

EyeWitness

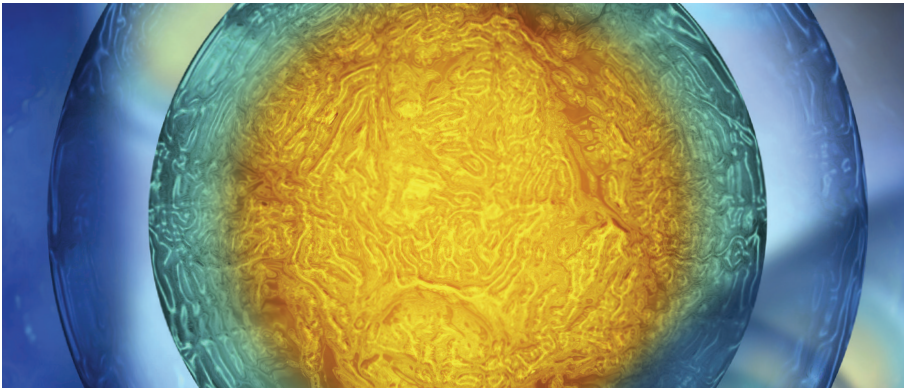
News from the Harvard Medical School Department of Ophthalmology



HARVARD
MEDICAL SCHOOL

DEPARTMENT OF
Ophthalmology

October 2014 #26



Working Toward the Promise of Second Sight

An overview of the Ocular Regenerative Medicine Institute

In this era of regenerative medicine, breakthroughs in molecular genetics, developmental biology, and transplantation provide new methods for repairing the diseased body in ways previously thought impossible. Retinal and corneal stem cell transplants and optic nerve regeneration have the potential to restore vision to people with a wide range of eye diseases, including age-related macular degeneration, retinitis pigmentosa, glaucoma, corneal disease, diabetic retinopathy, Stargardt's disease, and cancer. In addition, regenerative therapies may be able to restore vision to soldiers with injuries to their eyes, replacing parts damaged by blast injury or battle.

The Ocular Regenerative Medicine Institute (ORMI), co-directed by Michael J. Young, PhD and Demetrios G. Vavvas, MD, PhD, is spearheading efforts to deliver on the promise of a second chance at sight. Dedicated to the development of new therapies aimed at regenerating ocular tissues to restore vision, ORMI's 24 members are working independently and collaboratively on several research initiatives, of which retinal repair and corneal regrowth are receiving increased attention. If these projects are successful, millions of individuals will have hope for renewed vision.

Repairing the Retina

Retinal degenerative diseases like retinitis pigmentosa (RP) or age-related macular degeneration (AMD) are debilitating, incurable disorders characterized by photoreceptor cell death and vision loss. Healthy new cells are necessary to restore vision. ORMI researchers have demonstrated in the laboratory that retina-containing stem cells are capable of repopulating the diseased eye with new photoreceptors. The Young Laboratory, together with a British stem cell company (ReNeuron) are preparing to



(Left to right) Demetrios G. Vavvas, MD, PhD and Michael J. Young, PhD

Photo Credit: John Earle Photography

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Photo Credit: John Eisele Photography

Envisioning a Future without Blindness

The rising incidence of vision loss is a growing public healthcare concern. The number of people with vision loss in the United States is expected to rise from 4.2 million to 10 million by the year 2050 because of several factors: an aging population leading to significantly more people affected by age-related eye diseases like macular degeneration (AMD) and glaucoma; a sharp rise in diabetes with a concurrent increase in people with diabetic retinopathy; and cataract and corneal diseases that affect both the young and old.

According to a national public opinion poll evaluating eye health attitudes across racial and ethnic groups (Research!America and the Alliance for Eye and Vision Research, with support from Research to Prevent Blindness), fear of vision loss was ranked first among African-Americans, followed by AIDS/HIV. Hispanics and Asians ranked cancer first and blindness second, while non-Hispanic whites ranked Alzheimer's disease first, followed by blindness. More than 70 percent of participants rated "loss of eyesight" as having the greatest impact on their lives.

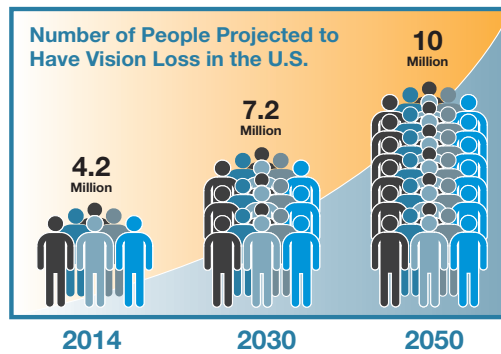
Strains on the nation's economy are also inevitable. With estimates of 10,000 Baby Boomers reaching 65—the age of eligibility for Medicare coverage—each day for the next 15 years, researchers predict that by 2050, the total economic burden of vision loss and blindness in the U.S. will reach \$373.2 billion (not adjusted for inflation); this is more than double the current annual cost of \$145 billion.

While these are sobering statistics, our Department is very optimistic that advances in biotechnology and human genetics are giving us unprecedented opportunities to advance cures and treatments that will significantly reduce the societal and economic burdens of blinding diseases. With our dedicated faculty, inspiring leadership, and Centers of Excellence and Institutes leading innovation across our tripartite mission, we are deeply vested in finding practical, creative—and sometimes audacious!—solutions to ensure that all people experience a lifetime of vision.

For example, in this issue, our cover story features some of the exciting progress unfolding in our Ocular Regenerative Medicine Institute (ORMI), where investigators are advancing the development of new therapies aimed at regenerating ocular tissues to restore vision. Their efforts range from developing engineered biomaterials that may be used to deliver neuroprotective agents or stem cells to the retina, to successfully growing the first human cornea, to conducting a first-in-man restorative stem cell trial in the retina (early 2015). Understanding that progress today hinges on collaboration, ORMI leadership has developed new educational venues that bring worldwide leaders together to share their expertise and insights.

Most recently, the FDA has approved our Investigational New Drug application to conduct a first-of-its-kind clinical trial on the safety and feasibility of stem cell transplantation surgery in a select group of patients with corneal disease. This work, led by Ula Jurkunas, MD shows great promise in the area of regenerative medicine and offers hope for a significant number of blind patients worldwide. Another corneal milestone is that our Boston Keratoprosthesis implant—the most widely used corneal prosthetic on the planet—is now a reimbursable procedure across the European Union, making it accessible to many more people with corneal disease.

These efforts are just the tip of the iceberg and made possible in part by the generosity of federal funding, foundation grants, and industry awards. As you read through this issue, I hope you will be inspired as much as I am in the many ways our talented faculty, department leaders, and supporters are joining together to alleviate the burden of blindness now and in the future. ■



Joan W. Miller
 Joan W. Miller, MD, FARVO
 Chief and Chair



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Issue #26

EyeWitness 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.

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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Researchers Awarded Prestigious €1 Million Champalimaud Vision Award



Five Harvard Medical School (HMS) Department of Ophthalmology researchers were among the seven recipients of the 2014 António Champalimaud Vision Award, the highest distinction in ophthalmology and visual science. The award was given

for efforts in the development of anti-angiogenic therapy for retinal disease.

The award laureates from HMS Ophthalmology include Joan W. Miller, MD, FARVO, Evangelos S. Gragoudas, MD, and Patricia A. D'Amore, PhD, MBA, FARVO of Massachusetts Eye and Ear; Lloyd Paul Aiello, MD, PhD of Joslin Diabetes Center; and Anthony P. Adamis, MD, of Genentech, who is also affiliated with Mass. Eye and Ear. George L. King, MD of Joslin Diabetes Center and Napoleone Ferrara, MD of University of California, San Diego School of Medicine and Moores Cancer Center also received the award. Laureates were honored during a ceremony held at the Champalimaud Centre for the Unknown in Lisbon, Portugal on September 10th.

“It is a great honor to be recognized as a group for our translational work in the field of angiogenesis. We know that we are part of a much larger effort that includes many who are not here today. Dr. Judah Folkman, who pioneered the field of angiogenesis...; other investigators who laid the foundation of ophthalmic research; as well as many postdoctoral fellows, graduate students, technicians, and clinicians; and most importantly, patients ...who participated in clinical trials.”

– Joan W. Miller, MD, FARVO

Established by The Champalimaud Foundation in 2006, the António Champalimaud Vision Award honors outstanding contributions to the preservation and understanding of sight. Award recipients are selected by an international jury panel that includes two Nobel Laureates and several prominent figures. The Champalimaud Vision Award is often referred to as the “Nobel Prize for Vision.” With its €1 million (\$1.3 million USD) purse, the Champalimaud Vision Award is among the world's largest scientific and humanitarian prizes. ■



Professor Anibal Cavaco Silva, President of the Portuguese Republic, congratulates the Laureates.



(Left to right) João Silveira Botelho (member, Champalimaud Foundation Board of Directors), Napoleone Ferrara, MD, George King, MD, Patricia D'Amore, PhD, MBA, FARVO, Joan W. Miller, MD, FARVO, Leonor Bezeza (Champalimaud Foundation President), Lloyd P. Aiello, MD, PhD, Evangelos Gragoudas, MD, Anthony Adamis, MD and Alfred Sommer, MD (Chairman of the Vision Award Jury and HMS alumnus).

Ocular Regenerative Medicine Institute, continued from Page 1

initiate a clinical trial aimed at restoring vision in patients with RP. This trial, which will take place at Mass. Eye and Ear, is planned for early 2015, and if successful, will be the first-in-man restorative stem cell trial in the retina.

Future work will involve newly engineered biomaterials that will be used for delivering neuroprotective agents or stem cells to the retina. These constructs have been shown to promote survival and functional growth of neurons after transplantation. These advances in regenerative medicine are encouraging and a group of investigators, including Patricia D'Amore, PhD, MBA, FARVO, Michael Young, PhD and Magali Saint-Geniez, PhD, are now trying to recreate the layers of the retina, including the photoreceptors, retinal pigment epithelium, and Bruch's membrane using a combination of stem cells and other regenerative techniques with unique polymer scaffolds. If successful, the project will allow construction of a new retina to be transplanted into patients, restoring vision to the blinded eye.

