."

Consider a Gift!

Help us continue a culture of excellence by planting the seeds of possibility today.

Your support will provide extraordinary opportunities for learning and discovery. You may designate your gift in any way you choose or support one of our numerous programs. Gifts are tax-deductible.

Members who make annual gifts of $1,000 or more within the fiscal year (October 1–September 30) are invited to Department events throughout the year and are recognized in this newsletter and Mass. Eye and Ear publications.

To Learn More...

Please contact Julie Dutcher in the Development Office:
julie_dutcher@meei.harvard.edu

617-573-3350

Gifts are tax-deductible.

Our alumni know first-hand that supporting the vital work of our students and faculty in the HMS Department of Ophthalmology helps drive continued achievement across all areas of education, research, and patient care. In 2009, we launched the ***Alumni Giving Society of HMS Ophthalmology @ Mass. Eye and Ear*** as a means to encourage support of the institution and teachers who inspired us. Now, six years later, we have seen many faculty and former faculty, residents, and fellows give in ways that inspire them.

We extend our grateful thanks to the current 2015 Society members:

Alumni Giving Society 2015 (October 1, 2014 to September 30, 2015)

CHAMPION Gifts of $25,000 or more

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- Joan W. Miller, MD
- Richard J. Simmons, MD

VISIONARY Gifts of $10,000 - $24,999

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PIONEER Gifts of $2,500 - $4,999

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- Joseph F. Rizzo III, MD
- Janey L. Wiggs, MD, PhD
- Lucy H. Young, MD, PhD

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- Michael K. Yoon, MD

In the Battle Against Eye Disease, Knights Templar Provides Funds to Find Cures

Sir Knight Thomas X. Tsirimokos, Corinna Bauer, PhD, Sir Knight Andrew Maninos, Cindy Windhol, PhD, and Sir Knight Richard Seychew.

For 50 years after its inception in 1956, the Knights Templar Eye Foundation provided assistance to individuals facing vision loss who could not afford surgery, and supported research initiatives to cure diseases of the eye. In 2010, the Knights Templar adopted a new mission statement emphasizing access to care rather than direct patient care. This new mission statement also embraces education as an another important initiative, along with funding eye research.

To date, the Foundation has expended over $140 million on research, patient care, and education. Nearly $750,000 has been awarded to HMS Ophthalmology trainees working in the fields of pediatric ophthalmology and ophthalmic genetics. Specifically, the Foundation has provided 22 grants over 19 years to young investigators from Mass. Eye and Ear/Schepens and Boston Children's Hospital.

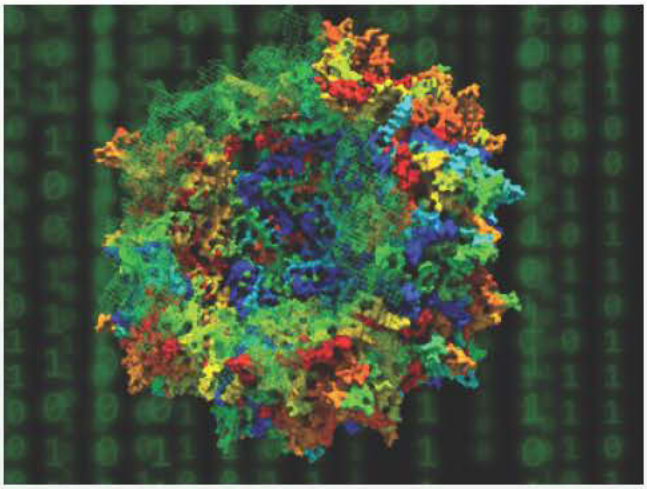
Cindy Windhol, PhD, a research fellow in the laboratory of Patricia D'Amore, PhD, MBA of Schepens/Mass. Eye and Ear and **Corinna Bauer, PhD**, a research fellow in the laboratory of Lotfi Merabet, OD, MSc at Mass. Eye and Ear were two of the 2015 awardees recognized during an award ceremony held on June 12. Sir Knights Thomas X. Tsirimokos, Andrew Maninos, and Richard Seychew awarded Drs. Windhol and Bauer each with $60,000 Career Starter Grants in support of their research projects. Dr. Windhol is investigating pathological vascularization of the retina to help innovate sight-saving cures for those with retinal diseases, and Dr. Bauer is using advanced neuroimaging to characterize abnormal brain development in cortical/cerebral visual impairment to develop future rehabilitation strategies.

At Boston Children's Hospital, **Zhongie Fu, PhD**, a postdoctoral fellow in the laboratory of Lois Smith, MD, PhD, also received a Career Starter Grant to explore the effects of hyperglycemia on exacerbating retinopathy of prematurity and to investigate how to protect against hyperglycemia-associated retinopathy. Working under the mentorship of Elizabeth Engle, MD, **Mary Whitman, MD, PhD**, an Instructor in Ophthalmology at Harvard Medical School and a K12 Harvard-Vision Clinical Scientist Development Program Scholar funded by the National Eye Institute/National Institutes of Health, was awarded a competitive renewal grant for 2015-16. Her research focuses on the development of the cranial nerves that control eye movements, both in normal development and in congenital fibrosis of the extraocular muscles, a disorder where patients have deficits in their ability to move their eyes. ■

Zhongie Fu, PhD

Mary Whitman, MD, PhD

Researchers Resurrect Ancient Viruses in Hopes of Improving Gene Therapy



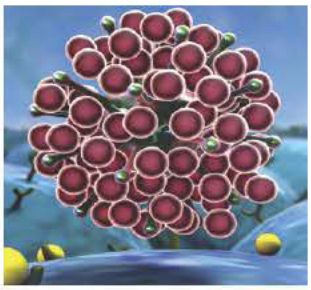
Luk H. Vandenberghe, PhD, of the Grousbeck Center for Gene Therapy and Ocular Genomics Institute as well as colleagues at Schepens/Mass. Eye and Ear have reconstructed an ancient virus that is highly effective at delivering gene therapies to the liver, muscle, and retina. This approach, published June 30th in *Cell Reports*, could be used to design a new class of genetic drugs that are safer and more potent than those currently available.