ORMI Researchers First to Regrow Human Corneal Tissue

A recent and exciting breakthrough came from Schepens Associate Scientist Bruce Ksander, PhD and postdoctoral fellow Evi Kolovou, MD, as well as other ORMI members—James Zieske, PhD and Meredith Gregory-Ksander, PhD—who have identified a way to enhance regrowth of human corneal tissue and restore vision, using a molecule known as ABCB5 that acts as a marker for rare limbal stem cells. Limbal stem cells reside in the eye's basal limbal epithelium, or limbus, and help maintain and regenerate corneal tissue. Their loss due to injury or disease results in a "limbal stem cell deficiency" in which patients develop opaque corneas and blindness.

In the past, tissue or cell transplants have been used to regenerate the corneal epithelium, but the success of these procedures depended on the number of limbal stem cells present within the transplant. Because there was no method to determine the number of limbal stem cells within the transplanted tissue, it was uncertain whether a sufficient number of stem cells was obtained that would fully restore the cornea. Drs. Ksander and Kolovou were able to use antibodies detecting ABCB5 to zero in on the hard-to-find stem cells in tissue from deceased human donor tissue, and use them to regrow anatomically correct, fully functional human corneas in mice. ABCB5 was originally discovered in the laboratory of Markus Frank, MD of Boston Children's Hospital and Natasha Frank, MD of the VA Boston Healthcare System, both collaborators with Drs. Ksander and Kolovou on this project. The ability to prospectively identify and isolate limbal stem cells will greatly enhance the success of corneal regeneration in patients with a limbal stem cell deficiency.

Looking to the future, ORMI plans to expand its Core Facility for Visual Neuroscience, which provides a dedicated room for researchers to evaluate vision in small animals before and after sight-restoring treatments.

Growth in Educational Programming

ORMI continues to grow its educational programming, developing new lecture series and research symposia. In 2013, Dr. Young and members of ORMI held two "think tanks"—also known as Disease Program Interlabs—with the Harvard Stem Cell Institute. These think tanks united leading stem cell scientists from around the world to gain a more complete perspective of the state of the field and foster collaborations across state, national, and international boundaries.

ORMI also partnered with the Ocular Genomics Institute, led by Eric Pierce, MD, PhD, to co-organize the Genetics and Regenerative Medicine of Eye Disease Lecture Series. Co-directed by Luk Vandenberghe, PhD and Neena Haider, PhD, the series continues this year on the third Wednesday of each month, September through June, at 4:30pm in Meltzer Auditorium at Mass. Eye and Ear.

Finally, October 23, 2014 marks the date for ORMI's inaugural international Symposium on Ocular Regeneration: Cell Therapy and Regeneration in the Retina. Pawan Sinha, PhD, Professor of Neuroscience at MIT, founder of Project Prakash, and a researcher interested in brain mechanisms of learning and vision will deliver the keynote speech during this one-day event, presented in partnership with the Third Biennial Symposium on AMD. ■

ORMI Members

- Kin-Sang Cho, PhD
- Jason Comander, MD, PhD
- Kip Connor, PhD
- Darlene Dartt, PhD
- Dean Elliott, MD
- Meredith Gregory-Ksander, PhD
- Neena Haider, PhD
- Pedram Hamrah, MD
- Tatjana Jakobs, MD
- Ula Jurkunas, MD
- Ivana Kim, MD
- Leo Kim, MD, PhD
- Bruce Ksander, PhD
- Kameron Lashkari, MD
- Richard Masland, PhD
- Joan Miller, MD, FARVO
- Eric Pierce, MD, PhD
- Magali Saint-Geniez, PhD
- Joan Stein-Streilein, PhD
- Luk Vandenberghe, PhD
- Demetrios Vavvas, MD, PhD
- Lucy Young, MD, PhD
- Michael Young, PhD
- James Zieske, PhD

The Minda de Gunzburg Center for Ocular Regeneration

The Minda de Gunzburg Center for Ocular Regeneration was founded in 1997 through a generous grant from Mr. Charles de Gunzburg. Today, it is a leader in retinal stem cell and optic nerve regeneration, dedicated to restoring vision by regenerating, transplanting, or engineering healthy ocular structures.

Renowned for its expertise in stem cell immunology and immune privilege, the Minda de Gunzburg Center is directed by Dr. Michael Young. Dr. Young specializes in using stem and progenitor cells to repair and replace damaged retinal tissue. He leads a faculty of 13 scientists and physicians in ocular stem cell biology, tissue engineering and molecular biology to approach regeneration from three perspectives: optic nerve regeneration, retinal tissue regeneration, ocular surface regeneration.

Then and Now: Leadership Transitions

Janey Wiggs Appointed Vice Chair for Clinical Research



Paul Austin Chandler Associate Professor of Ophthalmology Janey Wiggs, MD, PhD assumed the HMS Ophthalmology-wide role as Vice Chair for Clinical Research as of July 2014. Dr. Wiggs is an integral member of the department's research leadership and scientific community, who will add tremendous value to this role as she continues her other administrative responsibilities as Co-director of the Glaucoma Center of Excellence and Associate Director of the Ocular Genomics Institute at HMS Ophthalmology, and as Director of the Howe Laboratory and Ophthalmology's Associate Chief for Clinical Research at Mass. Eye and Ear. As a clinician scientist, her research program is dedicated to understanding the molecular mechanisms of glaucoma, including both early-onset glaucoma caused by highly penetrant alleles and common age-related glaucoma with complex inheritance. Dr. Wiggs is the PI of the NEIGHBORHOOD consortium contributing over 10,000 samples for genetic analyses.

Eric Pierce Leads the Electroretinography Service and the Berman-Gund Laboratory for the Study of Retinal Degenerations



In June Eric Pierce, MD, PhD, the Solman and Libe Friedman Associate Professor of Ophthalmology, assumed directorship for both the Mass. Eye and Ear Electroretinography Service and the Berman-Gund Laboratory for the Study of Retinal Degenerations. Since joining the Department in 2011 as Director of the Ocular Genomics Institute (OGI), Dr. Pierce has led efforts to establish the OGI as an international center of excellence that utilizes next-generation gene sequencing to develop therapies that aim to restore sight in patients with eye disease. A leader in the area of inherited retinal disorders, Dr. Pierce participated in one of the clinical trials showing that gene therapy works for the RPE65 genetic form of Leber Congenital Amaurosis (LCA), an early onset form of retinal degeneration. A follow-up study confirmed the safety and efficacy of gene therapy for this genetic form of LCA, and Dr. Pierce and his colleagues intend to apply this same approach to many other types of retinal disease.

With \$2.5 million in renewed support from FFB, current members in the Berman-Gund Laboratory and OGI—including Dr. Pierce, Jason Comander, MD, PhD, Basil Pawlyk, MSc, Michael Sandberg, PhD, and Luk Vandenberghe, PhD—are well-positioned to further their research of retinitis pigmentosa.

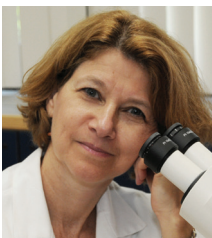
Medical Education's Rising Star, Ankoor Shah



Ankoor Shah, MD, PhD was appointed Director of Ophthalmic Medical Student Education at HMS and the new Editor-in-Chief of the *Digital Journal of Ophthalmology* (DJO) at Mass. Eye and Ear on July 1, 2014. An outstanding leader of the department's educational program and a highly regarded teacher and mentor, Dr. Shah has been very active on the administrative front, serving on the Ophthalmology Residency Steering Committee, leading initiatives to improve residency training, building the department's trauma and inpatient consult service at Brigham and Women's Hospital, and establishing an eye trauma service at Boston Children's Hospital. An Instructor in Ophthalmology at HMS, Dr. Shah also serves on the advisory group for the department's new, clinical newsletter, *Eye Advisory*, and specializes in pediatric ophthalmology and strabismus.

Dr. Shah assumed the medical education directorship from Dr. Simmons Lessell, who championed the education program for the last decade. In collaboration with Deborah Jacobs, MD, Dr. Lessell transformed the HMS Ophthalmic curriculum and radically redesigned the elective program to emphasize faculty mentorship, conference participation, and emergency room training. In 2014, he was honored with the HMS William Silen Lifetime Achievement in Mentoring Award and is continuing his clinical and teaching roles in the department.

Patricia D'Amore Succeeds Richard Masland as Director of the Howe Laboratory



On July 1st, Patricia D'Amore, PhD, MBA, FARVO was named Director of the Howe Laboratory and Associate Chief of Basic and Translational Research at Mass. Eye and Ear. A gifted scientist, mentor, and administrator, Dr. D'Amore brings three decades of leadership and research accomplishments to her roles. As the Charles L. Schepens Professor of Ophthalmology at HMS and Senior Scientist and Ankeny Scholar of Retinal Molecular Biology at Schepens, she continues to serve as Director of Research at Schepens, Ophthalmology Vice Chair of Basic Research, and Co-director of the HMS Age-Related Macular Degeneration Center of Excellence. The recipient of multiple recognitions for her scientific and academic contributions, Dr. D'Amore was honored most recently with the 2015 ARVO Proctor Medal—which Dr. Masland was awarded in 2010.

The Howe Laboratory of Ophthalmology, established in 1931 by Dr. Lucien Howe, boasts a long history of distinguished directors, including David G. Cogan, MD, Claes H. Dohlman, MD, PhD, Frederick Jakobiec, MD, DSc, and Joan W. Miller, MD, FARVO. In 2009, Dr. Masland was appointed Director, and he partnered with Dr. Miller to lead the Howe Laboratory through an unprecedented period of realignment and growth. Over the last five years, Dr. Masland has made innumerable contributions to the department and to the research efforts of Mass. Eye and Ear Ophthalmology faculty. With these goals accomplished, Dr. Masland continues as a key member of the Department's research leadership and scientific community, while pursuing a full schedule of research, scholarship, teaching, advising, and grant activities. ■

Alumni Giving Society of HMS Ophthalmology @ Mass. Eye and Ear

Our alumni know first-hand that supporting the vital work of our trainees 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, five years later, we have seen many former faculty, residents, and fellows give in ways that inspire them. This year, the Alumni Giving Society raised more than \$2.6 million in gifts and pledges (fiscal year 2013-2014).

Thank You!