Given its basic nature, a virus can be an ideal delivery system for gene therapy. In order to survive, a virus must infiltrate a host organism undetected and transfer its genetic material into the host, where it will use the host to replicate and proliferate. So far, adeno-associated viruses (AAVs) used for gene therapy have been chosen from viruses that naturally circulate throughout the human population. However, in some cases, patients are already are immune to a virus and thus, ineligible for gene therapy Engineering new AAVs could increase the number of people for whom a given gene therapy will work.

Dr. Vandenberghe and his colleagues turned to evolutionary history for guidance. Over time, AAV ancestors have undergone a series of changes that kept the structural integrity of the virus while slightly altering some of its functions. The researchers were able recreate an evolutionary timeline of the changes and build in the laboratory nine synthetic ancestors viruses. When injected into mice, Anc80, the most ancient, successfully targeted the liver, muscle, and retina, without producing toxic side effects. Dr. Vandenberghe and his colleagues hope to use the knowledge they have gained in this study to design next-generation viruses for use as vectors in gene therapy. ■

Image Credit: Eric Zinn

Targeting the Immune System to Prevent Vision Loss



Kip M. Connor, PhD, and other vision researchers at Mass. Eye and Ear have taken a first step in solving a vexing problem: how to preserve photoreceptor cells and avoid irreversible vision loss in patients following retinal detachment. By analyzing innate immune system regulators in the eyes of human patients with retinal detachment and correlating their findings in an experimental model, Dr. Connor and his colleagues demonstrated that there were significant increases in the immune system's "alternative complement pathway" following retinal detachment. Researchers also found that this pathway facilitated early photoreceptor cell death after injury. Injured photoreceptors lose important proteins that normally protect them from complement-mediated cell death, allowing for selective targeting by the alternative complement pathway. Additionally, by blocking the alternative complement pathway, through both genetic and pharmacologic means, photoreceptors were protected from cell death. These findings were published on July 22, 2015 in *Science Translational Medicine*. ■

SuperVision+ Goggles App Provides Low Cost Solution for the Visually Impaired

Gang Luo, PhD, of Schepens/Mass. Eye and Ear created the SuperVision+ Goggles app to provide a low cost solution for head mounted vision enhancement devices for the visually impaired. The free app for iPhones (iOS) is designed to be used together with 3D virtual reality glasses, widely available off-the-shelf products. The SuperVision+ Goggles app offers features such as 10x zoom, a flashlight, enhanced image contrast, autofocus, head movement control, and image stabilization. When used with an iPhone and Google cardboard glasses, this app can be used to make an inexpensive, hands-free device. Cardboard glasses are sold online from $6-30 and marketed as virtual reality glasses. Devices with similar functions have been developed by companies such as Jorby and eSight, but these devices are expensive ($1,500 to $3,000) and have not been successful in gaining popularity. ■

Image Credit: Gang Luo, PhD

Improving Corneal Anesthetics

In the June issue of *Investigative Ophthalmology and Visual Science*, **Daniel S. Kohane, MD, PhD**, a pediatric intensive care doctor and anesthesiologist at Boston Children's Hospital (BCH), along with **Paraskevi Kolovou, MD**, of Schepens/Mass. Eye and Ear Department of Ophthalmology, **Borja Salvador-Culla, MD**, formerly of Schepens/Mass. Eye and Ear, and **Brian McAlvin, MD**, of BCH's Department of Medicine Critical Care showed that the co-administration of site-1 sodium channel blockers (S1SCBs) with dexmedetomidine provided longer lasting corneal anesthesia without delaying corneal wound healing compared to other topical ocular anesthetics. ■

Cataract Surgery Complications in Patients with Glaucoma


Mary K. Daly, MD

In a study conducted as part of the Veterans Affairs Ophthalmic Surgery Outcomes Data Project and published in the July issue of *American Journal of Ophthalmology*, collaborating researchers from Veterans Affairs (VA) Boston and Mass. Eye and Ear, **Angela Turalba, MD, Abhishek Payal, MBBS, MPH, Luis Gonzalez, MD**, and **Mary K. Daly, MD**, found that eyes with glaucoma were more likely to have posterior capsular tear with vitrectomy and sulcus intraocular lens placement during cataract surgery than those undergoing cataract surgery without glaucoma. Glaucoma cases were also more likely to have postoperative inflammation, prolonged elevated intraocular pressure, and additional surgery within 30 days. ■

Using Toric IOLs Aided by Aberrometry During Cataract Extraction

In a non-randomized retrospective comparative trial, **Kathryn M. Hatch, MD**, and **Jonathan Talamo, MD**, of Mass. Eye and Ear, Waltham, found that patients undergoing cataract extraction with toric intraocular lens (IOL) placement aided by intraoperative aberrometry were 2.4 times more likely than controls to have less than 0.50 D of residual refractive astigmatism (RRA) compared to standard methods. An RRA value of 0.5 D or less is significant because it allow excellent unaided visual acuity. These results were published in April 2015 in the *Journal of Refractive Surgery*. ■