A heartfelt thank you to our 2014 Alumni Giving Society Members, whose generosity is supporting extraordinary opportunities for learning and discovery

Consider a Gift

Help us continue a culture of excellence by planting the seeds of possibility today. Members of the Alumni Giving Society who make annual gifts of \$1,000 or more are invited to Department events throughout the year and are recognized in this newsletter and other Mass. Eye and Ear publications.

To Learn More...

Please contact Melissa Paul in the Development Office:
melissa_paul@meci.harvard.edu

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Gifts are tax deductible.

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Rosa Y. Kim, MD	Sonia H. Yoo, MD
Mohandas M. Kini, MD	Michael K. Yoon, MD

**deceased*

Frans J. Van de Velde: Teacher, Innovator, Philanthropist



Frans J. Van de Velde, MD, PhD, an HMS Instructor in Ophthalmology and Adjunct Clinical Associate at Schepens Eye Research Institute, has generously pledged \$2 million to Mass. Eye and Ear in honor of his mentor, the late Charles L. Schepens, MD, and in recognition of HMS Ophthalmology's accomplished past and bright future.

Born in Ghent, Belgium, Dr. Van de Velde received his medical training

from the University of Ghent before travelling to the United States in 1983, where he quickly fell in love with Boston. During this trip, he met with Dr. Schepens, who, at the age of 72, was still practicing ophthalmology privately and directing his now renowned eye research institute. Dr. Schepens' practice of applying knowledge gained in the laboratory directly to patient care held great appeal for Dr. Van de Velde. Returning to Belgium, he followed in the footsteps of his father and maternal grandfather, both of whom were ophthalmologists, and completed his ophthalmology residency at the University of Antwerp. Later, he received his PhD in medical sciences.

Passionate about mathematics and physics and their application to ophthalmology, Dr. Van de Velde returned to the Schepens Eye Research Institute in 1986 to pursue fellowships in medical retina and physiological optics/psychophysics. He remembers his fellowship years as a very exciting time: "Dr. Schepens and I shared many of the same passions—there was excellent chemistry between us."

Working closely with Dr. Schepens, Dr. Van de Velde was part of a team of scientists who advanced laser surgery in ophthalmology. Together, they further advanced applications of the Scanning Laser Ophthalmoscope (SLO), an innovation that allowed for a better and more complete diagnosis of diseases, such as age-related macular degeneration.

For more than 30 years, Dr. Van de Velde has been a witness to the tremendous growth in energy and talent across the Department. For example, Dr. Evangelos Gragoudas, Director of the Mass. Eye and Ear Retina Service, has transformed the Service into one of the world's preeminent academic and clinical services. In the last decade alone, Chair of HMS Ophthalmology and Chief of Mass. Eye and Ear Dr. Joan Miller has been instrumental in unifying and rejuvenating the Department's efforts in clinical care, research, and education.

"The year 2011 was an important time for the Department because it marked the formal unification of a long-standing alliance between Mass. Eye and Ear and Schepens," Dr. Van de Velde observed. This union strengthened the entire Department and catalyzed collaboration among the faculty, which today, has accelerated translational research in genetics, angiogenesis, biotechnology, and other areas.

"I'm confident that these on-going efforts will help develop next generation treatments and cures that will reduce the burden of blindness worldwide," commented Dr. Van de Velde. "It's an exciting time, and I'm proud to offer my support while paying tribute to a man who devoted his life to finding cures for blinding disease."



Ghent, Belgium: university town, alma mater of Drs. Schepens and Van de Velde, and historic city center.

"I am deeply grateful for Dr. Van de Velde and his generosity. In paying tribute to Dr. Schepens, Dr. Van de Velde demonstrates the impact that a mentor can have on a trainee and encourages each and every one of us to collaborate, cooperate and unify our community so that we can continue to provide premier patient care, world-class training, and transformational research."

—Joan W. Miller, MD, FARVO

Dr. Van de Velde holds 12 US patents on scanning laser ophthalmoscopy / OCT, and developed the original microperimetry programs for clinical use in the functional evaluation of macular disease. His current interests include femto-second lasers for the eye, photoreceptor directionality, and ophthalmic optics history and education.

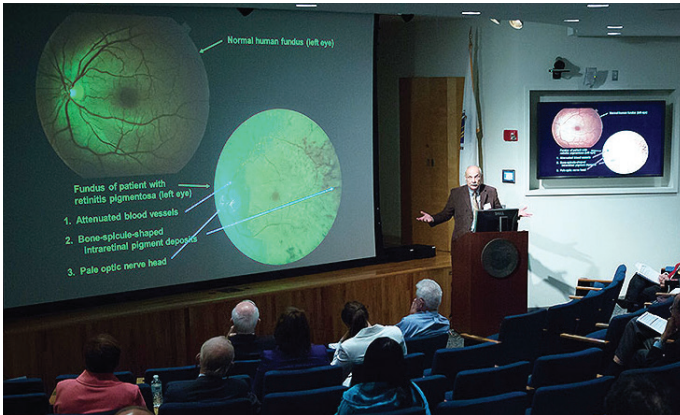
He continues to commute back and forth between his native Belgium and the United States. When in Belgium, he works closely with Dr. Marie-José Tassignon of the University of Antwerp, who is an expert in clinical optics and the bag-in-the-lens concept for cataract surgery. ■



In Belgium, Dr. Van de Velde takes care of a historic farm-estate, where he specializes in growing wheat, spelt, corn and other grasses.

2014 HMS Ophthalmology Annual Meeting and Alumni Reunion Delivers a High Impact Weekend

More than 300 HMS Department of Ophthalmology faculty, alumni, and trainees gathered for a three-day festival of events that included the Annual Meeting and Alumni Reunion, tours of Mass. Eye and Ear and Schepens, a celebratory dinner, and visits to Fenway Park and the Museum of Fine Arts from June 20 to 22, 2014. Annual Meeting co-chairs Drs. Ula Jurkunas and Lucia Sobrin kicked off the meeting Friday morning. Scientific lectures followed, given by 12 HMS faculty showcasing their current investigations in eye research. Topics spanned telemedicine for diabetic retinopathy, genetics of retinitis pigmentosa, advances in retinal imaging, resident education, and management of acute Steven's Johnson Syndrome in children. On Saturday, the Alumni Reunion, chaired by Dr. Joseph Rizzo III, featured Dr. Joan Miller's update on the state of the department, alumni presentations, and the Distinguished Research and Clinical Achievement Award presentations. The event was sponsored by the HMS Department of Ophthalmology, Genentech, Bausch+Lomb, Mass. Eye and Ear/Schepens Eye Research Institute, Boston Children's Hospital, Joslin Diabetes Center, and Beth Israel Deaconess Medical Center.



The 2014 Distinguished Achievement Awards, which recognize the lifetime achievements of alumni and/or faculty in eye and vision research and in clinical care, were presented on Saturday. As the 2014 Distinguished Research Achievement Award recipient, **Thaddeus Dryja, MD** (left) presented, "A Personal Voyage in the Genome." **Alfred Sommer, MD, MPH** (right), who was the 2014 Distinguished Clinical Achievement Award recipient, presented, "Preventing Blindness, Saving Lives, with Vitamin A."



Ten representatives from the quinquennial graduating classes, from 1964 through 2009, delivered engaging lectures spanning topics such as the trials and tribulations of randomized controlled trials, pediatric vision screening, advances in glaucoma over the last 50+ years, and advances in personalized medicine. In addition, **Frans Van de Velde, MD, PhD** (class of 1989) presented a historical overview, entitled, "The Legacy of Dr. Charles L. Schepens at Mass. Eye and Ear."



Roberto Pineda II, MD—a Distinguished Scholar in Ophthalmology, as well as Director of Mass. Eye and Ear's Keratorefractive Surgery Service and Associate Director of the Mass. Eye and Ear Office of Global Surgery and Health—presented this year's Mariana Mead Lecture, entitled "Global Citizenship in Ophthalmology." The lecture honors Dr. Mead, a well-respected Boston ophthalmologist, and a gifted eye surgeon, teacher, and member of the department who passed away in 2002.

And the Winner is...

The Annual Meeting Poster Contest drew 51 entries from diverse fields. The winners of the clinical poster awards were ophthalmology resident **Mi In (Irene) Rob, MD** for her entry, "Long-term Anti-VEGF Therapy for Neovascular Age-related Macular Degeneration: Prognostic Factors, Treatment Benefit and Outcome," and recent clinical fellow graduate (Boston Children's Hospital) **Mary Whitman, MD, PhD** for her poster, "Bifocals Fail to Improve Clinical Outcomes in High AC/A Accommodative Esotropia." Basic science research poster winners were **Sumit Bhattacharya, PhD**, Research Fellow in Ophthalmology (Schepens), for his poster, "Alteration in Cell Structure and Function in the Lacrimal Glands of Thrombospondin-1 Mouse Model of Sjogren's Syndrome," and **Kinga Bujakowska, PhD**, Research Fellow in Ophthalmology, for his entry, "Mutations in IFT172 Case Isolated and Syndromic Retinal Degeneration. Right: Research Fellow **Adarsha Koirala, PhD** presents his poster.



Celebrating the Class of 2014, HMS Ophthalmology Graduation

“Curious. Thoughtful. Hard-working. Enthusiastic. Dedicated. These are the qualities that describe the exceptional graduating class of 2014.”

—Joan W. Miller, MD, FARVO
HMS Ophthalmology Chair

“It is incredibly rewarding to watch the residents grow into accomplished and skilled ophthalmologists. This year’s graduates are an impressive group, and we look forward to watching their careers take off!”

—Carolyn Kloek, MD
HMS Ophthalmology Residency Training Program Director



(Graduating residents left to right) Drs. Alison Callahan, Yoshi Yonekawa, Sotiria Palioura, Thanos Papakostas, Kristine Lo, John Loewenstein (previous Director of the Residency Training Program), Carolyn Kloek (current Director), Yewlin Chee (Chief Resident for AY 13-14), Danielle Trief, Harpal Sandhu, and Alice Lorch. Three of eight graduating ophthalmology residents, and the Chief Resident, remain at Mass. Eye and Ear: Thanos Papakostas, MD (Clinical Medical Retina and Research Fellowship); Kristine Lo, MD (Comprehensive Ophthalmology and Cataract Consultation Service), Alice Lorch, MD (Chief Resident, AY 14-15), and Yewlin Chee, MD (Retina Fellowship). In addition, Yoshi Yonekawa, MD is currently pursuing an Adult and Pediatric Retina Surgery Fellowship at William Beaumont Hospital in Royal Oak, Michigan with plans to join Mass. Eye and Ear’s Retina Service upon completion of his training. Other residency graduates will be pursuing fellowships or going into private practice in New York, Florida, Michigan, Pennsylvania, and South Carolina.