TEACHING FOCUS

Training Residents to Teach

Yewlin Chee, MD, John Loewenstein, MD, and **Carolyn Kloek, MD**, of Mass. Eye and Ear, as well as **Lori Newman, MEd**, from the Shapiro Institute for Medical Education and Research, evaluated a resident-as-teacher curriculum and published the results in the September-October 2015 issue of *Journal of Surgical Education*. While most residents anticipate that teaching will be an important part of their career, the authors found that only one-third of ophthalmology residents had received training in teaching. The structured curriculum was developed based on the results of a needs assessment survey and administered to the ophthalmology residents. Overall, three teaching workshops, conducted between October 2012 and March 2013, addressed areas of need, including procedural teaching. Using a post-curriculum survey to assess the effect of the curriculum, researchers found that the curriculum improved residents' understanding, and comfort with, key teaching principles and practices, particularly in the area of surgical teaching. This curriculum will continue to be expanded and improved over the coming years.

Restructuring a Glaucoma Surgical Curriculum

Lucy Shen, MD, and **Angela Turalba, MD**, members of HMS Ophthalmology's Glaucoma Center of Excellence, and **Carolyn Kloek, MD**, Director of the HMS Ophthalmology Residency Training Program, found that a new glaucoma surgical curriculum for resident physicians—developed and implemented in 2012—was associated with an increase in residents' glaucoma surgical volume, progress in all categories in residents' self-evaluations, and improvement in surgical skills overall—as indicated by non-glaucoma faculty. The new curriculum promoted continuity of care for patients with glaucoma while also providing increased training opportunities for residents in surgical and perioperative care. Additionally, this re-designed schedule allowed time for feedback, repetition, and reinforcement. This study suggests other ophthalmic subspecialties could benefit from incorporating a structured surgical curriculum into clinical rotations. These findings were published in *JAMA Ophthalmology* on June 18, 2015. ■

HMS Ophthalmology Welcomes Residency Class of 2018

Jonathan C. Chou, MD

Originally from Chicago, Jonathan graduated *summa cum laude* from Northwestern University with a Bachelor of Science in Communication Science and Disorders, and a minor in Global Health. Before starting medical school, he spent a year working with homeless and low-income individuals to help them become self-sufficient. He received his medical degree from Northwestern University, Feinberg School of Medicine, then completed an internship at Presence S. Joseph Hospital. He was a research fellow at Northwestern in the Feinberg Cardiovascular Research Institute as well as the Department of Ophthalmology. He is the recipient of several awards, including a Research to Prevent Blindness Medical Student Fellowship, a Jampol Award for Outstanding Medical Student in Ophthalmology (top student), and an Illinois Society for the Prevention of Blindness Research Grant. He is a reviewer of *Current Eye Research*, and in his spare time enjoys soccer, football, traveling, and cooking.

Isaiah Giese, MD

Isaiah received his BA in Philosophy and Biology from the University of Victoria in Canada, while he simultaneously completed Masters level studies in philosophy at the University of Copenhagen. He then earned his MD from Boston University School of Medicine. During medical school, Isaiah began researching the eye, focusing on neuropeptides and the retinal pigment epithelium in establishing immune privilege in the eye. Following this, he was an Internal Medicine Intern at Mount Auburn Hospital. His clinical interests include heath care costs and disparities, and his current research focuses on "no-shows" in clinic and the role they play in health care disparities. He plans to integrate research in international health into his residency work. Isaiah enjoys woodworking and mechanics, and his personal projects have included building a bedframe from reclaimed barnyard wood, and restoring a 1936 Ford Coupe at his family's farm in Canada.

Natalie Homer, MD

After receiving her BS from the University of Michigan with Phi Beta Kappa distinction, Natalie – originally from Chicago – received her MD from Northwestern University, Feinberg School of Medicine, and graduated with distinction. While in medical school, Natalie completed clinical research in cardiothoracic surgery, and was the recipient of several awards, including the Society of Thoracic Surgeons Looking to the Future Medical Student Scholarship, and the University

of Michigan Medical School Student Surgery Leadership Weekend Scholarship. During medical school, she collaborated with retinal faculty at Northwestern, and decided to pursue a career in ophthalmology. For her Transitional Year Internship, she worked at Saint Francis Hospital in Chicago, IL, where she also served as Transitional Year Chief and continued to present her retina research at ARVO and publish in *Eye*. Natalie has always been very involved in her community; she was a student ambassador, president of her medical school's American Medical Association chapter, and a camp counselor for a youth program. She enjoys dancing, cycling, reading, acting, and playing the piano.

Benjamin G. Jastrzembski, MD

Benjamin earned his BA in Latin America and Caribbean Studies from Dartmouth College, and his MD from Harvard Medical School. Between undergraduate and medical school, Ben researched auditory impairment among HIV patients in Tanzania. He also was selected as a Fulbright Scholar in Anthropology, for which he travelled to Nicaragua and developed an interest in patient care in remote areas. After medical school, he completed an Internal Medicine internship at the University of North Carolina Chapel Hill, where he earned the Ontjes Award for patient care. Ben is an accomplished scholar, who has been awarded recognitions such as the Priest Fellowship for Graduate Studies from Dartmouth College and the Kosciuszko Foundation Scholarship for Graduate Studies. He was also elected to Phi Beta Kappa as an undergraduate. He has published several articles on the topic of international health and public health systems.

Michael M. Lin, MD

Originally from Pittsburgh, Michael received his AB in Biochemical Sciences from Harvard College where he graduated *magna cum laude*, followed by his MD from Harvard Medical School. During medical school, he received several awards, including an HMS Scholars in Medicine Office Fellowship for Year-Long Research, and the Judah Folkman Prize for Clinical/Translational Science Research from HMS. He completed his internship at Mount Auburn Hospital, and

has held research positions at the University of Pittsburgh, Joslin Diabetes Center, and Beth Israel Deaconess Medical Center. At Joslin, Michael has conducted research with Jennifer Sun, MD, MPH on the relationship between visual acuity and disorganization of the retinal inner layers visualized by optical coherence tomography, which was later published in *JAMA Ophthalmology*. Michael enjoys swimming and was runner-up on *Fun Taiwan Challenge*, Season 2, the Taiwanese tourism bureau's version of the reality show, *The Amazing Race*.

Elizabeth J. Rossin, MD, PhD

Elizabeth received her undergraduate degree from the University of Pennsylvania in Mechanical Engineering and Applied Mechanics, with minors in Mathematics and Chemistry. She earned her MD and PhD from the Harvard-MIT Health Sciences and Technology program. During medical school, she received an HMS Graduation Award for Excellence in Research. She has conducted research at several institutions since she was an undergraduate student, and, most recently, she worked with Janey Wiggs, MD, PhD researching genetic sequencing in patients with Topamax-induced angle-closure glaucoma. She is the creator and host of the Broad Institute's website for DAPPLE: Disease Association Protein-Protein Link Evaluator, which is used to merge genetic information with large protein-protein interaction network databases to help researchers interpret genetic associations. She also serves as the Chair of the Pre-Medical Committee at Lowell House, Harvard College. Elizabeth loves scuba diving and running along the Charles River in Boston.

Cindy Ung, MD

Cindy, originally from Los Angeles, graduated *cum laude* from Harvard University with her AB in Biochemical Sciences and a minor in Economics. Cindy earned her MD from Stanford School of Medicine and completed an internship in internal medicine at Santa Clara Valley Medical Center. She was the recipient of a Stanford Medical Scholars Award and a National Institutes of Health Clinical and Translational Science Award. She was a research assistant at Oxford University and Harvard Medical School, and a Graduate Researcher at San Francisco General Hospital where she designed and led a clinical research study on glaucoma severity and medical adherence, leading to several first-author articles in publications such as *Ophthalmology* and the *American Journal of Ophthalmology*. Cindy balances her work with extracurricular activities that aim to improve healthcare for the public, and has spent time in Peru and China conducting global health work. In her free time, Cindy enjoys traveling and exploring new foods.

Jay Wang, MD

Born and raised in California, Jay is interested in engineering applications for the eye, as demonstrated by his dual training in medicine and technology. He earned his BS in Bioengineering from the University of California, Berkeley, and graduated with a perfect GPA. As an undergraduate, Jay spent three years volunteering at the "Suitcase Clinic" where he worked with low income clients and medical professionals. Jay was president of UC Berkeley's Cal Community Music group, which travels to hospitals and care centers to provide musical entertainment to inpatients, and formed their a cappella division, "The Vocal Offerings." He earned his medical degree from the Harvard-MIT Health Sciences and Technology program, then interned at Mount Auburn Hospital. During medical school, he spent a summer at Mass. Eye and Ear as an Ophthalmology Laboratory Research Assistant, where he characterized the toxicity of a protein that may contribute to diabetic retinopathy. He also conducted research in various laboratories related to cardiovascular biology, biomechanics, and molecular biology. He was a graduate resident tutor at MIT, where he helped tutor pre-med undergraduate students.

Optometric Resident

Lauren Moses, OD

Lauren earned her BS in Biology with a minor in Child Advocacy from William Smith College and her Post-Baccalaureate in Pre-Health from Stony Brook University. She attended the New England College of Optometry, where she was elected into the Beta Sigma Kappa national honor society and graduated with her Doctor of Optometry. She has gained clinical experience as a Certified Ophthalmic Assistant at Advanced Eyecare in Vermont, Stony Brook University Medical Center, and most recently, Mass. Eye and Ear. Over the past year, her optometric internships have included the Worcester VA, Lynn Community Health Center, Mass. Eye and Ear, and the South End Community Health Center.

2015 HMS Ophthalmology Annual Meeting and Alumni Weekend

More than 300 Harvard Medical School Department of Ophthalmology faculty, alumni, and trainees gathered from May 29th to 31st for a three-day festival of events that included the Annual Meeting and Alumni Reunion, tours of Mass. Eye and Ear, a celebratory dinner, and visits to the Harvard Art Museum and Harvard Museum of Natural History.

Annual Meeting co-chairs **Ula Jurkunas, MD**, and **Lucia Sobrin, MD, MPH**, kicked off the meeting Friday morning. Scientific lectures followed, given by 12 HMS faculty, showcasing current investigations in eye research. Topics included resident education, applications of telemedicine in glaucoma, complex strabismus, stem cells for retinal repair, and many more.