On Thursday, June 26, friends, family, and faculty joined together to congratulate the newest alumni, the class of 2014, as the Harvard Medical School (HMS) and Massachusetts Eye and Ear Department of Ophthalmology proudly recognized 31 residents and clinical fellows in a graduation ceremony held in Meltzer Auditorium. Special thanks went to John Loewenstein, MD and Carolyn Kloek, MD—the former and current director of the HMS Ophthalmology Residency Training Program, respectively—for their dynamic leadership contributions. Drs. Joan Miller, Loewenstein, and Kloek conferred awards to eight graduating residents, the Chief Resident, and optometric resident. Director of the Fellowship Program Dean Cestari, MD introduced the 21 clinical fellows representing the subspecialty fields of cornea, refractive surgery, and external disease; glaucoma; neuro-ophthalmology; ocular immunology and uveitis; ophthalmic pathology; ophthalmic plastic surgery; pediatric ophthalmology and strabismus; and retina. Several awards were presented to outstanding trainees and honored faculty. ■

HONORS AND AWARDS

Evangelos S. Gragoudas Prize for Best Paper by a Mass. Eye and Ear Trainee

- Sarah Jacobo, PhD (basic or translational retina paper)
- Yoshihiro Yonekawa, MD (clinical paper)

Cornea Center of Excellence Resident Research Award in Cornea and Refractive Surgery

- Thanos Papakostas, MD, “PROSE Treatment for Ocular Surface Disease in Patients with History of Stevens Johnson Syndrome/Toxic Epidermal Necrolysis.”

Teacher of the Year Awards

- Sheila Borboli-Gerogiannis, MD, Surgical Teacher of the Year
- James Chodosh, MD, MPH, Clinical Teacher of the Year

Fellow of the Year Award

- Eduardo Uchiyama, MD

HMS Ophthalmology Welcomes Residency Class of 2017



Durga S. Borkar, MD

Durga attended Northwestern University, where she completed the Honors Program in Medical Education and earned a BA in Mathematics, as well as a certificate in Financial Economics. As an undergraduate, she spent a summer in Mexico City at the Universidad Panamerica studying Public Health. Durga later graduated *cum laude* and with Distinction in Research from Northwestern's Feinberg School of Medicine. With grant support from Alta California Eye Research Foundation, she studied the virulence of *Pseudomonas aeruginosa keratitis*, resulting in two publications and a presentation at the ARVO 2014 annual meeting. Additionally, Durga completed a fellowship at the Proctor Foundation, University of California, San Francisco, where she managed an epidemiology database on ocular inflammatory disease. Durga comes to us following her transitional year at Signature Healthcare Brockton Hospital in Brockton, MA.



James A. Stefater, MD, PhD

James graduated *magna cum laude* from Centre College in Kentucky with a bachelor's degree in Biochemistry and Molecular Biology and was elected to *Phi Beta Kappa* National Honor Society. At Centre, James was a Goldwater Scholar and national finalist for a Rhodes Scholarship. James later matriculated into the Medical Scientist Training Program at the University of Cincinnati, where his angiogenesis research was funded by the National Institute of General Medical Sciences and National Heart Lung and Blood Institute, and resulted in a first-author publication in *Nature*. Additionally, he has delivered presentations on various topics, such as trauma surgery and vascular biology. In 2011, he participated in the Lindau Meeting of Nobel Laureates in Germany. James comes to us following his internship in internal medicine at the University of Cincinnati.



Eric D. Gaier, MD, PhD

Eric earned his BA in Psychology and graduated *summa cum laude* from Ithaca College. He later attended the University of Connecticut, where he earned an MD/PhD in Neuroscience. His research interests include neuro-ophthalmology, electrophysiology, neuronal copper homeostasis, synaptic plasticity, and learning and memory. His work has been recognized with several best poster awards at various conferences, including the Center on Aging Annual Research Conference. As a medical student, Eric completed our clinical elective with Drs. Jim Chodosh and Scott Greenstein, as well as a two-month research elective with Dr. Janey Wiggs, which involved defining the types of mutations and clinical features of autosomal dominant optic atrophy. Eric joins us after completing an internal medicine internship at Mount Auburn Hospital.



Tomasz P. Stryjewski, MD

A Poland native, Tomasz graduated from Louisiana State University *magna cum laude*, with a BS in Biological Sciences and election to *Phi Beta Kappa* National Honor Society. While working at the Baton Rouge Eye Bank, he harvested cadaveric ocular tissue for 397 corneal transplants. He earned his MD from HMS, graduating with Honors and a Paul and Daisy Soros Fellowship for New Americans. He also earned a Master of Public Policy from the Kennedy School of Government. Tomasz has studied the WHO VISION 2020 initiative in Peru, among other projects. Currently, he is investigating the prevention of proliferative vitreoretinopathy with Dean Elliott, MD. They also published an article in *Ophthalmology* that introduces the RD-OGI Score, a tool that estimates the risk of retinal detachment in patients with open globe injuries. Tomasz joins us after completing his Mass General Hospital internship.



Rohini Rao, MD

Rohini majored in Evolutionary Biology and Ecology at Princeton University. She was elected into the *Sigma Xi* Scientific Research Society and awarded a Princeton Project 55 fellowship to work at an educational nonprofit in Manhattan. Subsequently, she matriculated at Columbia University's College of Physicians and Surgeons. Working with Dr. Dana Blumberg, Rohini studied the use of optical coherence tomography to screen African-Americans at high risk for glaucoma, which resulted in a first-author publication in the *Journal of Glaucoma*. As an NIH Summer Research Trainee, Rohini examined how retinal field-of-view and magnification affects the inter-expert reliability of plus disease in retinopathy of prematurity, which yielded a first-author paper in *Retina*. In 2013, Rohini earned her MD from Columbia and received the Samuel and Beatrice Leib Memorial Prize. Rohini recently completed her internship at Mount Auburn Hospital.



Zeba A. Syed, MD

After graduating *summa cum laude* from Harvard College with an AB in Comparative Study of Religion and junior election to *Phi Beta Kappa* National Honor Society, Zeba attended HMS, where her academic achievements were recognized with the John D. Bullock Ophthalmology Award. She completed a clinical elective with Drs. Matt Gardiner and Ula Jurkunas and later completed a research elective with Dr. Samir Melki. Zeba has conducted clinical research on glaucoma progression and corneal conditions and has received numerous honors, including a Ciba Science Award and Harvard's Edward M. Lamont Public Service Fellowship. Interested in international ophthalmology, Zeba worked with Partners HealthCare International to develop strategies for eye care health in rural Uganda. She comes to us after her transitional internship at St. Vincent's Medical Center in Bridgeport, CT.



Tavé van Zyl, MD

A South African native who grew up in Canada, Tavé studied Biochemistry at Harvard College, graduating *cum laude* with High Honors in Biochemical Sciences.

As an undergraduate, she worked in Dr. Eric Jacobsen's laboratory, designing and implementing organic synthetic strategies for obtaining high yields of maximally

pure Peloruside A, a natural product with tamoxifen-like properties. She later attended Yale University School of Medicine and completed a research fellowship with Dr. Ron Adelman.

Her research examined the role of impaired autophagy in the pathogenesis of age-related macular degeneration. Tavé completed our clinical elective with Drs. Matthew Gardiner and Simmons Lessell. She also participated in a Unite for Sight project in rural India. Tavé comes to us from her transitional year internship at Yale-New Haven Hospital.

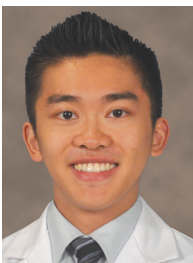


Natalie Wolkow, MD, PhD

Natalie graduated *summa cum laude* from Georgetown University with a BS in Biology, as well as election to *Phi Beta Kappa* National Honor Society and Sigma Xi Scientific Research Society. Subsequently, she entered the MD/PhD (MSTP) program at the University of Pennsylvania, where she received numerous accolades, including the

Charles A. Oliver Memorial Prize for Ophthalmology, the Jeffery W. Berger Memorial Ophthalmology Research Award, and the Howard Hughes Scholar Award. Her PhD research focused on iron transport in the retina, and she was the primary investigator for an NIH-funded study on the role of hephaestin in retinal iron homeostasis and retinal health. Natalie joins us after her internship in medicine at Pennsylvania Hospital in Philadelphia.

Optometric Resident



Glen Ong

Glen graduated with distinction from the University of Calgary with a Bachelor of Science in Biology. He earned his doctorate in Optometry with Honors in Research from UC Berkeley. While at Berkeley, Glen worked as a graduate research assistant and wrote an Honors Thesis entitled, "Characterizing Individual Retinal Layer

Thickness Changes in Adolescents with Type I Diabetes with and without Retinopathy." He also worked as a graduate student instructor in UC Berkeley's Department of Statistics and Physics. His optometric rotations over the past year have included Bascom Palmer Eye Institute, Alameda County Medical Center, VA Southern Oregon, and UC Berkeley Meredith Morgan Eye Center.