On Saturday, the Alumni Reunion, chaired by **Joseph Rizzo III, MD**, featured an introduction to the graduating class of 2015, an update on the state of the department presented by **Joan W. Miller, MD, FARVO**, alumni presentations, and the Distinguished Research and Clinical Achievement Award presentations.

In the afternoon, **Janey Wiggs, MD, PhD**, delivered the 2015 Mariana Mead lecture, describing progress within the NEIGHBORHOOD Glaucoma Genetics Consortium — a group that aims to fully understand the genomic architecture of glaucoma.

Trainees discussed their clinical and basic research findings at the Annual Meeting Poster Competition, which boasted a diverse range of entries. Clinical poster winners were ophthalmology resident, **Tomasz Stryjewski, MD**, and Mass. Eye and Ear research fellow, **Ines Lains, MD**. Additionally, **Anitha Krishnan, PhD**, and **Brinda Subbarayal, PhD**, two Schepens/Mass. Eye and Ear research fellows, were selected as the research poster winners.

Claes Dohlman, MD, PhD, the recipient of the 2015 Distinguished Achievement Award in Clinical Care, presented, "Fifty-Seven Years at the Infirmary," which received a standing ovation. **Marshall Doane, PhD**, the recipient of the Distinguished Achievement Award in Research, followed with "The Cornea, Eyeblinks and Tears."

Chief and Chair **Joan W. Miller, MD, FARVO**, and **Reza Dana, MD, MSc, MPH, FARVO**, honored **Deborah Pavan-Langston, MD, FACS**, (class of 1970) with an engraved bowl for her nearly five decade career at Mass. Eye and Ear. Dr. Pavan-Langston retired in June, but continues to add wisdom and counsel to Mass. Eye and Ear as a trustee.

The event was sponsored by the HMS Department of Ophthalmology, Mass. Eye and Ear Alumni Association, Genentech, Mass. Eye and Ear/Schepens Eye Research Institute, Boston Children's Hospital, Joslin Diabetes Center, and Beth Israel Deaconess Medical Center. ■

Joan Miller, MD, FARVO, Deborah Pavan-Langston, MD, FACS, and Reza Dana, MD, MSc, MPH, FARVO

SAVE THE DATES: JUNE 10-11, 2016

Annual Meeting and Alumni Reunion

eye.hms.harvard.edu/alumnireunion

NOTES FROM THE CHAIR FROM PAGE 2

Our Department has a history of translational successes, many of which are the result of highly innovative collaborations. If we are to meet the dynamics of today's commercial marketplace, then we need apply the same innovation and creativity to our business strategy as we do to our research and development strategy. The Summit Fund is one approach, but we will need a diverse mix of funding mechanisms to help us bridge the gap between what we know is possible and what we can deliver to our patients. In this way, we will ensure that every child born today will see and hear throughout her lifetime. ■

Joan W. Miller, MD, FARVO
Chief and Chair

Congratulations to Our Newest Alumni!

2015 RESIDENT GRADUATES:

- Ashley Campbell, MD
- Xi Chen, MD, PhD
- Catherine Choi, MD, MSc
- Aubrey Gilbert, MD, PhD
- David Sola-Del Valle, MD
- Katherine Talcott, MD
- Aristomenis Thanos, MD
- Alice Lorch, MD (Chief Resident)
- Glen Ong, OD (Optometry Resident)

2015 GRADUATION AWARDS

- Clinical Teacher of the Year: **John Loewenstein, MD** (Retina)
- Surgical Teacher of the Year: **Sherleen Chen, MD** (Comprehensive Ophthalmology)
- Fellow of the Year Award: **Bobeck Modtjahedi, MD** (Retina)
- Cornea Center of Excellence Resident Research Award in Cornea and Refractive Surgery Prize: **Durga Borkar, MD**, for "Treatment of Fuchs' endothelial dystrophy by Descemet stripping without endothelial keratoplasty"
- Gragoudas Prize for best retina paper published by a Mass. Eye and Ear trainee:
  - Basic and translational: **Y. Murakami, MD**, "Programmed necrosis, not apoptosis, is a key mediator of cell loss and DAMP-mediated inflammation in dsRNA-induced retinal degeneration"
  - Clinical: **Bobeck Modjtahedi, MD**, "Imaging characteristics of intraocular foreign bodies"

2015 NEOS POSTER WINNERS

- First place: **Thanos Papakostas, MD**, clinical fellow at Mass. Eye and Ear
- Second place: **Tomasz Stryjewski, MD**, HMS Ophthalmology resident
- Honorable mention: **Durga Borkar, MD**, HMS Ophthalmology resident
- Honorable mention: **Daniel Oh**, research fellow at Mass. Eye and Ear

Upcoming Events

Joint Ophthalmology / Otolaryngology Grand Rounds: Quality, Humanism and Professionalism

Meltzer Auditorium at Mass. Eye and Ear and simulcast to the Karp 11 conference room at Boston Children's Hospital, Joslin Diabetes Center, and Mass. Eye and Ear, Longwood
October 22, 2015, 8:00 – 9:00 am
Michael Jellinek, MD, EVP, CEO, Community Network, Lahey Health will speak on service improvement. CME

Boston Ophthalmology International Visiting Professor in Cornea and External Eye Diseases

October 28, 2015, 4:00 – 6:30 pm, Boston University
October 30, 2015, 12:00 – 1:45 pm, MGH, Ether Dome
October 30, 2015, 1:45 – 6:30 pm, Mass. Eye and Ear, Meltzer Auditorium
Per Fagerholm, PhD, Professor of Ophthalmology, Linköping University and Chairman of Research and Education in the Department of Ophthalmology, University Hospital Linköping
Co-sponsored with the Boston Veterans Association.

Pediatric Ophthalmology Visiting Professor

Boston Children's Hospital, 300 Longwood Ave, Boston, Karp 11 Conference Room
November 4, 2015, 7:30 – 9:30 am
Grant Liu, MD, Chief, Division of Neuro-Ophthalmology; Professor of Neurology at the Hospital of the University of Pennsylvania; Professor of Neurology in Ophthalmology at University of Pennsylvania, Penn Medicine.

Cornea Center of Excellence Visiting Professor

Meltzer Auditorium, Mass. Eye and Ear
November 19, 2015, 5:30 – 6:30 pm
Michelle Callegan, PhD, James P. Luton Endowed Chair in Ophthalmology, Professor of Ophthalmology, Microbiology & Immunology, Oklahoma Center for Neuroscience, University of Oklahoma College of Medicine

Joint Mass General Hospital/ Mass. Eye and Ear Neuroscience Grand Rounds

Meltzer Auditorium at Mass. Eye and Ear and simulcast to the Karp 11 conference room at Boston Children's Hospital, Joslin Diabetes Center, and Mass. Eye and Ear, Longwood
February 4, 2015, 8:30 – 9:30 am
Luk Vandenberghe, PhD, Assistant Professor of Ophthalmology and Associate Director of the Ocular Genomics Institute, HMS Department of Ophthalmology; Director of the Grousbeck Gene Therapy Center, Mass. Eye and Ear CME

Ruthanne B. Simmons Lecture

Meltzer Auditorium, Mass. Eye and Ear
March 1, 2016, 5:00 – 6:00 pm
Peter Netland, MD, PhD, Professor and Chair, University of Virginia Health System, Charlottesville, NC CME

Online Calendar of Events: eye.hms.harvard.edu/calendar

American Academy of Ophthalmology (AAO) 2015 Annual Meeting

November 14-17, 2015
Subspecialty Day (Nov. 13-14)
Sands Expo/Venetian, Las Vegas
www.aao.org/registration

AAO Reception

November 14, 2015, 6:00-8:30 pm
Mass. Eye and Ear's Alumni Association and HMS Ophthalmology will host a reception at AAO for members and current trainees at the Bellagio, Las Vegas. Attendance is encouraged!
Register: http://bit.ly/1LTLZNy

Awards, Grants, and Honors

Lloyd Paul Aiello, MD, PhD, of Joslin Diabetes Center/ Beethem Eye Institute received the Health Care Heroes Innovator Award from the *Boston Business Journal*, which honors "those who have worked tirelessly to improve the overall health and wellness of those living in Massachusetts and beyond."

As the recipient of the 2015 J. Donald M. Gass Award, **Evangelos Gragoudas, MD,** of Mass. Eye and Ear presented the named lecture at the Retina Society's 48th Annual Scientific Meeting, held in Paris, France from October 7th to 11th.

Mass. Eye and Ear's **Leo Kim, MD, PhD,** and **Jason Comander, MD,** were selected to participate in the 2015 Alliance for Eye and Vision Research (AEVR) Emerging Vision Scientists Program held October 7th and 8th. This program allows scientists to meet with members of Congress to discuss the importance of vision research in the continuing fight to prevent blindness. **Rajesh Rao, MD,** and **Sumit Bhattacharya, PhD,** alumni of the HMS Department of Ophthalmology, have also been selected to participate.

Shoji Notomi, MD, PhD, a research fellow in the Mass. Eye and Ear Angiogenesis Laboratory, was selected for the Robert Machemer Foundation Vitreoretinal Research Scholarship under the mentorship of Demetrios Vavvas, MD, PhD, for the 2015-2016 academic year. Their study will examine the role of autophagy in age-related macular degeneration (AMD) and aims to better understand the pathology of AMD and identify new therapeutic targets for patients with AMD.

The American Society for Investigative Pathology (ASIP) has announced **Magali Saint-Geniez, PhD,** of Schepens/Mass. Eye and Ear as the recipient of the 2016 Cotran Early Career Investigator Award.

Dr. Saint-Geniez will receive this award and deliver the Cotran Lecture at the 2016 ASIP meeting, held in San Diego in April. This award recognizes investigators with recently established or emerging independence and a research focus leading to an improved understanding of the conceptual basis of disease.

Paolo Silva, MD, of Joslin Diabetes Center is the principal investigator on a Sight First Research Grant from the Lions Club International Foundation. He received $88,902 over 18 months for his project, "Epidemiological assessment of avoidable blindness and diabetic retinopathy in Region 3 of the Philippines." **Lloyd Paul Aiello, MD, PhD,** of Joslin and **Leo D.P. Cubillan, MD, MPH,** of the Philippine Eye Research Institute serve as key supporting investigators.