New Clinical Fellows

Cornea, Refractive Surgery, and External Disease

- Sunali Goyal, MBBS
- Haumith Khan-Farooqi, MD
- Silvia Odorcic, MD
- Hajirah Saeed, MD

Glaucoma

- Samantha Dewundara, MD
- Ann (Holly) Guy, MD
- Shivani Kamat, MD

Neuro-ophthalmology

- Nailyn Rasool, MD
- Crandall Peeler, MD
- Katherine Boudreault, MD

Ocular Immunology and Uveitis

- Victoria Chang, MD

Ophthalmic Pathology

- Anna Michelle Stagner, MD

Ophthalmic Plastic Surgery

- Lora Dagi Glass, MD

Pediatric Ophthalmology and Strabismus

(Mass. Eye and Ear/Boston Children's Hospital)

- Charlotte Gore, MD
- Loay Eldweik, MB ChB
- Pavlina Kemp, MD

Retina: Clinical Medical Retina and Research

- Athanasios Papakostas, MD

Retina: Inherited Retinal Degenerations

- Brian Hafler, MD

Retina: Medical Retina

- Hilary Brader, MD

Retina: Medical Retina (Joslin Diabetes Center)

- Marwan Abdulaal, MD
- Radwan Ajlan, MBBCh

Retina: Surgery and Diseases of the Retina and Vitreous

- Yewlin Chee, MD
- Dong (Dawn) Yang, MD
- Mira Sachdeva, MD, PhD

Retina: Vision Rehabilitation

- Anuradha Mishra, MD

Case Report: Associated Intralymphatic Lymphocytostasis

Frederick A. Jakobiec, MD, DSc, director of the David G. Cogan Laboratory of Ophthalmic Pathology at Mass. Eye and Ear, and colleagues published a case report of a woman in her 70s presenting with mild chemosis, diffuse hyperemia, and 4+ follicles on the tarsal conjunctiva in the left eye. Given that associated intralymphatic lymphocytostasis has received a lack of attention in the ophthalmic literature, researchers describe this case in *JAMA Ophthalmology* (August 2014). ■

Managing Strabismus Associated with Third Nerve Palsy

Several researchers from Boston Children's Hospital, including **David Hunter, MD, PhD** and **Lisa Dagi, MD**, published a paper in *JAMA Ophthalmology* (August 2014) investigating a novel technique for managing strabismus associated with third nerve palsy. Researchers found that adjustable nasal transposition of the split lateral rectus muscle can achieve excellent oculomotor alignment in some cases of third nerve palsy. However, they also note that appropriate case selection is vital and more experience is necessary before widespread adoption of this technique should be considered. ■

Bleb Revision for Hypotony Maculopathy

Brian Song, MD, a glaucoma specialist at Mass. Eye and Ear, and colleagues published a retrospective case series in *American Journal of Ophthalmology* (2014) describing a surgical method of bleb revision for hypotony maculopathy. According to researchers, there were significant improvements in visual acuity at 6 and 12 months after surgical repair. Surgical bleb revision was associated with good long-term control of intraocular pressure and improved visual acuity in eyes with hypotony maculopathy after previous glaucoma filtering surgery. ■

Improving Vision with Google Glass

HMS researchers recently demonstrated that using edge detection technology with Google Glass may improve performance of some patients with vision impairments. This technology is designed to recognize and enhance the edges of objects that are seen through Google Glass, allowing the viewer to see objects more clearly.

The study, led by **Eli Peli, MSc, OD**, Co-Director of the Mobility Enhancement and Vision Rehabilitation Center of Excellence, and postdoctoral fellow **Alex Hwang, PhD**, included three patients with normal vision. A diffuser film, which is a material that breaks up light and distributes the light evenly, was used to simulate vision loss.



Their app design and the study findings, presented at the annual meeting of the Society for Information Display and published in *Optometry & Vision Science*, demonstrated that Google Glass was able to enhance images in real time, thus leading to significantly improved vision when the subjects used a diffuser film. However, if the image was enhanced too much, it was more difficult to recognize objects. The app was submitted to the Glass App Store to be considered for inclusion as a free app that can be used by any Google Glass user with impaired vision. The application is also directly available at <https://sites.google.com/site/baquistul/glass-for-low-vision>

“We are excited about the implication of our finding,” noted Dr. Peli. “This gives us hope that with this new technology we can continue to develop affordable, high-quality vision enhancing devices, which will benefit patients with diseases that results in poor contrast sensitivity, such as macular degeneration, as well as other vision disorders.”

Most people with impaired vision experience reduced visual acuity and contrast sensitivity, which negatively impacts their quality of life. In the past, attempts have been made to use head-mounted displays as visual aids, but Google Glass, first announced in 2012, provides an effective, comfortable, and attractive platform, making it more appropriate for social interactions than its bulky predecessors.

Google Glass is a wearable computer that displays information in a small, unobtrusive window in the upper right corner of the user's vision. The display looks and works similarly to that of a smart phone, but in mostly a hands-free format controlled by the user via voice commands. The device's hardware contains features such as a wide-angle camera, a small see-through display, and a mobile central processing unit, which Dr. Peli utilizes to create this augmented vision app. The Peli Lab and the Luo Lab are working on additional Google Glass apps for enhancing vision. ■

This work was supported in part by a gift from Google, Inc., and Dr. Peli serves as a consultant to Google on the Google Glass project.

Behind the Science: The Collaboration that Led to Successful Corneal Transplantation and Regrowth

Great collaborations start with great conversations. Take, for example, the conversation among **Bruce Ksander, PhD** of Mass. Eye and Ear, **Evi Kolovou, PhD**, a postdoctoral researcher in Dr. Ksander's laboratory, **Markus Frank, MD** of Boston Children's Hospital, and **Natasha Frank, MD** of Brigham and Women's Hospital and the Veteran's Affairs Boston Healthcare System.

"Markus, Natasha, Evi and I attended the American Association of Cancer Research conference in 2010 in Washington, DC. After the conference, we happened to be on the same train back to Boston," reflected Dr. Ksander. "I started talking about the intraocular tumor project my lab was working on—Evi was working on intraocular tumors using an ABCB5 antibody from the Franks, whom she had met at the AACR meeting in Denver, Colorado, the previous year, and had just presented that data in Washington—and Markus shared some of his lab's preliminary data—which wasn't related to cancer—and that got us talking about stem cells. It was the shortest 6-hour train ride I've ever taken."

About 10 years ago, the Frank Laboratory successfully cloned and characterized a novel human ABC transporter, ABCB5, which is capable of marking mesenchymal stem cell subpopulations in human and murine skin. Since that initial finding, additional research had revealed that the ABCB5 gene was expressed in the eye as well.

"When a collaboration does pan out, when it all comes together – like in this project – it's fabulous because the group as a whole produces something that nobody could do alone, and that feels really great."
– Bruce Ksander, PhD



"Investigating ABCB5 in the eye was new territory for Markus and Natasha," said Dr. Ksander. "But after our conversation, we decided to look in the corneal limbus for these stem cells. That's

really how the first idea to start working on this limbal stem cell project developed—just by talking and sharing data."

As the project evolved, an important part of the scientific collaboration was drawing in experts who could assist with various stages of the project. For instance:

- Winston Kao, PhD of the University of Cincinnati Medical Center, and his laboratory were approached because of their collaborative work on the therapeutic use of hair follicle-derived stem cells in the treatment of limbal stem cell deficiency. They met with Dr. Kolovou to discuss their transplantation technique.
 - **James Zieske, PhD** of Mass. Eye and Ear/Schepens was approached because of his expertise with normal and pathological corneal anatomy and corneal epithelial wound healing.
 - The Frank Laboratory played a vital role in providing ABCB5 antibodies and co-developing a knock-out mouse model that could be used to transplant corneal tissue and reconstitute the cornea.
 - Victor Perez, MD of Bascom Palmer Eye Institute (who trained at Harvard Medical School and Mass. Eye and Ear) provided human biospecimens that were analyzed for limbal stem cell deficiency.
 - Kira Lathrop, MAMS of the University of Pittsburgh School of Medicine was sought out by Dr. Ksander at a conference because of her expertise in ocular surface imaging.
 - Charles Lin, PhD of Massachusetts General Hospital contributed his knowledge of imaging and provided access to a custom-designed microscope.
 - George Murphy, MD, Director of Pathology at Brigham and Women's Hospital, contributed his expertise in situ hybridization, which expedited the data acquisition process.
- The end result is a winning combination of eight laboratories and 23 different individuals producing work that would not have been possible by any one laboratory alone. This collaboration ultimately led to the finding that limbal stem cells, identified by the ABCB5 molecule, could be used to regrow anatomically correct, fully functional human corneas in mice (see page 4 for details). ■

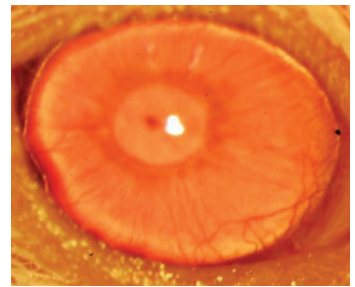


Photo Credit: Evi Kolovou, Bruce Ksander, and Natasha and Markus Frank



TFOS Workshop on Contact Lens Discomfort Generates Most Read IOVS Articles

In October 2013, Schepens Senior Scientist, David Sullivan, PhD organized the Tear Film & Ocular Surface Society (TFOS) International Workshop on Contact Lens Discomfort (CLD). Conclusions and recommendations from this workshop were published in *Investigative Ophthalmology & Visual Science (IOVS)*, the official journal of the Association for Research in Vision and Ophthalmology. Five of the top 7 most-read *IOVS* articles during the past year were from the special issue devoted to the TFOS International Workshop on CLD and all 10 sections of the TFOS CLD Workshop report were in the top 13 of the most-read *IOVS* articles this past year.

Upcoming Events

The HMS Department of Ophthalmology sponsors an extensive array of special lectures and courses.

Scan the QR code to be taken directly to the HMS online calendar at eye.hms.harvard.edu/hmscalendar



Ophthalmology Grand Rounds

CME Grand Rounds are held every **Thursday from 8:00 to 9:00 am** in the 3rd Floor Meltzer Auditorium at Mass. Eye and Ear and simulcast to the Karp 11 conference room at Boston Children's Hospital and Mass. Eye and Ear, Longwood. Continuing Medical Education credit is available. *Please note Grand Rounds are cancelled 11/20, 11/27 (Thanksgiving), and 12/4. Check the online calendar for additional dates and times.*

The Symposium on Ocular Regeneration: Cell Therapy and Regeneration in the Retina

Starr Center, Schepens Eye Research Institute

Course Directors: Demetrios Vavvas, MD, PhD, and Michael Young, PhD

October 23, 2014: Highlighting the current and future state of regeneration and stem cells in eye diseases, this one-day meeting will bring together thought leaders in the field to discuss the latest advances in, and the potential future of, retinal regeneration. This year's keynote speaker is Pawan Sinha, PhD, who is Professor of Neuroscience at MIT, founder of Project Prakash and a researcher interested in brain mechanisms of learning and vision.