On July 23, 2015, Massachusetts Lions Eye Research Fund (MLERF) President Randall Pinch announced the recipients of MLERF grants. MLERF generously distributed more than $1 million to Boston area research institutions, including:

- Mass. Eye and Ear: $180,000
- Schepens Eye Research Institute: $180,000
- Boston Children's Hospital: $140,000
- Joslin Diabetes Center: $180,000
- Boston University Medical Center: $180,000
- Tufts University School of Medicine: $124,000
- UMass Medical Center, Worcester: $46,000

Personnel Updates

HMS Appointments/Promotions

Nicholas Butler, MD
Assistant Professor of Ophthalmology
Veterans Affairs Boston Healthcare System

François Delori, PhD
Professor of Ophthalmology
Schepens/Mass. Eye and Ear

Scott Greenstein, MD
Assistant Professor of Ophthalmology
Mass. Eye and Ear

Daniel Lefebvre, MD
Assistant Professor of Ophthalmology
Mass. Eye and Ear

Haijing Lin, PhD
Instructor in Ophthalmology, Part-time
Mass. Eye and Ear

Samir Melki, MD, PhD
Associate Professor of Ophthalmology, Part-time
Mass. Eye and Ear

40th Kevin Hill Seminar in Ophthalmology

Mass. Eye and Ear 1959 Ophthalmology residents: (standing, left to right) Louis Johnson, MD, Ephraim Friedman, MD; (sitting left to right) Kevin Hill, MD, and Byron Lingeman, MD

For more than 40 years, Mass. Eye and Ear leadership has partnered with Colby College to provide the Kevin Hill Seminar in Ophthalmology. The seminar features stimulating lectures on current, clinically relevant topics in ophthalmology, which are taught by internationally recognized faculty. **Deeba Husain, MD,** directed the 2015 seminar, which focused on the retina. Mass. Eye and Ear/HMS Ophthalmology participating faculty included **Kip Connor, PhD, Kevin Houston, OD, MSc, Ivana Kim, MD, Leo Kim, MD, PhD, Lucia Sobrin, MD, MPH, Demetrios Vavvas, MD, PhD,** and **David Wu, MD, PhD.** In 2016, **Peter Veldman, MD,** will lead the seminar, which will explore topics related to cornea.

A 1954 graduate of the Columbia University College of Physicians and Surgeons, Kevin Hill, MD, completed his Ophthalmology residency at Mass. Eye and Ear and was a co-resident with Ephraim Friedman, MD. Dr. Hill, a respected ophthalmologist and civic leader in his native Waterville, ME, established the seminar at Colby College in 1975. Dr. Hill passed away in 1984, and the course was named for him in 1987.

Louis Pasquale, MD, FARVO
Professor of Ophthalmology
Mass. Eye and Ear

Jennifer K. Sun, MD
Associate Professor of Ophthalmology
Joslin Diabetes Center

Janey L. Wiggs, MD, PhD, FARVO
Professor of Ophthalmology
Mass. Eye and Ear

Russell Woods, PhD
Associate Professor of Ophthalmology
Schepens/Mass. Eye and Ear

Leadership Appointments

Jorge Arroyo, MD, was promoted to Associate Chief of Ophthalmology at Beth Israel Deaconess Medical Center (BIDMC). Dr. Arroyo is a national leader in the treatment of complex retinal disorders and has directed the BIDMC Retina Service Center since 2004. His recent research has investigated the efficacy and outcomes of novel surgical techniques, the intraocular cytokine levels of eyes with various ocular conditions, and novel risk factors for AMD.

Kathryn Hatch, MD, of Mass. Eye and Ear, Waltham was appointed Mass. Eye and Ear Ophthalmology Director of Health Care Contracting and Payor Policies effective October 1, 2015

As of September 1, 2015, three **HMS Ophthalmology Centers of Excellence** have new leadership:

- Age-related Macular Degeneration: **Deeba Husain, MD**, joins **Patricia D'Amore, PhD, MBA**, and **Ivana Kim, MD**
- Mobility Enhancement and Vision Rehabilitation: **Joseph Rizzo III, MD**, joins **Eli Peli, OD, MSc**
- Ocular Oncology: **Ivana Kim, MD**, joins **Bruce Ksander, PhD**

New Recruits

Ryan Vasan, MD, joined the Department in October. As a member of the Comprehensive Ophthalmology and Cataract Consultation Service, he provides general ophthalmology exams for patients and performs cataract surgery. After receiving his medical degree from Wake Forest University School of Medicine, Dr. Vasan completed his Ophthalmology residency at Weill Cornell Medical Center/New York-Presbyterian Hospital followed by a joint Cornea fellowship sponsored by Wake Forest Baptist Hospital and the North Carolina Eye Bank (now Miracles in Sight Eye Bank). Before joining the Department, he held the position of Associate Ophthalmologist at Eye Associates in Burlington, MA.

Brian Hafler, MD, joined the Department of Neurology in August and works part-time in Mass. Eye and Ear's Electroretinography Service. Working with Connie Cepko, PhD, Professor of Ophthalmology and Bullard Professor of Genetics and Neuroscience at HMS, Dr. Hafler is studying therapeutic approaches using antioxidant genes in models of retinitis pigmentosa. After earning his MD/PhD from HMS, Dr. Hafler completed a postdoctoral fellowship in Dr. Cepko's laboratory funded by the Howard Hughes Medical Institute. He then completed his Ophthalmology residency at Yale School of Medicine/Yale-New Haven Hospital.

Departures

Ann-Marie Lobo, MD, left the department on July 24, 2015 to join the faculty at University of Illinois at Chicago/Illinois Eye and Ear as the co-director of the Uveitis Service. After graduating from the HMS Ophthalmology Residency Training Program, Dr. Lobo completed a clinical fellowship in Ocular Immunology/Uveitis at Mass. Eye and Ear. She joined the HMS faculty in 2010, quickly establishing busy uveitis and comprehensive practices at the Charles Street, Longwood, and Stoneham campuses. She also established a strong clinical research program in the Uveitis Service.