NEW

Third International Biennial Symposium on AMD

Starr Center, Schepens Eye Research Institute

Course Directors: Joan Miller, MD, FEARVO, Ivana Kim, MD, Patricia D'Amore, PhD, MBA, FEARVO

October 24-25, 2014: The event kicks off with a cocktail reception on Thursday, October 23 at 6:30 pm in the Lank Family Dining Room on the 7th floor at Mass. Eye and Ear. On Friday,

an array of international researchers will present on topics such as Retinal & Choroidal Vasculatures, Animal Models, Inflammation, and New Concepts in Pathology. Friday concludes with a Gala Dinner at the Liberty Hotel. On Saturday, the symposium continues with more scientific presentations spanning topics such as Functional Implications of Genetic Risk Factors, Imaging, RPE Biology, and RPE Transplantation.

Neuro-Ophthalmology Fall Festival

Meltzer Auditorium, Mass. Eye and Ear **November 8-9, 2014**

Course Director: Joseph Rizzo III, MD

CME This unique workshop provides a comprehensive overview on the diagnosis and management of common or important neuro-ophthalmic disorders, including optic neuritis, ischemic optic neuropathy, vertical diplopia, giant cell arteritis, idiopathic intracranial hypertension, neuro-ophthalmology of multiple sclerosis, and a variety of eye movement disorders. The course includes case presentations and lectures by the faculty. **Registration required** <http://www.hms-cme.net/3414044/>

Boston Children's Hospital Visiting Professor Lecture

Karp 11 Conference Room, Boston Children's Hospital, and simulcast to Meltzer Auditorium, Mass. Eye and Ear Meltzer Auditorium

November 5, 2014, 7:30 – 8:30 am: Simon W. M. John, PhD, Professor, Investigator of the Howard Hughes Medical Institute

Clinical Assessments and Intervention Updates in Neuro-rehabilitation

Spaulding Rehabilitation Hospital, Charlestown, MA

December 4-6, 2014: This course provides participants with an introduction and update on the rapidly advancing field of neurorehabilitation. Overviews of current interventions (including FDA-approved and state-of-the-art research) aimed at improving cognitive, motor, and/or sensory function will be covered. **Registration is required** <http://www.hms-cme.net/3414471/>

Paul A. Chandler Visiting Professor Lecture

Meltzer Auditorium, Mass. Eye and Ear

December 5-6, 2014: Carol Shields, MD, Co-Director of the Oncology Service, Wills Eye Hospital; Professor of Ophthalmology, Thomas Jefferson University, Philadelphia, PA

Cornea Center of Excellence Visiting Professor

Meltzer Auditorium, Mass. Eye and Ear

CME December 11, 2014: Julian Stevens, MD, Consultant Ophthalmic Surgeon, Moorfields Eye Hospital, London

Faculty Grand Rounds – Quality, Humanism and Professionalism

Mass. Eye and Ear, Meltzer Auditorium

CME January 22, 2014: David H. Roberts, MD, Associate Professor of Medicine, Beth Israel Deaconess Medical Center/HMS, and Dean for External Education, HMS

Cornea Center of Excellence Visiting Professor

Meltzer Auditorium, Mass. Eye and Ear

January 22-23, 2014: Gordon W. Laurie, PhD, Associate Professor of Cell Biology and Ophthalmology; and Director of the UVa Biotechnology Training Program at University of Virginia

Orbital Dissection Course

Sloane Room, Mass. Eye and Ear

January 31, 2014: This course involves several hours of didactic lectures as well as video and live instruction using fresh frozen cadaver heads. Mass. Eye and Ear residents, oculoplastics fellows, and all ASOPRS fellows in the U.S. are invited to attend.

Atlantic Coast Retina Club/Macula 2015 Conference

Mass. Eye and Ear/ Revere Hotel

NEW

January 8-10, 2014: On January 8th and 9th, the Atlantic Coast Retina Club will feature case studies presented by residents, fellows and invited course faculty.

CME On January 10th, Macula 2015 will showcase an elite group of retina specialists from around the country, focusing on the latest developments in ocular imaging, management of diabetic retinopathy and retinal vein occlusion, ocular tumors and the future of AMD therapy. Presented jointly by Mass. Eye and Ear/HMS, New England Eye Center/Tufts University School of Medicine, and the Ophthalmic

Consultants of Boston in conjunction with Boston University and Lahey Hospital & Medical Center. Registration is required: MassEyeAndEar.org/Macula2015

Ephraim Friedman Lecture

Meltzer Auditorium, Mass. Eye and Ear
CME February 4, 2014: Masayo Takahashi, MD, PhD, stem cell pioneer, Riken Center for Developmental Biology

Mass. Eye and Ear Uveitis Instruction Course

February 28, 2014, 8:00 am - 3:00 pm: Ophthalmology residents, fellows, medical students, and practicing ophthalmologists from Boston and the surrounding New England area are invited to attend this one-day course, in which attendees review the diagnosis and treatment of common uveitis conditions as well as diagnostic testing, imaging, and treatment approaches to ocular inflammatory disease.

NEW

Ruthanne B. Simmons Lecture in Ophthalmology

Meltzer Auditorium, Mass. Eye and Ear
CME March 4, 2014: Donald L. Budenz, MD, MPH, Kittner Family Distinguished Professor and Chairman, University of North Carolina School of Medicine

Cornea Center of Excellence Visiting Professor

Meltzer Auditorium, Mass. Eye and Ear
March 12-13, 2014: James V. Jester, PhD, Professor of Ophthalmology and Biomedical Engineering and the Jack H. Skirball Endowed Research Chair, Gavin Herbert Eye Institute, University of California, Irvine

Awards, Grants, and Other Honors

Awards & Grants



Joseph Ciolino, MD, Assistant Professor of Ophthalmology at Harvard Medical School has been named the new **Henry Freeman Allen Cornea Scholar** at Mass. Eye and Ear.

Dr. Ciolino is a full-time member of Mass. Eye and Ear's Cornea and Refractive Surgery Service with expertise in corneal



Who are the 100 most influential people in ophthalmology?

According to a survey conducted by, and published in, *The Ophthalmologist*, three members in the Department made the "The Power List," including: Claes H. Dohlman, MD, PhD, Evangelos S. Gragoudas, MD, and Joan W. Miller, MD, FARVO.

transplants, keratoprosthesis (KPro) and diseases of the anterior segment of the eye. As a clinician scientist, Dr. Ciolino focuses his research on translational projects, including ocular drug delivery and keratoprosthesis.

Working with collaborators at Boston Children's Hospital and Massachusetts Institute of Technology, Dr. Ciolino has developed a drug-eluting contact lens capable of delivering various pharmaceutical agents, such as antibiotics, antifungals, and glaucoma medication. In a recent published study, Dr. Ciolino and colleagues demonstrated for the first time the ability of the lens to deliver latanoprost, a common glaucoma drug, at a therapeutic rate every day for a full month. A non-invasive method of sustained ocular drug delivery potentially has multiple direct therapeutic applications that may ultimately benefit a broad and diverse patient population.

Dr. Ciolino also is principal investigator for an investigational new drug application and a clinical trial evaluating the effectiveness of using collagen crosslinking as a means of improving Boston KPro retention in patients. He has received funding support from the National Eye Institute, Massachusetts Lions and Research to Prevent Blindness.

Juan Ding, PhD was awarded a 2-year National Institutes of Health K99 award totaling \$180,000 for the project, "The Regulation of Meibomian Gland Dysfunction by Growth Hormone and Insulin-Like Growth Factor-1."

Under the mentorship of Eric Pierce, MD, PhD, **Brian Hafler, MD**, an Inherited Retinal Degenerations clinical fellow, received a Foundation Fighting Blindness fellowship award in the amount of \$65,000 for his project, "Role of RNA Splicing Factors in Retina Degeneration."

Joseph Rizzo III, MD, received a three-year Department of Defense Assistive Technologies Research Award totalling \$2.2 million. This award will support pre-clinical testing of a retinal prosthesis

designed to restore vision to patients who are blind, especially those with either retinitis pigmentosa or age-related macular degeneration.

Jennifer Sun, MD, MPH of the Beetham Eye Institute/Joslin Diabetes Center was awarded a \$981,934 research grant over 3 years from the Juvenile Diabetes Research Foundation for her project entitled, "Molecular and Anatomic Biomarkers of Vision and Response to Anti-VEGF in Eyes with Diabetes."

Dr. Sun also received a 5-Year \$1.65-million National Institutes of Health R01 grant for her project entitled, "Predicting Outcomes & Anti-VEGF Response in Diabetic Eyes by Adaptive Optics Scanning Laser Ophthalmoscopy." Contributing effort to this grant are Paolo Silva, MD, Ann Kopple, Hanna Kwak, Michael Cheney, Jan Lammer, MD, and Lloyd Paul Aiello, MD, PhD.

The American Thyroid Association awarded **Leo Kim, MD, PhD** a research grant totaling \$57,500 for his project, "Animal Models of Acute and Chronic Thyroid Eye Disease."

Lotfi Merabet, OD, PhD, MPH received an \$80,000 research grant award from Deborah Munroe Noonan Memorial Research Fund for his project, "Uncovering the Relationship Between Brain Reorganization and Visual Dysfunction in Adolescents with Cortical Visual Impairment (CVI)," which is being done in collaboration with Boston Children's Hospital, the Perkins School for the Blind, and Boston University.

Members of the Berman-Gund Laboratory and Ocular Genomics Institute received renewed support from the Foundation Fighting Blindness for the "Retinitis Pigmentosa Research Center at the Berman-Gund Lab" in the amount of \$2.5 million over the next five years. Funded investigators include **Eric Pierce, MD, PhD** (OGI Director), **Jason Comander, MD, PhD**, **Basil Pawlyk, MSc**, **Michael Sandberg, PhD** and **Luk Vandenbergh, PhD**.