Xiaowu Gai, PhD, left the department at the end of July for Children's Hospital Los Angeles. Dr. Gai joined the Department in January 2014 as Director of the Mass. Eye and Ear Bioinformatics Center and Associate Director of the Ocular Genomics Institute for HMS Ophthalmology. During his tenure here, Dr. Gai continued to develop and apply bioinformatic tools for the analysis of genomic data such as whole exome sequence data. He published several papers with Eric Pierce, MD, PhD, and colleagues. Dr. Gai's wife, Rong Guo, will continue to work in Research Administration in her role as a biostatician until the summer of 2016.

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Alumni News

Maria C. Savoia, MD, Dean of Medical Education at the University of California, San Diego (UCSD) School of Medicine, became Chair of the National Resident Matching Program on July 1. This program was established in 1952 to provide a mechanism for matching the preferences of applicants for U.S. residency positions with the preferences of residency program directors. Dr. Savoia received her medical training from HMS.

Susana Marcosa, PhD, was the recipient of a 2015 Alcon Research Institute Award. She was a post-doctoral fellow at Schepens Eye Research Institute/Mass. Eye and Ear from 1997-1999

Yoshishiro Yonekawa, MD, a vitreoretinal fellow at Associated Retinal Consultants, Williams Beaumont Hospital and former HMS Ophthalmology resident, was one three fellows selected for the 2015 Ronald G. Michels Fellowship.

R.V. Paul Chan, MD, FACS, joined the faculty of University of Illinois at Chicago (UIC) in October 2015 as the Thanis A. Field Professor of Ophthalmology and Visual Sciences and as the Vice Chair for the Department of Ophthalmology.

18th ARI Awards Symposium Honors Outstanding Vision Research

The 18th Alcon Research Institute (ARI) Awards Symposium, hosted in collaboration with the HMS Department of Ophthalmology, took place September 18-19 at Mass. Eye and Ear's Starr Center for Scientific Communications. More than 175 members of the international vision research community attended, and ARI Award winners from 2013, 2014, and 2015 presented recent findings and ongoing research in topics spanning cornea, diabetic retinopathy, glaucoma, retina, gene therapy, regenerative medicine, and infectious disease. The 2015 ARI Awards were presented the evening of September 18, following a reception and lobster bake overlooking the Charles River.

Left to Right: Joan W. Miller, MD, Patricia D'Amore, PhD, MBA, Ula Jurkunas, MD, Janey Wiggs, MD, PhD, Demetrios Vavvas, MD, PhD, Jing Chen, PhD, James Chodosh, MD, MPH, Lucia Sobrin, MD, MPH, and François Delori, PhD

Dr. Chan is also the Director of the Pediatric Retina and Retinopathy of Prematurity Service. In this role, he is working to expand the pediatric retina and international programs at the Illinois Eye and Ear Infirmary of UIC. Dr. Chan was a Retina Fellow at Mass. Eye and Ear with Joan W. Miller, MD, FARVO, and Evangelos Gragoudas, MD, from 2004 to 2006 and Chief Fellow for Mass. Eye and Ear's Retina Service from 2005 to 2006.

Outreach

Partnerships in Uganda and Haiti

A surgical crusader, **Roberto Pineda II, MD**, traveled to Uganda as part of Mass. Eye and Ear's Office of Global Surgery and Health, where he performed sight-saving corneal transplants on two teenagers. Additionally, Dr. Pineda co-led an Academic Training Mission at the State University of Haiti Teaching Hospital during the week of June 22, 2015. During this mission, he led the ophthalmology residents through a course on anterior segment and ocular surface. He also visited with the faculty and learned about the state of ophthalmology in Haiti.

Camp Harbor View Vision Screenings

Each year, staff from Mass. Eye and Ear and Children's Hospital Ophthalmology Foundation conduct vision screenings for middle-school students at Camp Harbor View. In 2015—the event's 9th year running—staff screened 246 children in total. During the July mission, **Kimberley Chan, OD, Miin Roh, MD, Scott Barb, MD,** and **Matt Goodman, OD,** worked closely with ophthalmic technicians and Mass. Eye and Ear volunteers to administer screenings to 137 campers. In August, 109 campers were screened, of whom 21 will be seeing their primary care providers for follow-up and 12 were referred.

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In Memoriam

Endre A. Balazs, MD, a pioneer in viscoelastic therapeutics and a leader in hyaluronan and vitreous research, passed away on August 29, 2015 at the age of 95. In 1951, at the invitation of Harvard Medical School, Dr. Balazs moved to Boston to set up the research laboratories and organize the Retina Foundation, of which he later became president. The Retina Foundation is now known as the Schepens Eye Research Institute, which is part of Mass. Eye and Ear. Dr. Balazs was the recipient of many honors including the Friedenwald Award from the Association for Research in Ophthalmology (1963), the Cornelius D. Binkhorst Medal from the American Academy of Ophthalmology (1986), and the Distinguished Alumni Award from Schepens Eye Research Institute (2008).

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Joint Massachusetts General Hospital/Mass. Eye and Ear Neuroscience Grand Rounds

February 4, 2016
Luk Vandenberghe, PhD
Harvard Medical School

Ruthanne B. Simmons Lecture in Ophthalmology

March 1, 2016
Peter Netland, MD, PhD
University of Virginia
School of Medicine