2014 New England Ophthalmological Society Poster Awards

- **1st place:** Michael Wan, MD, completed his fellowship in Pediatric Ophthalmology and Strabismus at Boston Children's Hospital in 2014
- **2nd place:** Marie-Claude Robert, MD, completed her fellowship in Cornea at Mass. Eye and Ear in 2014
- **3rd place:** Yoshihiro Yonekawa, MD, completed his ophthalmology residency at Harvard Medical School in 2014
- **Honorable mention:** Aubrey Gilbert, MD, currently a senior resident in the Harvard Medical School Department of Ophthalmology
- **Honorable mention:** Emily King Deschler, MD, completed her fellowship in Medical Retina at Joslin Diabetes Center, Beetham Eye Institute in 2014

Daria N. Van Tyne, PhD of the Gilmore Laboratory was awarded a F32 grant from National Institutes of Health for her project entitled, "Regulation of Expression and Immunity in the Enterococcus Faecalis Cytolysin," in the amount of \$115,000.

Russell Woods, PhD received a three-year renewal exceeding \$1.9 million from the National Eye Institute for his project entitled, "Watching Television and Movies with Low Vision." Dr. Woods has been continuously funded for this project since July 2008.

Three Mass. Eye and Ear/Schepens researchers received grants from the BrightFocus Foundation for their pioneering work in the areas of macular degeneration and glaucoma. **Neena Haider, PhD** was awarded a \$120,000 grant to pursue the development of a new genetic model for choroidal neovascular (wet) AMD with co-primary investigator **Kip Connor, PhD**. **Andrius Kazlauskas, PhD** was awarded a \$120,000

grant to test his hypothesis that one of the causes of AMD is the inability of the eye to cope with cellular stress. And **Baojian Fan, PhD** received \$100,000 to track down the genes that cause Pigment Dispersion Syndrome and pigmentary glaucoma with co-primary investigator **Janey Wiggs, MD, PhD**.

Research to Prevent Blindness Grants Award

Research to Prevent Blindness renewed the Department of Ophthalmology's Unrestricted Grant for 2014 in the amount of \$115,000. The grant is administered by **Joan W. Miller, MD**.



Michael Gilmore, PhD was awarded a \$50,000 RPB Research Sabbatical Award, which is enabling him to travel to world-leading basic research laboratories to acquire new skills

and insights into structural biology and biofilm engineering in order to inform the design of new inhibitors of drug-resistant bacteria. His research focuses on the evolution and development of multidrug resistant strains of enterococci, streptococci and staphylococci, and the development of new therapeutic approaches.



Lucia Sobrin, MD, MPH was awarded a \$60,000 William & Mary Greve Special Scholar Award, which enabled her to pursue promising scientific leads in the field of genetics of diabetic

retinopathy for which other funds are not readily available.

Eric Pierce, MD, PhD received an RPB Nelson Trust Award in the amount of \$100,000. The award is designed to stimulate, strengthen, and promote exceptional research to improve the diagnosis and treatment of retinitis pigmentosa. Dr. Pierce's research program focuses on identifying new IRD disease genes, investigating the mechanisms by which mutations in these genes lead to blindness, and using this information to develop therapies to prevent vision loss. His scientific efforts have helped lead to more effective ways to address IRDs using genetic sequencing and gene therapy

methods. To date, the Pierce Laboratory has helped discover four genes that harbor mutations that cause inherited retinal degenerations.

Massachusetts Lions Eye Research Foundation Presents Annual Awards

On July 17, MLERF generously awarded research grants to several HMS Ophthalmology affiliates and partner institutions during their annual awards dinner hosted this year by Joslin Diabetes Center:

- **Mass Eye and Ear:** \$183,000
- **Schepens Eye Research Institute:** \$183,000
- **Boston Children's Hospital:** \$142,000
- **Joslin Diabetes Center:** \$183,000
- **Boston University School of Medicine:** \$183,000
- **Tufts University School of Medicine:** \$110,000

In addition, the MLERF Presidential Grant was awarded to Mass. Eye and Ear based on a proposal submitted by **Janey Wiggs, MD, PhD**. This \$100,000 grant will be used to purchase a new automated DNA sequencer (MiSeq) that will greatly improve the capacity and efficiency of the Ocular Genomics Institute's diagnostic genetic testing service, for which Dr. Wiggs serves as director.

Congratulations to researchers whose projects were supported by MLERF grants. Mass. Eye and Ear investigators include: **Drs. Jason Comander, Baojian Fan, Xiaowu Gai, Qin Liu, Eric Pierce and Janey Wiggs** (Ocular Genomics Institute); **Drs. Nahyoung Grace Lee, Leo Kim, Suzanne Freitag, Donita Garland, Ivana Kim, Anne Marie Lane, Evangelos Gragoudas, Lucia Sobrin and Rebecca Stacy**. Schepens investigators include **Drs. Joe Arboleda, Sunil Chauhan, and James Zieske**.

Janey Wiggs, MD, PhD received a National Institutes of Health P-30 competing grant award totaling more than \$3 million, payable over five years. The grant will support three core resources at Mass. Eye and Ear: Biobank Core, directed by Dr. Wiggs, Genomics Core, directed by Eric Pierce, MD, PhD, and Biostatistics Core, directed by Louis Pasquale, MD. Core resources have helped increase research productivity, support collaborative research, and contributed to successful

faculty recruitment. The P-30 grant provides critically important resources that support the Department's overall research program and, in particular, the translation of new knowledge into clinical information that positively impacts the diagnosis and care of patients affected by blinding visual disorders.

Other Honors

Dean Cestari, MD has been accepted into the Academy at Harvard Medical School for the 2014-2016 term.

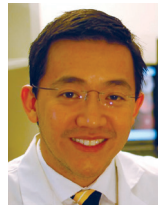
Nature Biotechnology named **Gerald Pier, PhD**, Professor of Medicine (Microbiology and Molecular Genetics) and member of the Cornea Center of Excellence, among the top 20 senior translational researchers in 2013. The journal ranked researchers based on paper and patent output. Included in this ranking were studies Dr. Pier has conducted on vaccines and antibodies to prevent or treat serious ocular infections due to a variety of microbial pathogens.

Cynthia Qian, MBBM received the CNIB's Baker Fellowship, which is awarded annually for post-graduate training in ophthalmic subspecialties. Dr. Qian is a retina clinical fellow working in the laboratory of Shizuo Mukai, MD.

Marie-Claude Robert, MD, a Cornea Fellow (KPro) in Dr. Claes Dohlman's laboratory, has garnered several research awards including the Suzanne Véronneau-Troutman Prize for Postgraduate Ophthalmology Research; the Fonds de Recherche du Québec en Santé (Québec Health Research Funds) scholarship; the Centre Hospitalier de l'Université de Montréal Recruitment scholarship; and the Royal College of Physicians and Surgeons of Canada Detweiler travelling fellowship.

Three Harvard Catalyst Program interns, mentored by HMS Ophthalmology faculty, presented their final presentations in August 2014. Samuel Okpechi of Southern University at New Orleans, who was mentored by **Luk Vandenberghe, PhD**, graduated from the Visiting Research Internship Program. Luis Daniel Diaz-Aguilar of the David Geffen School of Medicine at UCLA was mentored by **Kip Conner, PhD** at Mass. Eye and Ear and Walter Hardesty of the University of California, Los Angeles was mentored

by **Gabriel Kreiman, PhD** of Boston Children's Hospital; both graduated from the Summer Clinical and Translational Research Program.



Paolo Silva, MD was named the recipient of the 2014 Outstanding Young Scientist Award from the National Academy of Science and Technology in the Philippines. With this award, Dr. Silva will develop the Joslin Diabetes Center/Beetham Eye Institute's overseas reading center by allocating space and training image graders. The center will work with the Joslin/BEI Reading Center on novel advanced imaging grading protocols for prediction of future visual acuity and diabetic retinopathy progression.

Janey Wiggs, MD, PhD was elected into the American Ophthalmological Society and will accept this honor during the 151st Annual Meeting of the AOS, held in Newport, Rhode Island on May 14-17, 2015.

Congratulations to **Pablo Argüeso, PhD**, who received a HMS Academy Certificate of Excellence in Tutoring.

Personnel Updates

HMS Appointments

- **Pablo Argüeso, PhD**, Associate Professor of Ophthalmology, Mass. Eye and Ear/Schepens
- **Michael Farkas, PhD**, Instructor in Ophthalmology, Mass. Eye and Ear
- **Mark Kuperwaser, MD**, Assistant Professor of Ophthalmology, Beth Israel Deaconess Medical Center
- **Ann-Marie Lobo, MD**, Assistant Professor of Ophthalmology, Mass. Eye and Ear
- **Yin-Shan (Eric) Ng, PhD**, Assistant Professor of Ophthalmology, Mass. Eye and Ear/Schepens
- **Lucy Shen, MD**, Assistant Professor of Ophthalmology, Mass. Eye and Ear
- **Rebecca Stacy, MD, PhD**, Assistant Professor of Ophthalmology and Instructor in Pathology, Mass. Eye and Ear

Promotions:

Roberto Pineda II, MD, Associate Director, Office of Global Surgery and Health, Mass. Eye and Ear; Distinguished Scholar in Ophthalmology, Mass. Eye and Ear

New Recruits:



Paul B. Greenberg, MD has joined Mass. Eye and Ear's Retina Service, seeing patients at two new Mass. Eye and Ear locations in Plainville, MA, and Providence, RI.

Dr. Greenberg specializes in the treatment of medical retinal disease with a focus on diabetic retinopathy, retinal vein occlusion and age-related macular degeneration. After obtaining his medical training from the Mount Sinai School of Medicine, he completed a residency in ophthalmology at the Tulane University School of Medicine and, following a tour of duty in the US Air Force, a fellowship in medical retina at New England Eye Center/Tufts University School of Medicine. Dr. Greenberg is actively involved in medical student and resident education and has received numerous teaching and mentoring awards, as well as an Achievement Award from the American Academy of Ophthalmology. As a clinician scientist, his research interests include retinal vascular disease and ophthalmic health services research, medical education and epidemiology; he is widely published on these topics. See page 19 for details on Mass. Eye and Ear's expansion.



Magdalena G. Krzystolik, MD joins Mass. Eye and Ear on October 15th as Director for the hospital's two new locations—in Plainville, MA and Providence, RI—where she specializes

in the treatment and surgery of retinal diseases. Dr. Krzystolik's academic interests include anti-angiogenic treatments of retinal diseases and integrating retinal surgery into the ophthalmic graduate medical education curriculum. She received her MD from the Pritzker School of Medicine at the University of Chicago, followed by an ophthalmology residency at Harvard Medical School. Subsequently, she served as Chief Resident at Mass. Eye

and Ear before completing a vitreoretinal fellowship there in 2000 as a Heed Fellow. Since 2006, together with Dr. Paul Greenberg and their team, she has grown Southern New England Retina Associates into a successful private vitreoretinal practice. As part of Mass. Eye and Ear's expansion to the south, she will continue to grow the practice at these two locations, now called *Mass. Eye and Ear, Providence* and *Mass. Eye and Ear, Plainville*. Dr. Krzystolik is also a Clinical Associate Professor of Surgery at the Warren Alpert Medical School of Brown University where she lectures, supervises and mentors trainees, conducts clinical research and directs a retina clinic at the Providence VA Medical Center. See page 19 for details on Mass. Eye and Ear expansion.

Christian Song, MD will be joining Mass. Eye and Ear's Comprehensive Ophthalmology and Cataract Consultation Service full-time in January, 2015. He completed his medical training and ophthalmology residency at New York University School of Medicine. Christian then pursued fellowship training in Cornea, Cataract, and Refractive Surgery at Weill Cornell Medical College/New York-Presbyterian Hospital, where he currently holds an appointment as Assistant Professor of Clinical Ophthalmology.



Karen Zar, OD has joined Mass. Eye and Ear's Optometry and Contact Lens Service, and sees patients at Mass. Eye and Ear, Waltham. In addition to providing routine eye care, she has extensive

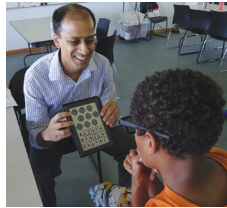
knowledge of fitting contact lenses for a variety of needs, including keratoconus, post-corneal transplant, and other irregular corneal conditions. A graduate of the Rand Afrikaans University in Johannesburg, South Africa, Dr. Zar earned her Bachelor's degree in Optometry with honors in Low Vision and Ocular Pathology and earned a certificate of advanced study in ocular disease and pharmacology. In 2000, Dr. Zar relocated to the United States and obtained her optometric doctorate at the New England College of Optometry.

Departures:

Peter Bex, PhD left Mass. Eye and Ear/Schepens on July 31st to pursue a new opportunity at Northeastern University. Since joining Schepens seven years ago, Dr. Bex and his laboratory members have continued their dynamic work using

behavioral and computational techniques to study the disease process in age-related macular degeneration, glaucoma, and amblyopia. In addition to his research program, he has been a devoted teacher and mentor, advising more than 30 trainees and post-doctoral faculty.

Service



Members of the Department, including **Ankoor Shah, MD, PhD** and **Aris Thanos, MD, PhD**, provided comprehensive eye

exams to children and leaders-in-training at Camp Harbor View during two summer visits. Of the first 113 children screened, 20 were advised to see their own providers to address refractive errors and 17 were advised to seek follow-up by a pediatric ophthalmologist—two of whom needed urgent follow up. During a second visit, comprehensive eye exams were provided to an additional 115 children (117 if counting



the examinations of Big Bird and a teddy bear). Camp Harbor View offers close to 800 children, ages 11 to 14, who are living in Boston's at-risk neighborhoods, the opportunity to participate in a four-week

program offering traditional summer camp activities such as hiking, arts and crafts, sports and swimming.

In conjunction with the Vision Coalition and Year Up Boston, two vision clinics took place in July at Mass. Eye and Ear, Longwood. **Yan Jiang, OD** and **Mark Bernardo, OD** conducted in-depth examinations of 23 students from Year Up, a non-profit that gives low-income young adults the tools required to thrive in a business environment. After screenings and exams, opticians outfitted the students with stylish glasses, courtesy of the Vision Coalition.

Louis Cantor, MD, Senior Secretary for Clinical Education at the the American Academy of Ophthalmology (AAO) wrote to Joan Miller, MD, Chief and Chair of the Department to express the AAO's "sincere appreciation for invaluable volunteer contributions" of the following Ophthalmology faculty: **Ann-Marie Lobo, MD**, **Teresa Chen, MD**, **Sherleen Chen,**

MD, **Roberto Pineda II, MD**, **Pedram Hamrah, MD**, **Mary Lou Jackson, MD**, **Kathryn Colby, MD, PhD**, **Gena Heidary, MD, PhD**, **Deeba Husain, MD**, **Deborah VanderVeen, MD**, and **Dean Cestari, MD**.

Lotfi Merabet, OD, PhD Delivers TEDx Talk

On September 12, **Lotfi Merabet, OD, PhD**, of the Laboratory for Visual Neuroplasticity presented a TEDx talk in Cambridge, discussing his research on how the brain adapts to blindness. Dr. Merabet has been studying the development of virtual environments and game-based strategies to help blind individuals with orientation and mobility training.

Alumni News

Applied Genetic Technologies Corporation—a clinical stage biotechnology company developing adeno-associated virus (AAV)-based gene therapies for the treatment of rare eye diseases—announced the appointment of **David R. Guyer, MD** to the company's Board of Directors. Dr. Guyer completed his retinal fellowship at Mass. Eye and Ear and has a significant track record in developing and commercializing ophthalmologic therapies.

In Memoriam



Ann Elizabeth Stromberg, a retired Mass. Eye and Ear orthoptist of 60 years, passed away on June 4, 2014 at the age of 91. Ms. Stromberg graduated from Mount

deSales Academy of the Visitation, Mount St. Agnes College, and George Washington University. After earning her certification from the American Orthoptic Council in 1945, Ms. Stromberg joined the Wilmer Clinic of the Johns Hopkins Hospital. In 1948, she began her career at Mass. Eye and Ear, where she treated children with eye movement abnormalities and trained hundreds of ophthalmology residents and medical students. She also served as an Instructor in Ophthalmology for HMS from 1949 until 1982. She retired from Mass. Eye and Ear in 2008.

Mass. Eye and Ear Expansion

As an integral part of the Department's regional business development strategy to the west and south, Mass. Eye and Ear recently acquired two private ophthalmology practices in Waltham, MA, and the southeastern Massachusetts/Rhode Island areas.

Mass. Eye and Ear, Waltham
1601 Trapelo Road, Suite 184
Waltham, MA

To the west, the cornea and refractive surgery practice of Jonathan H. Talamo, MD and Kathryn Masselam Hatch, MD joined the Mass. Eye and Ear

family on September 15, 2014. Known as Mass. Eye and Ear, Waltham, this practice offers a full range of specialty care, including cataract surgery, on-site laser vision correction, corneal crosslinking, and optometric services. As part of a multidisciplinary case management team, Karen L. Zar, OD also provides routine eye care and specializes in fitting contacts for a variety of needs.

Mass. Eye and Ear, Plainville
(Southern New England Retina Associates)
30 Man Mar Drive, Suite 2
Plainville, MA

Extending to the south, the Southern New England Retina Associates, located in Providence, RI and Plainville, MA, joined the Mass. Eye and Ear

Mass. Eye and Ear, Providence
(Southern New England Retina Associates)
One Randall Square, Suite 203
Providence, RI

family on October 15, 2014. Magdalena G. Krzystolik, MD and Paul B. Greenberg, MD specialize in the treatment of retinal diseases, such as age-related macular degeneration, diabetic retinopathy, and retinal detachment. Since 2011, Mass. Eye and Ear's vigorous expansion strategy and recruitment efforts have boosted by 34 percent the number of full-time clinical faculty, which now stands at 86. Through these acquisitions and recruitment efforts, Mass. Eye and Ear continues to expand its accessibility and services and strategically positions the department to take on an influx of new patients. ■



LOCATIONS:

- 1-Mass. Eye and Ear (main campus)
- 2-Mass. Eye and Ear, Stoneham
- 3-Mass. Eye and Ear, Longwood
- 4-Mass. Eye and Ear, East Bridgewater
- 5-Mass. Eye and Ear Retina Consultants, Stoneham
- 6-Mass. Eye and Ear, Waltham
- 7-Mass. Eye and Ear, Plainville
- 8-Mass. Eye and Ear, Providence, RI

A New Face Online! HMS Ophthalmology Website Launches

As a vital part of building brand awareness and visibility around our eight-member affiliate department, the HMS Department of Ophthalmology Communications group is pleased to announce the launch of a new, intradepartmental public website. The website is designed to promote awareness of our clinical, research and teaching activities, with emphasis on collaborative efforts ongoing in our Centers of Excellence and Institutes.

Communicating our efforts and accomplishments to multiple audiences (ophthalmology community, patients, researchers, prospective trainees, industry, supporters and alumni) and creating awareness of our work on a broader scale is critical to our progress. The new interface—with its simple, crisp design—showcases the Department's unity while providing users with an enhanced browsing experience across multiple devices. In addition to a landing page that features a slideshow highlighting key news and events, up-to-date information on educational programs and offerings can be quickly accessed through the HMS Ophthalmology Calendar.

The website is a work in progress, and we welcome your feedback and suggestions as we continue building. Send comments to Wendy Chao (Wendy_Chao@meei.harvard.edu) or Suzanne Ward (Suzanne_Ward@meei.harvard.edu). ■



eye.hms.harvard.edu

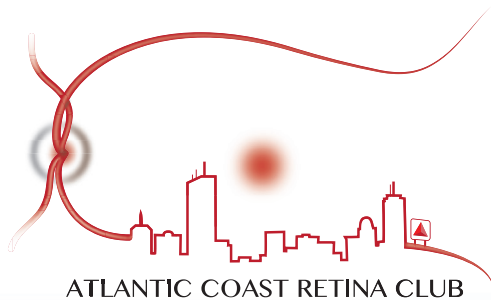
EyeWitness

News from Harvard Medical School
Department of Ophthalmology



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SAVE THE DATES



ATLANTIC COAST RETINA CLUB

MACULA 2015

JANUARY 8-10, 2015

**Join us in Boston
for the retina event
of the year!**

BOSTON

MassEyeAndEar.org/Macula2015

See page 14 for details.



Neuro-Ophthalmology Fall Festival

Meltzer Auditorium, Mass. Eye and Ear

November 8-9, 2014

See page 14 for details.